Student Teachers’ Perceptions of Cooperating Teachers as Teacher Educators: Development of Standards Based Scales

Dissertation

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By

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Cooperating teachers play important roles in student teachers’ development as educators. The purpose of this study was to develop a measure that enables systematic investigation of the actions and interactions of cooperating teachers during student teaching. Three sets of educational standards lent focus to this work. The measures developed were based on the five Core Propositions of the National Board for Professional Teaching Standards, ATE Standards for Teacher Educators and the Performance Outcomes from the ATE Standards for Field Experiences in Teacher Education.

The development of the measures occurred in a series of key phases. An initial pool of items based on each set of standards in education was developed for the instrument. Ten student teachers were then engaged in cognitive interviews which focused revisions to promote the clarity and suitability of the developing instrument. The revised items were then sent to panels of experts for feedback. The responding experts examined the items and provided feedback that included whether the items accurately represented the Standards intended. After revisions based on expert feedback, cognitive interviews were conducted with thirteen student teachers to determine whether the items were clear and suitable to student teachers after the revisions based on expert feedback. Student teachers participating in the cognitive interview process identified the items as
clear and suitable for student teachers. Each panel of experts identified the items as clear and accurately representative of the Standards intended. After the second round of cognitive interviews, the revised instrument was distributed to teacher preparation programs.

Respondents included 407 student teachers seeking initial teaching licensure through enrollment at one of the eleven participating Ohio Institutions of Higher Education. Each student teacher completed items relating to their cooperating teacher’s modeling of Core Propositions, enactment of ATE Standards for Teacher Educators, and helping the student teacher learn to demonstrate Performance Outcomes from ATE Standards for Field Experiences in Teacher Education. Student teachers also provided demographic data.

Data relating to item development and revision were analyzed by examination for themes in responses from student teachers and experts in each set of Standards. A Principal Components Analysis (PCA) was used to identify the interpretable underlying structure existing among the variables. Six dimensions, which explained 67.349% of the variance, were identified. The identified dimensions were examined and each identified scale was named. Calculation of Cronbach’s alpha coefficients for identified scales was employed to identify the internal consistency of each of the newly developed scales. The scales identified were “Modeling of Quality Classroom Pedagogies with P-12 students” ($\alpha = .952$), “Use and promotion of reflection in learning environment accepting of the candidate” ($\alpha = .956$), “Dedication to cooperating teaching through use of research, “
collaborations, and professional development” (α = .960), “Promotion of candidate understanding of/effective action involving connections between key components or stakeholders in education” (α = .932), “Modeling of collaboration with others relevant to p-12 student learning” (α = .834) and “Technology Orientation” (r = .620).

Pearson- r correlations between each newly developed scale and two embedded adaptations of an existing measure of teacher efficacy were calculated to provide evidence of validity. In the first adaptation, the items were worded such that the measure reflected the responding teacher candidate’s perception of how his or her cooperating teacher would respond to each efficacy item. In the second adaptation, the items were worded such that the measure reflected the responding teacher candidate’s perception of his or her own teacher efficacy. At the p < .01 level of significance, each new scale is positively correlated with the existing measure that was adapted to reflect the student teacher’s perception of his or her cooperating teacher’s self-efficacy. At the p <.01 level of significance, each of the subscales, except Cooperating Teacher Technology Orientation, has been shown to be positively correlated with the existing scale as adapted to describe the teaching self-efficacy of the responding student teacher. Significant positive correlations to the adaptation of the existing measure which focused on perceived cooperating teacher efficacy suggest validity of the newly developed scales.

Results from this study and follow up research enable enhanced understanding of cooperating teachers’ roles and action while working with student teachers. Additionally, this work promotes dialogue between entities related to teacher education and provides an opportunity for student teachers to reflect and provide feedback on key elements of their student teaching experiences.
Dedication

To my beloved family – Mom & Dad, Brandon Sr., Kareem, Mariana & Brandon Jr.

and to all others who contribute to and believe in education.

…so that there should be no division in the body, but that its parts should have equal concern for each other. If one part suffers, every part suffers with it; if one part is honored, every part rejoices with it.

1 Cor 12:24-26
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The completion of this dissertation has been a journey. Many of its steps have been joyful bounces. There have been times I adventurously stomped along and times I treaded lightly in measured cautious steps. Throughout this walk and particularly, during the times when I stumbled along the road, I have been supported by many who deserve my sincerest thanks. First, I must thank God who makes all things possible and has put many supportive people in my path.

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relationships with and among students that made learning both attainable and enjoyable.
To my student teachers, field experience candidates, and 10th graders, thank you for your
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Vita

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Chapter One: Introduction

In recent years, cooperating teachers have taken on increasing responsibility for the preparation of preservice teachers. The literature and policy research has identified preservice teacher learning as key to p – 12 student learning outcomes (Levine, 2006; NCTAF, 1996). Field experiences including student teaching have been identified as a critical component of preservice teacher learning (Osunde, 1996; Watts, 1987, p. 151 as cited in Koskela & Ganser, 1995). Cooperating teachers are noted to spend the most time and offer the most daily interaction with student teachers (Clarke, 2007; Osunde, 1996) and to have impacts on pre service teachers’ identity formation (Gratch, 2000), classroom management, planning, instructional delivery, efficacy and diversity related practices (ATE, 1999).

While both NCATE and Association of Teacher Educators’ definitions (ATE, 2007; NCATE, 2008, Glossary) suggest that cooperating teachers are teacher educators, research has not consistently identified cooperating teachers as having established this professional identity (Boudreau, 1999). Korthagen (2004) described identity as “the beliefs people have about themselves…[as]…who or what someone is, the various meanings people can attach to themselves, or the meanings attributed by others” (pp. 81-82) (as cited in McNay and Graham, 2007, p. 225). The lack of teacher educator identity
development in cooperating teachers may stem from a lack of training, support or recognition (Wilson, 2006).

Kent’s (2006) discussion of “inadequate training, according to Freiberg and Waxman, [that] yields cooperating teachers who lack the necessary background to supervise effectively” (p. 228) supports the need for clarity of both expectations and preparation for cooperating teacher roles. Clarke (2007) asserts that “the current practices for ensuring that cooperating teachers are professionally prepared for their work are woefully inadequate, and fail to address some of the most basic issues associated with the advisory work these teachers undertake with working with student teachers” (paragraph, 9 also see RATE IV, 1990; Glickman & Bey, 1990; Knowles & Cole, 1996). Additionally, while P-12 schools offer professional development designed to improve effectiveness at educating p-12 students, professional learning offerings focused on improvement of teacher educator effectiveness for cooperating teachers is often absent from p-12 settings (Huling, 1998, Slick, 1995). Absent or inadequate preparation may result in the “trial and error approach” to cooperating teaching described by Boudreau (1999), and findings that cooperating teachers see the roles and responsibilities of cooperating teaching as unclear (Koskela & Ganser, 1995) thus cooperating teachers tend to “construct their own definition of roles and responsibilities, often based on their own experiences as a student teacher and teacher” (Koskela & Ganser, 1995, p.6; see also Koerner, 1992). Approaches to cooperating teaching have lent variable levels of success in terms of student teacher preparedness for teaching and willingness to remain in the profession.
Current approaches to teacher education including field-based preparation through student teaching have faced significant criticism. Levine asserts that 62% of teacher education alumni report that “schools of education do not prepare their graduates to cope with the realities of today’s classrooms” (Levine, 2006, p. 64). Reports have indicated that new teachers, within five years of entry, leave the profession at rates as high as 50 percent (Duffield, 2006; NCTAF, 2003). Student teaching experiences must be made more productive for teacher candidates because as Jorissen (2002) asserts “the better prepared a teacher is, the more satisfied he or she will be, thus, more likely to remain in education” (paragraph 5).

Criticisms specific to student teaching may be remedied through enhanced effectiveness of cooperating teachers as field-based teacher educators. Critics have included poorly defined purposes for student teaching (Watts, 1987), disconnects between theory and practice, (Levine, 2006), weak relationships to other components of education programs (Guyton & McIntyre, 1990), and negative socializing pressures of field sites (Guyton & McIntyre, 1990) as among problems in teacher education. These problems of teacher education may be rooted in poor procedures for selection of cooperating teachers and university supervisors, and weak or nonexistent training provided to cooperating teachers and field supervisors (Glickman & Bey, 1990; Griffin, 1986; Metcalf, 1991; Zeichner, 1992).

Some cooperating teachers are highly effective at providing stimulating field-based learning experiences for teacher candidates that result in strong preparation for the realities of first year teaching while others’ work yields much less positive results. Since
cooperating teachers interact with student teachers in ongoing ways in authentic classroom contexts, and have been recognized as powerful agents of pre service teacher change (Kent, 2001; Koeppen, 1998), it is imperative that these teacher educators have access to appropriately articulated expectations, learning experiences and support that prepares them to enact cohesive and effective learning experiences for future teachers. These outcomes are unlikely without in-depth inquiry into the elements of quality cooperating teaching and how effective cooperating teachers gain the knowledge and skills that promote quality in teacher education.

ATE Standards for Teacher Educators to promote more effective teacher education were initially developed in 1996 and have been revised as recently as the Winter 2007 meeting of the Association of Teacher Educators (ATE, 2007, p. 2). The establishment of the Standards have, for the first time, articulated a framework that may be employed by both university-based teacher educators and field-based teacher educators including cooperating teachers. Thus, the Standards hold promise as a unifying force for teacher education. The development of these Standards also serves to provide a framework for what cooperating teachers should know and be able to do. This articulation may result in enhanced preparedness for cooperating teaching and provide a critical foundation for addressing the “general lack of preparation of cooperating teachers for supervision of student teachers” (Kent, 2001, p. 228; also see Guyton, 1989; Freiberg & Waxman, 1988; Sudzina, Giebelhaus, & Coolican, 1997). To date, however, it is unclear that many cooperating teachers are aware of these Standards.
A lack of dissemination of the Standards to cooperating teachers may be due to the problem of “knowledge diffusion” described by Darling-Hammond (1999a) as the presence of few reliable vehicles for transmitting researchers’ increasing understandings of teaching and learning to the field. “In the United States, education knowledge has been disseminated through research journals and monographs read by other researchers, rather than clinical journals widely read by practitioners” (p.11). Another possibility is that as is the case with many innovations related to teacher education, the central focus during the development of these standards was application to the contexts of University-based teacher education faculty and University field experiences personnel. Although cooperating teachers as school-based teacher educators fit within the definition of teacher educators provided by the developers of the Teacher Education Standards (ATE, 2007, Klecka, Donovan, Venditti & Short, 2008), research has yet to identify whether each Standard as currently articulated is applicable to their work with student teachers. Two studies (Creeley, Davis, Johnson-Naden, Korkatsch-Groszko & Bercik, 1999; Klecka, Donovan, Venditti & Short, 2008) have examined enactment of Teacher Educator Standards by teacher educators, however both have explored the perspectives and work of university-based teacher educators (campus-based course instructors, campus-based field supervisors & graduate students engaged in teaching and research) and neither connected enactment findings to student teachers’ perception of their learning or to interactions with cooperating teachers. Examination of the extent to which student teachers perceive cooperating teachers as enacting these Standards and how enactment of the Standards relates to student teacher learning is thus necessary as an early measure of
the extent to which these Standards are enacted by and applicable to cooperating teaching contexts.

The development of an instrument to measure cooperating teaching actions is likely to serve as a key development toward comparison of the field-based teacher education available through different methods of teacher preparation. Some models, such as professional development school approaches, exist in which cooperating teachers work closely and share common visions of teacher education and p-12 student needs with campus-based faculty. Such contexts have been shown to provide student teachers with strong foundations for beginning teaching. However, strong teachers also emerge from more traditional teacher preparation experiences in which campus-based and field-based teacher education are less closely coupled. Identification and assessment of specific aspects of high quality integrative cooperating teaching practices that support both p-12 and student teacher learning may serve as key starting points for systematic improvements. Clarification of expectations of cooperating teachers may result in improvement not only of their understanding of their work, but also in learning gains for teacher candidates and thus p-12 students as well.

Some, but not all, cooperating teachers are likely to engage in practices that demonstrate the skills and abilities required of effective teacher educators. What forms of professional learning distinguish cooperating teachers who are recognized by their student teachers as effective teacher educators from those who are less positively associated with teacher education? What existing professional learning experiences
provide cooperating teachers the knowledge and skills necessary to maximize their ability to effectively engage in the work of field-based teacher educators?

Although intended for p-12 educator roles, some forms of professional development available to teachers result in professional learning that may readily transfer to cooperating teaching contexts to enhance teachers’ capabilities as teacher educators. Professional learning, characterized by sustained examination of classroom practice in the setting where the teacher works has been recognized by Fullan and colleagues as “the only learning that changes classroom instruction” (Fullan, Hill & Crevola, 2006, p. 25). These authors support others’ findings that “professional development works when it is ‘school-based and embedded in teachers’ daily work’ (Cross City Campaign, 2005, p. 10 as cited in Fullan et al., 2006, p. 24). Cooperating teachers who have gain knowledge and skills to promoting learning tailored to individual needs may enact these abilities in teaching contexts involving not only their p-12 students, but also student teachers as learners.

The National Board Certification process has been identified as a powerful professional learning experience which identifies effective educators. Under appropriately motivating conditions, National Board Certification may promote sustained enactment of professional learning for teachers. P-12 teachers as National Board candidates must demonstrate abilities that bear striking similarities to research and standards based recommendations for effectiveness in teacher education. However, to date a gap in the research exists with regard to the extent to which the National Board Certification or enactment of National Board Core Propositions is associated with
competencies that transfer to increase teacher educator effectiveness in cooperating
teachers as measured by student teacher perceptions.

National Board Core Propositions, and ATE Standards for Teacher Educators,
sets of professional standards for teaching, may serve as a vitally associated links
between p-12 teaching and teacher education. These potentially related frameworks hold
promise to bridge the gap between campus and field-based sites for preservice teacher
learning. Enhanced understandings resulting from the amalgam of these frameworks may
be an essential catalyst for such reforms in teacher education as the development of
systematic professional development offerings that link p-12 and teacher education goals,
frameworks for cooperating teacher selection and evaluation and more effective
programmatic decision-making regarding the advanced teacher education of teachers
seeking or engaged in cooperating teaching roles.

**Statement of the Problem**

The goal of cooperating teaching is to promote learning in teacher candidates and
as a result p-12 students. In recognition of this goal, the problem of the identification of
existing frameworks that assist cooperating teachers in maximizing student teacher
learning during culminating clinical practice emerges. While cooperating teachers are
well intentioned in their work with student teachers, few are adequately prepared by
schools, colleges and departments of education for the challenging work of cooperating
teaching (Koskela & Ganser, 1995; RATE IV, 1990; Sinclair, Dowson & Thistleson-
Martin, 2006). Currently no unified framework exists for the selection, preparation and
evaluation of cooperating teachers by teacher education programs. School administrators
are reluctant to distinguish between teachers who should engage in cooperating teaching work and those who should not due to contractual stipulations (Clarke, 2007). Thus cooperating teachers have discrepant qualifications for their roles as teacher educators and many rely largely upon their own potentially dissimilar experiences as student teachers and as teachers as guiding foundations for their field-based teacher educator roles. Differences in professional development experiences may also lead to inconsistent levels of effectiveness as teacher educators.

The teacher education community has yet to explicate and disseminate a shared expectation regarding knowledge, skills and dispositions necessary for cooperating teachers’ work as teacher educators or how cooperating teachers might acquire the professional learning that promotes effective prompting of student teacher development. Cooperating teachers experience minimal provisions for professional learning tailored to school-based teacher educator contexts. An additional problem that increases the complexity of the issue is a lack of a shared language or framework across programs and learning sites for teacher candidates.

**Purpose of the Study**

The purpose of this study was to develop an instrument that can be used to explore student teachers’ perceptions of their experiences with cooperating teachers during student teaching placements. Since student teaching serves as a key element of preparation for initial teacher licensure and beginning teaching practice, I chose to focus on student teachers’ perceptions of the teaching actions of the cooperating teachers who enact student teachers’ field-based teacher education. In particular, I also wanted to
examine possible connections between extent to which cooperating teachers are perceived to enact NBPTS Core Propositions and ATE Standards for Teacher Educators in student teaching contexts and how this relates to student teachers’ perceptions of their having been helped to learn to demonstrate Performance Outcomes from the ATE Standards for Field Experiences in Teacher Education. This knowledge holds potential for the identification of cooperating teacher differences related to National Board Certification status and may inform teacher education programs in the selection, evaluation, and preparation of cooperating teachers who are most likely to promote candidate learning through enactment of teacher educator roles. If National Board Certification or enactment of core propositions is associated with gains in field-based teacher education effectiveness, this existing professional learning framework may be expanded to support professional learning for field-based teacher educators. Alternatively, some but not all components of existing frameworks may be identified as important to student teacher learning thus focusing cooperating teacher preparation efforts. The techniques employed during the instrument design process are also likely to provide insights into the extent to which student teachers perceive Standards for Teacher educators as applicable to student teaching contexts.
Conceptual Model of the Study

The Figure 1.1 presents the constructs that were included in the initial draft of the instrument. The goal of the instrument design process was to develop a measurement tool that reliably describes the extent to which each construct is enacted in the context of student teaching experiences. The top center box represents student teaching as a set of experiences inclusive of each of the constructs and experiences in each of the other boxes. The center three boxes represent the Standards that served as foundations for the newly developed items. Each side box represents demographic characteristics which could be explored in conjunction with student teacher responses to identify trends and patterns by demographic categories.
Student Teachers' Perceptions based on their experiences with their Cooperating Teacher

Perceptions of Cooperating teachers’ modeling of NBPTS Core Propositions in the Student Teaching Context

Perceptions of Cooperating teachers’ Enactment of ATE Standards for Teacher Educators in Student Teaching Context

Student teachers’ perceptions of having been helped to learn to demonstrate Performance Outcomes from Field Experiences in Teacher Education.

What relationships exist among these constructs?

Figure 1.1 Conceptual Model of the Study
Research Questions

The following section introduces the research goal and questions intended to facilitate the achievement of the research goal. The goal of this study is the development of a valid and reliable instrument that elicits student teachers’ perceptions of cooperating teaching actions during clinical practice and the extent to which student teachers perceive themselves as having been helped to learn to demonstrate the Candidate Performance Outcomes from the ATE Standards for Field Experiences in Teacher Education. To achieve this goal of instrument development, five questions guide the study.

1. What items written for the instrument best represent the constructs intended by the ATE Standards for Teacher Educators, Core Propositions and Performance Outcomes for teacher candidates?

2. To what extent are the items included in the new instrument clear and suitable to student teachers?

3. What interpretable underlying structure exists among the variables examined with this measure?

4. What level of reliability can be attained with this measure?

5. Is there evidence of validity of the newly developed measure?
Definition of Terms

The following section provides a definition of key terms utilized in both the research required to develop the instrument and in the review of the literature that provided background for this study. Clarity in understanding of these terms and how they relate to the research allows for meaningful and consistent use of the terms in their application to the research questions and data to be gathered from this study.

1. Clinical practice - “Student teaching or internships that provide candidates with an intensive and extensive culminating activity. Candidates are immersed in the learning community and are provided opportunities to develop and demonstrate competence in the professional roles for which they are preparing” (NCATE, 2008, Glossary).

2. Cooperating Teacher - In this study, the term cooperating teacher is used synonymously with the term clinical faculty. “P-12 school personnel and professional education faculty responsible for instruction, supervision, and/or assessment of candidates during field experiences and clinical practice” (NCATE, 2008, Glossary).

3. Student Teacher – A teacher candidate who is engaged in an intensive and extensive culminating field experience in which he or she ultimately takes on full responsibility for the duties of a professional educator under the guidance of a cooperating teacher as mentor. A student teacher is a teacher candidate engaged in clinical practice.
4. Field Experiences - “A variety of early and ongoing field-based opportunities in which candidates may observe, assist, tutor, instruct and/or conduct research. Field experiences may occur in off campus settings such as schools, community centers, or homeless shelters” (NCATE, 2008, Glossary).

5. Student Teacher Learning Through Clinical Practice – The extent to which a student teacher perceives themselves to have increased proficiency at knowledge, skills and dispositions described in the Performance Outcomes of ATE Standards for Field Experiences in Teacher Education as advanced by the Association of Teacher Educators through interaction with his or her cooperating teacher in the student teaching context.

6. Teacher Candidate – In the context of this study, the term teacher candidate is used synonymously with the term pre service teacher. “Individuals admitted to, or enrolled in, programs for the initial or advanced preparation of teachers, teachers continuing their professional development, or other school professionals. Candidates are distinguished from students in P–12 schools” (NCATE, 2008, Glossary).

7. Characteristics of Student Teachers – Student teachers’ self reported demographic data. Self reported demographic data will include length of student teaching experience, and student teaching placement characteristics such as grade level assignment and type of school district. Data collected regarding student teachers’ series of field experiences includes the number of field placements, types of communities of preliminary field placement sites and subject areas taught.
Regarding licensure sought by the teacher candidates the researcher gathered data to include the grade level range and subject area of the license sought. The researcher also collected data regarding the degree sought, gender, age, ethnicity, and institution attended by respondents.

8. Cooperating Teachers’ National Board Certification Status – The selection of “Yes,” “No” or “Don’t Know” reported by responding student teachers to indicate whether his or her cooperating teacher has formally achieved National Board Certification through earning a passing score on portfolio and assessment center exercises as required by the National Board for Professional Teaching Standards.

9. Perceptions – Perspectives or attitudes held by student teachers about their student teaching experiences with cooperating teachers in clinical practice settings.

10. Cooperating teaching – The multiple roles and interactions taken on by cooperating teachers to support the development of student teachers. In particular, these roles have been identified to include:

   a. modeling of quality classroom pedagogies with p-12 students
   b. using and promoting reflection in a learning environment accepting of the candidate
   c. demonstrating a dedication to cooperating teaching through the use of research, collaborations and professional development
   d. promoting candidate understanding and of/effective action involving connections between key components or stakeholders in education
   e. modeling of collaboration with others relevant to p-12 student learning
f. cultivating a technology orientation that is conveyed to the student teacher
Underlying Assumptions

This non-experimental quantitative study assumes that cooperating teachers are and will continue to be a key element of the preparation of beginning teachers. For participation in the study, I did not require that any specialized training for the role or cooperating teacher was provided by the university that assigned student teachers to work in the classrooms of cooperating teachers.

I assumed that cooperating teachers, similarly to most other p-12 educators, must obtain continuing education units for licensure renewal and engage either formally or informally in professional development offerings. I assumed that these endeavors are intended to enhance educators’ work with their p-12 students but were not intentionally connected to their work in service to universities as field-based teacher educators.

Regarding the importance of field placements, I hold the assumption that high quality field placements including student teaching sites and cooperating teachers hold the power to improve student teachers’ instructional capabilities as beginning teachers. I also assumed that cooperating teachers who elect to host student teachers do so on the basis of positive motivations such as the advancement of the teaching profession and do not intentionally set out to detract from the quality of learning experiences for either their p-12 students or student teachers.

Additional assumptions of the study included:

1. The research base utilized in the original development of the Standards and Core Propositions that serve as a foundation for the instrument under development was
appropriate, and was utilized with great care by experts in the field to generate Standards and Core Propositions which reflect best practices in education.

2. The role of a cooperating teacher is not simply to “agree” or to “appear cooperative” with regard to any approach a university or a student teacher may take with regard to the performance based learning of student teachers, but rather to engage deeply in use of assessment and knowledge of learner development to craft relevant learning experiences that advance both p-12 student and teacher candidate learning.

3. The teacher candidates that participated in this study desire to become the most effective teachers they can be.

4. Student teachers participating in the cognitive interview process and testing of the proposed instrument during the study provided their honest, unbiased feedback and opinions to when providing responses as part of the study.

5. Student teachers who responded to the questionnaire as part of the study were able to gather information from their cooperating teacher’s National Board Certification status prior to completing the questionnaire.

6. Respondents read all directions and items on the questionnaire. It is also assumed that the directions were consistently applied across the participating institutions.

7. Respondents made use of evidence from their experiences as student teachers to make their selections on the Likert-type rating scale.

8. The instrument developed and revised through consultation with experts in each area examined and teacher candidates participating in cognitive interviews
included all components necessary for adequate measurement of the constructs intended.

9. Each respondent was rational, and mentally and physically capable to complete the questionnaire at the time of his or her response.
Chapter Two: Review of the Literature

The review of the literature for the study as proposed is presented in five sections. In the first section, the theoretical framework for the study, theories on learning and contextualized research on teacher education are presented through a chronological examination of shifts in theoretical perspectives on teaching and learning and their connection to research. Second, the highly contextualized history and importance of teacher education with regard to field experiences and student teaching is examined. Current performance outcomes from ATE Standards for Field Experiences in Teacher Education are also presented. In the third section, cooperating teachers, their contextual roles and challenges, and supports to their work with student teachers are explored through discussion of the existing research base. In the fourth section, the National Board Certification process is introduced, described, and examined in terms teacher engagement, professional learning, and outcomes with which National Board Certification has been associated. The fifth and final section briefly presents the history of the Standards for Teacher Educators as advanced by the Association of Teacher Educators, summarizes research which has emerged from the development of these standards and proposes connections between the Core Propositions of the National Board for Professional Teaching Standards and the recently revised Teacher Educator Standards.
Section One: Theoretical Context of Learning and Research in Education

Through the history of teacher education, expectations of student teachers and the cooperating teachers who work with them have changed significantly. While these changes over time were based on conceptualizations of learning and education research, each in isolation may contribute to highly variable and sometimes fragmented views of teacher education through field experiences in the absence of appropriate professional learning opportunities for cooperating teachers. Work to synthesize views of teaching and learning across contexts and disciplines may serve to enhance the effectiveness of teacher educators, pre service educators and ultimately p-12 student learning.

The theoretical basis for this research study was founded on theories on learning and the evolution of research on teacher education over the course of the past fifty years. The contexts and expectations of faced by cooperating teachers are largely shaped by research and policy in teacher education. In the past fifty to sixty years teacher education has been more closely examined than ever before and many recommendations have been presented. The issues, questions and conditions that frame the examination of teacher education, and thus shape the work of cooperating teachers have been referred to by Cochran-Smith (2004a) as the “problems” of teacher education. From the 1950s to the early 1980s teacher education was conceptualized as a “training problem” (Cochran-Smith, 2004a, p.295). During this time most teacher education research focused on preparing teacher candidates to be able to demonstrate behaviors associated with high pupil test scores. In this time period, roles and relationships of cooperating teachers were discussed minimally in the literature, and when they were, the focus was on behavioral
and psychological views of teacher training. Cooperating teachers’ conceptualizations of their roles and responsibilities were under addressed and appeared not to be a recognized component of teacher education imperatives. In the period from the 1980’s to early 2000’s, during the conceptualization of teacher education as a “learning problem”, some research shifted to include studies of cooperating teachers and the relationships they engaged in to make meaning of how pre-service teachers gained the skills necessary to become successful educators (Cochran-Smith, 2004a, p.295). Thus process-based considerations of cooperating teaching took center stage. Beginning with mid 1990’s to the 2000’s teacher education has been explored as a “policy problem” and as such, in the face of testing and increased legislation demanding achievement gains for not only students as a whole, but subgroups of students, attention has shifted to how knowledge gained of best practices, and the learning process for both teachers and students can be combined to focus on realizing documentable gains for all children (Cochran-Smith, 2004a, p.295). Cooperating teachers play a critical role in this process, but continue to remain understudied. Thus the goals of teacher education can be described as having changed over time. The history of teacher education research contributes to complex sets of expectations which over time have shaped the preparation enacted beliefs of cooperating teachers.

**Perspectives on Learning**

Cochran-Smith’s (2004a) framework for understanding shifts in teacher education research maps well onto perspectives on learning presented by Mayer (1996) and others (see Greeno, Collins and Resnick, 1996). These conceptualizations lend insight into how
teacher candidates were perceived to best learn to become effective teachers during each
time period. Perspectives identified in the literature including behaviorist/empiricist,
cognitive/rationalist, the situative/pragmatist views mirror the research trends of each
time. Mayer’s (1996) summary which focused on transitions in the history of research on
teaching and learning in a more general sense mirrors Cochran-Smith’s analysis of
research trends specific to teacher education. Mayer (1996) identifies key research in and
before the 1950s as based on behavioral concepts and notes a shift toward emphasis on
examination of the processing of information in the 1960s and 1970s. This research
parallels teacher education’s focus on content knowledge for teachers during this time.
Following the 1970s an increasingly constructivist approach yielded research centered on
a view of learning as the construction of knowledge situated in context and interactions.
Awareness of these frameworks informs analysis of the contexts in which cooperating
teachers have carried out their work as field-based teacher educators and have selected
among teaching actions in their work with student teachers over time.

**Teacher Education as a “Training Problem”**

As early as 1955, it became clear that student teaching would shift from campus
laboratory schools to the context of the public schools (Lindsey, 1966). This shift
expanded the roles of public p-12 educators in the preparation of new teachers. Early
studies examining the impact of cooperating teachers were consistent with the behavioral
and training foci of this time period. For instance, research found that student teachers
tended to take on the verbal behaviors of their cooperating teachers. Lindsey (1966)
described teaching as “behavior on the part of one individual that attempts to maneuver
factors in an environment in such ways as to induce learning toward designated goals” (p. 43). Lindsey (1966) identifies a central purpose in working with student teachers as to examine the quality of the inducement to learn and the product of learning which “depends chiefly upon the nature of the teacher behavior in the encounter” of working with students (p. 44). Thus it can be reasoned that a primary role of cooperating teachers was that of evaluation of behaviors. Sarason, Davidson & Blatt, in the revised edition of their 1962 work, extend this notion of cooperating teaching. They assert that the supervision student teachers receive from the teachers they work with is more focused on the “technical and engineering” aspects of teaching such as lesson plans, projects, and curriculum materials as opposed to matters of individual students such as the arousal of their curiosity, efforts to get them to contribute their ideas to their learning, or recognition of their individual differences (p.8). Thus it appears that cooperating teachers functions included a focus weighted heavily toward the evaluation of products and artifacts as opposed to the learning process and individualization. The authors identify most cooperating teachers as without special training in the supervision role and as paying far more attention to matters of lesson plans and housekeeping issues than problems more challenging to convey to the student teacher. This recognition may have served as an early signal of important gaps in cooperating teachers’ preparation and cooperating teachers’ tendency to focus on concepts familiar from their own work when training for teacher educator roles is absent.

In part, Sarason, Davidson & Blatt (1986) attributed these problems to teachers’ negative self image which stemmed from the belief that they should be equally effective
with all types of students though special education had recently developed in the public education arena. Professional development toward meeting the needs of individual learners was a need of this time period. However the authors identified the culture of schools to “often not support admitting knowledge of professional shortcomings and seeking help from others” (p. 80; Lortie, 1975).

Although cooperating teachers voices were seldom directly heard in the literature of this time, recommendations regarding cooperating teachers’ roles also focused on their behavioral actions including how and when they should introduce the student teacher to the class, how much work to assign to the student teacher, and the extent to which student teachers should take responsibility for teaching (Anson, 1959; Blair, 1960; Garner, 1971; Tanruther, 1964). During this time the roles of cooperating teachers largely focused on socialization of teachers into the profession by demonstrating and promoting specific teaching behaviors. Most notably, the 1957 launch of Sputnik, the first satellite in space, by the Soviets prompted concern about America’s preparation to be internationally competitive. Key research and policy documents included reports criticizing teacher education such as the 1963 studies by Conant and Koerner which prompted increases in the content preparation of teachers. A notable absence from the literature of this period is discussion of the cooperating teacher as helping the student teacher to make meaning of how the students learn. Consideration of teacher education as a “training problem” was criticized because of the lack of focus on instructional decision-making (Cochran-Smith, 2004a, p.295). Also absent was examination of how cooperating teachers promote student teachers’ ability to make meaning of how they learn through clinical practice.
Teacher Education as a “Learning Problem”

As teaching became conceptualized as a “learning problem” excellent teachers were identified as those who were “knowledgeable about subject matter and pedagogy and who made decisions, constructed responsive curriculum, and knew how to continue learning throughout the professional lifespan” (Cochran-Smith, 2004a, p. 296). Ideally, excellent teachers would serve as cooperating teachers. During this time the goal of teacher preparation programs was to create social, organizational and intellectual contexts that enabled teacher candidates to develop knowledge, skills and dispositions that would enable them to make productive decisions. Teacher candidates’ interpretation of their fieldwork was also valued. New additions of this period included a focus on the perceptions and beliefs of teacher candidates.

Cooperating teachers’ responsibilities heightened once more as they were called upon to take on yet greater responsibility for teacher preparation during field experiences as teacher candidates were required to engage in 8 to 18 weeks of student teaching (Darling-Hammond, 1999b). Cooperating teachers also increasingly engaged in school university partnerships in which they serve as boundary spanners between p-12 school and the university (Bullough, 2005). However, cooperating teachers still enacted teacher education practices that revealed challenges related to knowledge of beginning teacher development. Indications identified through research included withholding of assistance from student teachers due to the belief that developing teachers needed to find their own style (Feiman-Nemser, 2001) and limited reflection on good teaching (Korthagen, 2004).
Relationships gained recognition as important to teaching (Oberski, Ford, Higgins, & Fisher, 1999), but cooperating teachers experienced difficulty developing identity as teacher educators. In particular, disconnects with field supervisors (Bullough, 2005) and the university-based teacher educators (Koster, Korthagen & Wubbels, 1998) created challenges for cooperating teachers in terms of assisting student teachers in making meaningful connections between their coursework and student teaching. Cooperating teachers also faced conflicting views of the value of mentoring (Bullough, 2005). Studies began to explore the relationships between cooperating teachers and their student teachers and how context and beliefs impacted preservice learning about teaching. For example, Hall and Davis (1995) identified six role relationships that develop over the course of student teaching experiences: clearinghouse, expert/mentor/master teacher, facilitator, mediator, motivator and friend. Within each of these roles there were many situation specific contexts in which each could be activated. The bidirectional nature of learning between cooperating teachers and student teachers was also explored (Hall & Davis, 1995). Key criticism of this period was that “it focused on teachers’ knowledge, skills, and beliefs without adequate attention to pupil’s learning” (Cochran-Smith, 2004a, p. 297). It became evident that procedures and policies to provide a focus on both teacher and student learning were necessary.

**Teacher Education as a “Policy Problem”**

In the time period that followed, and continues today, teacher education is construed as a “policy problem” focused on the identification of elements that can be controlled by policies enacted by institutions, states, or the federal government to have
positive impacts on student learning (Cochran-Smith, 2004a, p.295). This line of reasoning is different from the others in that it seeks to attend to the varied dimensions of the “outcomes question” (Cochran-Smith, 2001) including teacher knowledge, and student learning by enacting policies that more strictly regulate, (or deregulate) the teaching profession. Many changes in the roles of cooperating teachers have resulted from consideration of teaching and learning as an outcomes question situated in a “policy problem” (Cochran-Smith, 2004a, p.295). Darling-Hammond (1999b) argues that “In the United States, new standards for teacher education accreditation and for teaching licensing, certification and ongoing evaluation have become a prominent lever for promoting system-wide change in teaching” (p.5).

Cooperating teachers are now charged with instructing, advising and providing feedback to student teachers with regard to their performance in a context of growing professional and national standards that shape regulations for what teacher candidates should know and be able to do (University of North Texas, 2006; Wright State University, 2007). The complexity of their current roles is further increased by high stakes student testing which results in publicized outcomes of teaching not only for students as a whole, but also by subgroups including racial and cultural groups, economic status, English language proficiency and disability status (Ohio Department of Education, n.d.b) Additionally standards seek to more clearly define characteristics that should be hallmarks of quality clinical faculty. For example, school faculty utilized by NCATE-approved units for field placements are to “demonstrate the knowledge and skills of accomplished school professionals” (NCATE, 2007). Criteria for “accomplished school
professionals,” however, are locally defined and are inconsistent despite a clear policy agenda toward increased qualifications for cooperating teachers designed to reflect the importance of student teaching to pre service teacher development. More research is needed to establish clear connections between cooperating teaching actions and student teacher learning in order to identify an appropriate set of expectations for field-based teacher educators.

Section Two: Field Experiences and Student Teaching

The Importance of Field Experiences in Teacher Education

Since the 1950s when authentic experiences in teacher education began their transition from campus laboratory schools to public school settings, field experiences have been increasingly identified as critical components of teacher preparation (Darling-Hammond, 2006, NCTAF, 2003b; Schneider, 2008). Extended classroom practice under the guidance of a cooperating teacher socializes student teachers into the profession and provides opportunities to experience the realities of the contexts of schools firsthand and observe the complexity of teaching through examination of realistic teaching actions, goals and expectations (Koskela & Ganser, 1995; Watts, 1987). Field preparation experiences have been connected to increased student achievement and decreased teacher attrition (Darling-Hammond, 2006; Henke, Chen & Geis, 2000; Nakai & Turley, 2003; NCTAF, 2003a). Teachers who receive strong mentoring have been identified as significantly more likely to stay in the profession (Luczak, 2004; NCTAF, 1996).

Supports available to student teachers through extended field experiences include regular observation and feedback (Ridley, Hurwitz, Hackett and Miller, 2005). Support
and prompting for reflection in field experiences enable some to make focused improvements to their practice. Teacher candidates may also see firsthand how the theoretical understandings gained from university coursework are played out in classroom settings (Darling-Hammond, 2003, 2006). Through interactions in the schools, pre service teachers observe the outcomes of more experienced teachers’ decision-making and have the opportunity to engage in their own authentic educational decision-making (Nakai & Turley, 2003).

Teacher candidates, especially during student teaching, are provided the opportunity to craft and deliver instructional sequences and thus begin to reflect on and to assess the quality of their own teaching (Carnegie Corporation, 2001) and gain self-confidence through practice. Candidates’ engagement in the crafting of goals and rationales and instructional delivery may assist them in developing the ability to communicate in more clear and specific ways. By means of authentic first hand experiences in field settings, candidates are better prepared to face and successfully address the challenges of real classrooms and schools than those who do not engage in extensive field experiences inclusive of student teaching (see Darling-Hammond, 1999). Pre service teachers may also be granted access to varied forms of student data which affords them practice with integrating decision-making processes with school contexts, goals and available knowledge of students. Through interactions with learners in their field settings, particularly those in which they are encouraged to design or participate in classroom research, candidates may begin to integrate theory, practice and their own applied research into their teaching. Through field experiences, teacher candidates
engage with professional educators on issues surrounding students and their needs and participate in learning communities. Through these experiences, candidates explore what student diversity may look like in different settings and experience enhanced possibilities for learning to address student learning needs and interests in authentic and appropriate ways that support learning goals (Darling-Hammond, 2006).

Standards have been developed in an attempt to define what well prepared entrants to a profession should know and be able to do.

Standards for teaching are the linchpin for transforming current systems of preparation, licensing, certification, and ongoing development so that they better support student learning. [Such standards] can bring clarity and focus to a set of activities that are currently poorly connected and often badly organized…Clearly, if students are to achieve high standards, we can expect no less from their teachers and from other educators. Of greatest priority is reaching agreement on what teachers should know and be able to do to teach to high standards.

(NCTAF, 1996, p. 67 as cited in Darling-Hammond, 1999, p. 5)

Recently developed standards underscore the importance of a “more active, integrated, and intellectually challenging curriculum for all students” (Darling-Hammond, 1999, p. 6). Three sets of independently developed standards may serve to address the outcomes problem of effective field-based teacher education – ATE Standards for Field Experiences in Teacher Education, National Board for Professional Teaching Standards built on five core propositions, and ATE Standards for Teacher Educators. The development of National Board Standards reflect Darling-Hammond,
Wise and Klein’s (1995) recognition of the standards development as occurring through certification as professional recognition of high levels of competence. Implementation of these National Board core propositions, the overarching framework for the standards for accomplished teaching, in ways connected to ATE Standards for Field Experiences in Teacher Education and ATE Standards for Teacher Educators may serve to realize these researchers’ other two notions of standard setting – connections to professional accreditation of preparation programs and state licensing which authorizes practice. Alignment of standards is key to cohesiveness and compatibility of efforts to advance teacher education (Vaughan, 1998). As standards are presented in the sections that follow, potential overlaps and connections are identified in an effort to present a cohesive picture of how teacher education may be advanced.

**ATE Standards for Field Experiences in Teacher Education**

Standards for Field Experiences in Teacher Education were developed by the Association of Teacher Educators to synthesize and encourage application of knowledge gained over time to identify beneficial experiences for teacher candidates. The standards also delineate what pre service teachers should know and be able to do as a result of engagement in field experiences including student teaching. The Association of Teacher Educators in 1999 developed Standards for Field Experiences in Teacher Education that describe performance outcomes for teacher candidates as a result of field experiences. These Standards mirror the knowledge, skills and dispositions of effective educators as described by NCATE and research in teacher education.
The ATE Standards for Field Experiences in Teacher Education acknowledge the desirability of some variability in programs while ensuring a minimum level of program quality (ATE, 1999). The standards emphasize units’ development of coherence in planning and sequencing of field experiences and alignment with programs’ conceptual frameworks. Specifically, with regard to program coherence, the standards advocate for connections between principles and theories form the conceptual framework(s) to actual classrooms and schools, encouragement of reflection supported by feedback, and extensive and intensive student teaching experiences that span at least ten weeks (ATE, 1999).

With regard to collaboration, the Standards for Field Experiences in Teacher Education acknowledge that “true collaboration takes time” and is built upon trust, two way dialogue and working relationships (ATE, 1999, p. 9). The Standards urge that “participants in the field experiences triad [cooperating teacher, university supervisor and student teacher] must take steps to collaboratively ensure that role expectations are made explicit and are clearly articulated among all three members of the triad” (ATE, 1999, p. 9). Consensus and articulation of clear standards may assist in the development of common expectations and goals for all members of the triad. Recommendations are made that “the public schools share with higher education institutions the responsibility for field-based portions of teacher education and incorporate the role of teacher education into the school structure” (ATE, 1999, p. 9). Building upon existing professional learning opportunities such as National Board Certification for p-12 teachers may serve as a bridge between school and university contexts.
Overall, ten key recommendations are advanced through the development of this set of standards. As presented in the Standards document, these imperatives are:

- The recognition of the developmental level(s) of teacher candidates engaged in field experiences
- Improvements to the quality of field experiences through provision of “better planned and more deliberative field experiences based on program goals”
- Shared responsibility for field experience programs in which institutions of higher education and schools collaboratively develop and implement field experiences
- Increased attention to enhancing teacher candidates’ ability to teach diverse children in diverse settings
- The development of a focus on reflection on and analysis of teaching and learning as an essential component of learning to teach
- The employ of well qualified school based and campus based teacher educators who work with teacher candidates in recognition of their essential nature to the appropriate development of teacher candidates
- Careful selection of contexts for field experiences
- High levels of relation between field experience programs and teacher education program goals and standards
- Provision of feedback and assessment as essential characteristics of quality field experience programs
- Recognition of the essential nature of good communication among all parties involved in field experiences
In addition to advancing imperatives for improving the quality of field experiences in teacher education, outcome measures for teacher candidate performance upon completion of field experiences in teacher education are presented. These measurable authentic teaching practices are referred to as Candidate Performance Outcomes and are summarized in Table 2.1 that follows.
Table 2.1
Candidate Performance Outcomes From ATE Standards for Field Experiences in Teacher Education

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<tr>
<th>Outcome</th>
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<tr>
<td>1</td>
<td>The teacher candidate supports practice with theory and research</td>
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<td>2</td>
<td>The teacher candidate reflects on teaching.</td>
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<td>3</td>
<td>The teacher candidate makes sound educational decisions.</td>
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<tr>
<td>4</td>
<td>The teacher candidate articulates the connections and disconnections between the teacher education program and outcomes and practices in the field.</td>
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<td>5</td>
<td>The teacher candidate demonstrates increased professional learning (in areas outlined above).</td>
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<td>6</td>
<td>The teacher candidate uses feedback on practice to make changes to increase student learning.</td>
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<tr>
<td>7</td>
<td>The teacher candidate assesses their own teaching on a regular basis.</td>
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<tr>
<td>8</td>
<td>The teacher candidate demonstrates increased self-confidence and skills in communication.</td>
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<tr>
<td>9</td>
<td>The teacher candidate understands that teaching is complex and demonstrates an ability to reflect on educational issues and apply good decision making skills.</td>
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Student Teaching as Compared to Other Field Experiences

While ATE Standards for Field Experiences in Teacher Education apply to varied forms of field experiences, student teaching is to be recognized as a unique and critical component of initial teacher preparation. Student teaching is distinct from other forms of field experiences by virtue of its increased depth and the length of the learning experience provided for teacher candidates. The National Council for Accreditation of Teacher Education (NCATE), the accreditation body for teacher education units, describes field experiences as “A variety of early and ongoing field-based opportunities in which candidates may observe, assist, tutor, instruct and/or conduct research. Field experiences may occur in off campus settings such as schools, community centers, or homeless shelters” (NCATE, 2008, Glossary). NCATE describes student teaching within the definition of clinical practice as “student teaching or internships that provide candidates with an intensive and extensive culminating activity. Candidates are immersed in the learning community and are provided opportunities to develop and demonstrate competence in the professional roles for which they are preparing” (NCATE, 2008, Glossary). During student teaching, as in some, but not all more abbreviated field experiences, each teacher candidate is partnered with a more experienced educator who serves as cooperating teacher and in many cases also functions as an in-classroom mentor. In this context, teacher candidates progress to take on primary responsibility for the students and their learning independently which mirrors the roles they will be expected to take on as beginning teachers. Student teaching in particular has been
identified as a critical component of teacher preparation and thus cooperating teaching should be a key contributor to the preparation of all teacher candidates.

In student teaching, pre service teachers craft more extensive sequences of learning events for students and are more authentically immersed in the day to day work of teaching. While field experiences are clearly important for student teachers to develop a host of skills relating to teaching of diverse populations, they may not be under the guidance of an experienced teacher in school settings, nor provide the experience of participation in school environments similar to those in which they will be required to perform daily instructional functions as a licensed educator. Through some field experiences and certainly during clinical practice, teacher candidates learn under the guidance and mentoring of field-based teacher educators typically referred to as cooperating teachers.

**Section Three: Cooperating Teachers**

It has been widely accepted that the cooperating teacher’s role is “influential, important and essential to the teaching experience of student teachers” (Dunne & Bennett, 1997, p. 226; Glickman & Bey, 1990) and thus has a key impact on the professional lives of teachers. NCATE does not define “cooperating teacher” but rather describes these field-based teacher educators as clinical faculty referred to as “P-12 school personnel and professional education faculty responsible for instruction, supervision, and/or assessment of candidates during field experiences and clinical practice” (NCATE, 2008, Glossary). From this definition, it is clear that this accreditation body views p-12 teachers who take on the cooperating teacher role as teacher educators;
however it remains unclear whether cooperating teachers themselves take on the professional identity of teacher educators or are recognized by their student teachers as teacher educators.

Although cooperating teachers’ identity and recognition as teacher educators remains ambiguous, cooperating teachers’ impact on student teachers’ development has been documented over time. Price (1961) found that student teachers adopt not only the practices of their cooperating teachers, but their attitudes as well. McAulay (1960) found that first year teachers were much more likely to use the materials and techniques developed in student teaching than those developed in their methods courses. The cooperating teacher’s ability to assess student teacher’s strengths and weaknesses impacts student teachers’ professional practice since cooperating teachers select resources to foster student teachers’ improvement (Portner, 2003). Even when explicit provision of resources and demonstration of teaching practices does not occur, some impact is still made. “Often teachers say they learned to teach through trial and error in their classroom and that experience is the one, valid way to learn to teach” (Boudreau, 1999, p. 454). Cooperating teachers’ cultivation of preservice teachers’ classroom experience by allowing for experimentation strengthens student teachers’ ability to use diverse instructional methods. Some cooperating teachers, however make experimentation more purposeful through collaborative exploration of teaching and learning with their student teacher in which they exchange feedback and analysis of student outcomes (Hall & Davis, 1995). Spencer (2007) identifies a greater focus on teaching and learning in cooperating teacher/student teacher relationships that are built on trust, professionalism
and mutual concern. These characteristics of teacher interactions are also key to successful professional development, and effective cooperating teachers provide their student teachers with an early start at these practices. The roles cooperating teachers employ during teacher preparation include training student teachers in selection and use of instructional materials, providing for observation of other classes, providing feedback on teaching and enabling them to have practice in actual teaching. These roles have been identified as important to reducing attrition of first year teachers (NCTAF, 2003). These roles are critical because while America produces enough teachers to staff our schools, almost a third of all new teachers leave by their third year of teaching, and nearly half leave by year five (NCTAF, 2003). Effective cooperating teaching helps student teachers transition successfully into sustained professional teaching.

Effective cooperating teaching actions, however have yet to be clearly articulated by cooperating teachers themselves or the teacher educators and/or administrators who recruit and select them. Thus, exploration of the current state of the selection, compensation and current population characteristics of cooperating teachers is a relevant source of baseline data in understanding the work of cooperating teaching and the types of teachers who serve in this capacity.

Cooperating teachers are an understudied group. For example, the researcher was able to identify only one large-scale study which examined demographic characteristics of cooperating teachers in the United States. The section that follows explicates the professional contexts and conditions in which cooperating teachers are selected and
function in their work with student teachers through a review of relevant literature on cooperating teachers.

Demographic Data on Cooperating Teachers

The 1990 RATE IV study indicates that of the 228 cooperating teachers included, 75 percent are female, and 96 percent are white. The limited data available suggest that with regard to race and gender, cooperating teachers are a largely homogeneous group. However, cooperating teachers’ age, teaching experience and preparation for cooperating teaching are more varied. Half of the teachers held master’s degrees and ten percent held certificates of advanced study or doctorates. On average, cooperating teachers have 16 years of total teaching experience and have been in the same school for 12 years. Ages of cooperating teachers range from 25 to 64 with 43 as their average age. Sinclair, Dowson and Thistleton-Martin’s 2006 study of elementary teachers in Australia found that teachers more likely to have a student teacher had more supervisory experience than those who did not, were employed full time, and tended to teach lower grade levels. Cooperating teachers’ on average, have extensive experience in the school in which they currently work. This characteristic may contribute to the development of teaching practices by cooperating teachers that mirror the values and traditions of particular schools. These practices are likely to reflect cooperating teaching abilities built upon the professional learning opportunities embraced by specific schools. This may contribute to the differences in quality of the learning experiences afforded to student teachers given minimal qualifications for cooperating teaching.
Selection of Cooperating Teachers

Selection of cooperating teachers does not occur in a uniform way. According to RATE IV data, in most cases the program and school select cooperating teachers together, some principals select cooperating teachers, some volunteer and some are chosen by the student. Other sources identify the selection of cooperating teachers as primarily accomplished by building principals (Bowen, Adkison, & Dunlap, 1995; Vann, 1988). Clarke (2007) however explains that principals hesitate to distinguish among their teaching faculty to identify teachers who should serve as cooperating teachers from those who should not. Primary reasons for principals’ minimal input in the identification of quality cooperating teachers reside within the contractual and bureaucratic conditions of public school settings. In particular, principals fear transgressing collective bargaining agreements that define the relationships between employers and employees (Clarke, 2007). Almost half of the institutions surveyed through RATE IV reported no requirements for becoming a cooperating teacher. Twenty-five percent required cooperating teachers to attend a seminar and only 17 percent required a course in supervision. ATE Standards for selecting cooperating teachers have been described as minimal (Zimpher & Howey, 1992). In addition to the lack of explicit university identified criteria for cooperating teachers’ selection, minimal pay for their efforts and limited professional development offerings appear to devalue their work.

Compensation of Cooperating Teachers

RATE IV (1990) data indicate that while three fourths of the institutions pay cooperating teachers for their work with student teachers, compensation is minimal, on
average, $113 per student teacher – assuming that student teachers stay the minimum term of 44 days, this is an average of $2.56 per workday or 32 cents an hour per eight hour day. Other studies reported similar levels of pay for cooperating teachers (Korinek, 1989, Zimpher & Howey, 1992). While some institutions provide free tuition to cooperating teachers, school-based staff development is rarely offered as a form of compensation. Given a lack of clearly articulated criteria for selection and minimal pay an elaboration of cooperating teachers’ motivation to take on this work provides foundation for an understanding of cooperating teachers and their abilities and needs as field-based teacher educators.

Motivations to Serve as a Cooperating Teacher

While the pay is meager at best (Tannehill & Goc-Karp, 1992, ¶5), cooperating teachers still regularly work with student teachers. Financial incentives most valued by cooperating teachers have included the honoraria previously described and tuition/coursework waivers. Cooperating teachers also value adjunct faculty status and college teaching (Korinek, 1989). These preferences suggest that cooperating teachers are interested in both continuing their own learning and contributing to the professional learning of others. Additionally, cooperating teachers have been noted to appreciate recognition and classroom assistance (Korinek, 1989). While these incentives serve as external motivators for engagement in cooperating teaching, personal and professional motivators also impact teachers’ willingness to work with student teachers.

Cooperating teachers’ reasons for taking on student teachers are described to center most upon internal motivators such as their desires for the development of student
teachers, the teaching profession as a whole and their own development as a cooperating
teacher (Koskela & Ganser, 1995; RATE IV, 1990; Sinclair, Dowson, and Thistleton-
Martin, 2006). Cooperating teachers (though not carefully selected themselves) also want
to be sure “the right people get into teaching” (Koskela & Ganser, 1995, p. 18). Reasons
for not having a student teacher included availability (e.g. busyness, whether asked or
not, and teaching assignment), and negative past experiences with field placement
students (Sinclair et al., 2006).

**Cooperating Teacher Beliefs about Their Roles**

Cooperating teachers see their roles as transitional in the life of the student
teacher. They report helping them transition from the university to the classroom and
from theory to practice, and identify their role as directing the student teacher and
facilitating their growth (Koskela & Ganser, 1995). Cooperating teachers view their work
as important to the development of teacher candidates as professionals (RATE IV, 1990).
Cooperating teacher beliefs about their roles vary in ways that mirror the previously
described conceptualizations of teaching and learning. Some cooperating teachers believe
their roles to be predominately centered upon offering personal and professional self
development activities in a positive relationship (Boudreau, 1999). In Koskela and
Ganser’s 1995 study of cooperating teachers’ beliefs about their roles, 48 percent
identified themselves as guides to the student teachers with regard to planning and
management (behavioral), content and skill proficiency (content/learning) and
organization and in terms of constructing materials and experiences for students
(experiences). In the same study, 44 percent found their role to be that of facilitator in
which they exhibited nurturing roles focused on the self concept and confidence of their student teachers (socialization into the profession). Surprisingly, only 17 percent of the sampled teachers identified themselves as models for their student teachers (Koskela & Ganser, 1995). These findings point to disparate views of self as teacher educators, and perhaps even differing views of appropriate roles for teacher educators held by cooperating teachers. Additionally, in discussing their supervisory beliefs few use the terms “reflect” or “teach” (Koerner, 1992), (though these terms reside at the heart of standards for teacher educators and outcomes for teacher candidates) which may indicate that cooperating teachers do not consistently view themselves as teacher educators. The roles enacted by cooperating teachers may largely be shaped by beliefs about their fit within the context of teacher education.

**Roles Enacted by Cooperating Teachers**

Because cooperating teachers in traditional settings typically have minimal interaction with the university and its campus-based faculty, their interactions with student teachers are often framed by self-constructed definitions of their roles and responsibilities based on their own experiences as a student teacher and practicing teacher (Koerner, 1992) Although not explicitly stated in Koerner’s work, it is implied that most of the cooperating teachers studied had student taught.

Recently enacted cooperating teacher roles vary widely. Activities of the cooperating teacher have been described as setting the affective and intellectual tone (Feiman-Nemser & Buchman, 1987), connecting university coursework with field experiences, embodying what it *means* to be a teacher (Bowers, 1994, p. 104), and
socializing student teachers into the school context and assisting in the development of survival skills and tricks of the trade (Boudreau, 1999).

Examining actions of cooperating teachers, Housego and Grimmett (1983) identified two frameworks of supervision, one that was performance based and direct and another that is more inductive and developmental. Using a performance based and direct approach, the cooperating teacher takes on a more behaviorist stance in which he or she provides direction on what is to be done by the student teacher and when. Using the inductive developmental model, the cooperating teacher assumes a more constructivist role in which he or she focuses more attention on the quality of his or her relationship with the student teacher and the creation of a supportive working environment.

While the recent trend has been toward a more inductive and developmental approach to the supervision of learning as suggested by NBPTS core propositions and ATE Standards for Teacher Educators, cooperating teachers’ interactions with student teachers about teaching practices or student learning lie along a broad continuum of practices. Some cooperating teachers initiate minimal interaction and act as a role model, sounding board and resource (Tannehill, 1989) or lead by example without discussion of rationales (Graham, 2006). Others guide student teachers’ participation (Colton & Sparks-Langer, 1992). Still other cooperating teachers incorporate into their relationship with their student teacher ongoing inquiry into teaching practices (Wood, 1991) and systematic reflection on alternate strategies (Dunn & Taylor, 1993). Although a variety of practices are enacted by cooperating teachers, increased mentoring activity such as helping student teachers reflect on their teaching has been recommended (Field, 1994).
Zeichner identifies teaching diverse students in changing times as more than an issue of teacher actions, suggesting that analysis and reflection are key components of promoting teacher learning. He asserts teacher education programs should “reflect the complexity of influencing teachers’ beliefs and understandings that underlie their practices and of developing teachers reflective dispositions and capabilities” (2005, p. 119). This could be accomplished through the interactional work of cooperating teachers. Identifying strategies and interactions that most effectively promote student teacher development has been identified as a challenge by cooperating teachers and has uncovered professional development and relational needs that when unmet become barriers to effective cooperating teaching.

**Challenges to Effective Cooperating Teaching**

Three main themes in the literature emerged as barriers to effective cooperating teaching: inappropriate preparation for the cooperating teacher role, limitations to quantity and quality of interactions with university-based faculty which reflect shared beliefs about teacher education, and contextual challenges related to professional collaboration and professional learning opportunities for cooperating teachers.

Issues relating to the preparation for work as a cooperating teacher have presented challenges. Reynard (1963) cites Hayes, who as early as 1960, found differences in the preparation of cooperating teachers for their roles with pre service candidates. Of the ten teacher education institutions surveyed, six reported offerings of some type of course for the preparation of supervising teachers, but he found that most common methods of actually orienting supervising teachers was through conferences and literature. He
reported no organized methods to have supervising teachers become familiar with the preservice program and articulated that once teachers began actual supervision, opportunities to enhance their skills and abilities through the university were rarely available. The literature has continued to reveal inadequate cooperating teacher preparation. Clarke identifies those cooperating teachers who have no professional development as least likely to fail poor teacher candidates, while those with more professional development for the role are “able to discriminate between strong or poor student teachers” (2001, p. 247). This challenge has a negative impact on the profession as a whole. He asserts “a number of student teachers have gained entry to the profession who might not have done so under the guidance of more professionally prepared co-operating teachers” (Clarke, 2001, p. 247). Cooperating teachers have expressed that such challenges have led to uncertainty about the nature of their work. Professional learning experiences which prompt cooperating teachers to critically examine teaching and learning in their own school context and to be able to reflect upon learning experiences to articulate student-centered recommendations for future teaching practice, are likely to enhance cooperating teachers’ preparation for their work as field-based teacher educators. One avenue for identifying, refining, and advancing these skills may be through the National Board Certification process described in section four or similar professional learning opportunities.

Limitations to the quality and quantity of interaction between cooperating teachers and university-based teacher educators have also been identified as challenges. Spencer (2007) suggests the “most common challenges to cooperating teachers result
from poor communication” (p. 213). However, standards seek to develop a common language surrounding issues within a profession. Thus effective implementation of standards as a foundation for professional expectations may improve communication between field-based and campus-based teacher educators and provides a source of unifying discourse to field experience personnel. Koskela and Ganser (1995) reported cooperating teachers’ uncertainty about the background experiences and courses of student teachers, university-based expectations for cooperating teachers, and expectations surrounding interactions with university-based field supervisors. Identification and implementation of the intersection of multiple standards is key to clarifying and promoting effective dialogue between field-based and campus-based teacher educators and enhances their ability to work toward shared goals. Among the 60 percent of teachers expressing uncertainty, areas of concern specifically relating to student teachers included evaluation, feedback, integration into the classroom, providing direction, approaches to differences in philosophy and teaching style (Koskela & Ganser, 1995, p. 21). A well coordinated standards based focus that unites candidate performance outcomes for field experiences in teacher education, the National Board core propositions and ATE Standards for Teacher Educators may address the concerns raised by cooperating teachers. The performance outcomes provide a framework for understanding what teacher candidates should know and be able to do, core propositions and the certification process focus on the delivery of feedback tailored to learners’ needs. Teacher Educator Standards suggest both collaboration and the development of visions for teacher education which may assist field-based teacher educators in navigating the
complexities of differences in teaching style and philosophy as they promote effective candidate learning. The National Board Certification process provides teachers with practice at evaluation and feedback on classroom events, and documented experience at using methods of their selection to reach goals by means of standards based approaches. When teachers collaborate during Board Candidacy they are exposed to varied means of reaching similar goals which may assist them in navigating different in teaching style and philosophy while maintaining a focus on important goals shared in the student teaching context.

Cooperating teachers also faced challenges in terms of dealing honestly with problematic situations such as limited student teacher progress (Hastings, 2004; Koskela & Ganser, 1995). Limited communication also feeds power differentials that restrict open discourse about teaching and learning. Power relationships based on hierarchal structures and time spent with the student teacher also led to conflicts between cooperating teachers and university supervisors with regard to assessment of student teacher progress (Hall & Davis 1995; Hastings, 2004; Zimpher & Sherill, 1996). A shared vision and unified language for teacher education are likely to advance the ability of cooperating teachers and field supervisors to engage as partners in teacher education. Work toward and with the guidance of unified expectations of cooperating teachers and university supervisors may help to break down such hierarchal barriers to effective cooperating teaching as those described by Hastings (2004) and others.

Factors relating to the context and norms of schools in which cooperating teachers work have also been identified as barriers to effective cooperating teaching. Lack of time
to engage in collaborative conferencing and planning with student teachers, university supervisors and colleagues has been identified as a barrier to an effective practicum (Hastings, 2004). Additionally, Zeichner identified a need for field-based teacher educators to be knowledgeable of the literature in teacher education and for cooperating teachers to see their practice as teacher educators “in new ways that challenge one’s existing frameworks” to unite what has been learned in other programs about particular aspects of teacher education (Zeichner, 2005, p. 122). Zeichner’s elaboration calls for learning to be a teacher educator by means of “immersion into the practice of teacher education” through activities such as teaching a course or seminar, supervising practicum students or student teachers and “working on these practices to improve them through some form of self-study research” (2005, p. 121-122). His analysis suggests that cooperating teachers can and should engage more deeply in teacher educator roles which bridge the expectations of campus-based and field-based work and urges analysis and reflection upon cooperating teachers’ own work with pre service teachers. Typically, these are not focal elements of the work of most p-12 teachers.

Standardized testing has also presented challenges and pressures for cooperating teachers (Koerner, 1992). Zeichner identifies as among the “need to address learner centered teaching practices advocated by the university in light of standardized testing and narrow views of accountability” (p.118) as among challenges to be addressed by cooperating teachers. Zeichner (2005) underscores identifies the importance of cooperating teachers’ ability to teach student teachers to “exercise judgment in light of external pressures” and to “scaffold their learning toward more expert teaching”. In order
to facilitate the attainment of challenging goals for student teacher learning through practice, cooperating teachers are called upon to model the thinking processes and reasoning that underlie the instructional choices they model. Often, this requires extensive critical analysis and reflection upon their own instructional decision-making.

**Cooperating Teachers and Professional Learning**

Engagement in cooperating teaching has been identified to provide opportunities for professional learning for teachers, knowledge, skills and dispositions that not all teachers have at the outset of the experience are necessary for successful cooperating teaching. Thus professional learning for cooperating teachers is essential to prepare teachers for the experience of cooperating teaching rather than sole reliance on learning being acquired through cooperating teaching.

Limitations to professional learning in preparation for cooperating teaching area also rooted in a lack of university-based foundations for teacher educator roles. Professional development provided by Universities in preparation for teachers to assume cooperating teacher roles are often limited to the provision of a cooperating teacher handbook and in some cases extension of an offer to attend an introductory meeting (RATE IV, 1990; Spencer, 2007). These meetings typically focus on expectations of the student teacher and management of administrative tasks such as the completion and timely return of evaluation materials. Cooperating teachers’ classroom work with student teachers is not typically cultivated or assessed. Some clinical practice settings provide professional development opportunities for cooperating teachers which include supervisory training and provide for more extensive understandings of university
expectations (Darling-Hammond, 2006; Spencer, 2007). Some cooperating teachers in more collaborative school-university partnerships gain an in-depth understanding of program goals by working jointly with campus-based faculty to design seminars for student teachers to address issues that arise as dilemmas within the field experience context (Darling-Hammond, 2006). These experiences are typically limited, however to professional development school contexts.

Since formal preparation for cooperating teachers in traditional settings is often limited, these cooperating teachers are often called upon to rely on knowledge and expertise that emerge from their own teaching/student teaching experiences and from professional development learning through activities that were not designed for student teaching contexts. Professional learning offerings that prepare teachers for cooperating teaching, however, are limited. Fullan, Hill & Crevola (2006) contrast professional development and professional learning in the their 2006 work, Breakthrough, to identify professional learning as characterized by ongoing individual and collective learning on the part of each teacher. Often professional development experiences for educators are intended for application to p-12 teaching contexts rather than to cooperating teaching.

Professional development experiences for practicing educators may reside at the heart of informal preparation mechanisms for cooperating teaching. However, the professional development experiences in which practicing teachers engage to earn license renewal vary widely. In Ohio, for example, most teachers must engage in professional development activities for licensure renewal (those teaching under permanent certificates face no renewal requirements). However, little is specified by state licensing bodies
regarding the intensiveness of the activities; rather, the number of hours spent in the
process guides licensure renewal. Activities that may be applied to the accumulation of
professional development hours for licensure renewal are approved by school, district, or
area based bodies of educators termed Local Professional Development Committees.
These entities approve hours accumulated through activities including completion of
graduate coursework, workshop and/or professional meeting attendance, independent or
collaborative research and engagement in advanced certification through the National
Board for Professional Teaching Standards. Teachers in some districts are also able to
apply credits from such activities as coaching and other non-learning focused activities to
licensure renewal.

Traditional professional development such as workshops and coursework, have
been identified as fragmented, disconnected from the classroom and often focused on
district rather than classroom goals. Alternate forms of professional development which
promote professional learning such as cooperating teaching (and preparation for
cooperating teaching) engage teachers over time in questions and problems rooted in
student learning, content and instruction (Spencer, 2007). Teaching about teaching by
describing and analyzing decision-making and modeling quality practices has been
shown to promote organization and analysis skills which are desirable traits in all
teachers, preservice or practicing, and helps teachers identify and meet student needs
(Landt, 2004).

Compounding the complexity of the diverse types of professional development
engaged in by practicing teachers is the extent to which professional learning occurs and
is applied to their classroom teaching or professional mentoring activities. There is no mandate of application or enactment of professional learning required for credential renewal in Ohio (C. Workman, personal communication, June 2008). Among the varied activities from which cooperating teachers may select professional development experiences, it can be argued that quality and likelihood of application or enactment of resultant professional learning varies widely as well.

The professional development literature has identified collaboration, an inquiry orientation (Cochran-Smith, 2004b; Dana & Yendol-Silva, 2003) and direct application to the nature of a teacher’s work (Clarke & Hollingsworth, 2002) as essential components of professional development that yield teacher learning that is put into practice in ways that yield student achievement gains (AERA, 2005). While many forms of professional development for practicing teachers are aimed at improving the teaching effectiveness with p-12 students as measured by standardized testing and classroom performance outcomes, some, such as the National Board Certification process, bear the hallmarks of quality professional development offerings and have been noted to improve teachers’ understanding of student learning needs and the development of teachers’ ability to enact and articulate changes in instruction. Additionally, the National Board Certification process focuses on communicating and collaborating with adults to prompt positive changes for students. As such, this form of professional development may enhance not only p-12 teachers’ abilities to effect student learning gains, but may also increase their capacities as teacher educators. Many of the practices teachers are called upon to evidence and analyze during the certification process mirror expectations of
accomplished teacher educators. In the section that follows the National Board Certification process is introduced, described, and examined in terms of teacher engagement, professional learning, and outcomes with which National Board Certification has been associated.

Section Four: National Board Certification

Many of the challenges to cooperating teaching such as breakdowns in communication, and issues relating to feedback and differentiation to meet learners’ needs are addressed in p-12 teaching contexts through National Board Certification. As a result it appears that when enacted in student teaching contexts, skills and abilities associated with National Board Certified Teachers hold promise to yield gains in student teacher learning.

Goals of the National Board for Professional Teaching Standards

The National Board for Professional Teaching Standards was founded in 1987 to advance the quality of teaching and learning and promote educational reform (Goldhaber & Anthony, 2004, p. 3; NBPTS, 2008, Mission). The stated mission of the National Board for Professional Teaching Standards is “to advance the quality of teaching and learning by establishing standards for what accomplished teachers should know and be able to do, providing a national voluntary system certifying teachers who meet these standards and advocating related education reforms to integrate National Board Certification in American education to capitalize on the expertise of National Board Certified Teachers” (NBPTS, 2008, Mission; NBPTS, n.d). The goals of the National Board situate the certification of accomplished teachers into the larger context of school
reform (NBPTS, 2008, Mission) through emphasis on the role of the teacher in the larger school community in addition to their classroom actions (Frank, et al., 2008). *A Nation Prepared* (1986) called upon teachers to “provide active leadership in the redesign of the schools and in helping their colleagues to uphold high standards of teaching and learning” (Carnegie Forum on Education and the Economy, 1986, p. 55). The core propositions of the Board which guide the construction of Standards reflect this focus through the assertion that “teachers are members of learning communities” which is explained to include contributing to the effectiveness of the school through collaborative work with others on school matters such as mentoring novices, developing instructional policy and curriculum and staff development initiatives (NBPTS, n.d.). It was hoped, and is increasingly realized, that Board Certified teachers take on teacher leadership roles to change school cultures and practices in ways that advance positive impacts on students (Goldhaber, Perry & Anthony, 2003). Central to the work of school reform is the cultivation of a well prepared teaching force for future generations of students. National Board Certification may be instrumental to this process as a result of the knowledge, skills and collaborative abilities of National Board Certified Teachers.

**National Board Certification Overview**

The National Board Certification process requires successful candidates to document demonstrated teaching quality regarding “their knowledge of content and pedagogy, use of high quality instructional practices, assessment skills, reflection on their practice, and involvement in professional activities” (Stronge et al, 2007 p. 186). The NBC process, described as more rigorous than state licensure testing distinguishes among
the quality of licensed teachers as indicated by pass rates of about 50 percent among first
time applicants between 1999 and 2002 as contrasted with a national average of nearly 90
percent of teachers passing licensure exams as first time test-takers (Goldhaber &
Anthony, 2004).

Description of the National Board Certification (NBC) Process

The National Board for Professional Teaching Standards (NBPTS) requires
teachers to hold a bachelor’s degree, have completed three full years of teaching
experience, and possess a valid teaching license for the three year period before applying
to be a candidate. Teachers from all routes to the profession may apply as long as they
meet the three criteria (NBPTS, 2008, Eligibility & Policies). Most cooperating teachers
meet these criteria and thus would qualify to become National Board candidates. The
typical six to eighteen month commitment to National Board Candidacy consists of two
key elements – the production of a four entry performance-based portfolio and successful
completion of a set of six assessment center exercises. Portfolio materials are due in
March for first time candidates (April for retake candidates) and assessment center
exercises are typically offered until mid June.

Required portfolio work includes documentation of candidates’ classroom
practices through two videotaped sequences of teaching and one set of comparative
assignments, student work, and feedback representative of teaching practices tailored to
different student learning needs. Each of these entries is supplemented by narrative
responses that describe the teaching context, actions and student learning needs, and
provide analysis of why the teaching practices shown were selected for the group and
particular representative students. In each written commentary, teachers are also called upon to reflect upon outcomes and changes for future use. In the final portfolio component candidates document interactions with the community and other professionals and analyze and reflect upon how their work impacted student learning (NBPTS, 2008, Portfolio). In each portfolio entry candidates engage in descriptive, analytical and reflective writing about their teaching practice and/or professional interactions.

Assessment center exercises, the second component of the process, are a series of six timed “essay questions assessing their content and pedagogical knowledge relevant to the certificate area” (Goldhaber, Perry & Anthony, 2003, p. 4). In six thirty minute sessions, at one over 200 computer-based testing centers across the United States (NBPTS, 2008, Assessment Center) candidates respond to content questions, identify likely student misconceptions, and craft sequences of activities to address them.

Applicants’ portfolio-based evidence, weighted somewhat more heavily, is combined with assessment center scores for cumulative score between 75 and 425 with a score of 275 required to achieve certification (NBPTS, 2008, Scoring). Quality control for scoring includes only partial portfolio scoring by each assessor and independent scoring of a portion of entries by two assessors to verify reliability. Candidate work is evaluated “by at least 12 classroom teachers who must meet the same eligibility requirements as a candidate” (NBPTS, 2008, Scoring) by the time scoring is complete.

Collaboration and Motivation in National Board Certification Candidates

Collaboration has been identified as critical component of the certification process. Collaboration as a component of the certification process occurs in two key
ways: collaboration *evidenced* for certification as part of entry four, and collaboration as *a component of the certification process* as experienced by successful candidates. With regard to collaboration as a component of the certification process, candidates are called upon to demonstrate ongoing engagement in collaboration and self study. These teachers engage teachers in an extended period of self study during their portfolio development in which they are called upon to integrate their understanding of their interactions with others and their support of student learning. This focus can be directed toward work with student teachers as well. However, for many, the presence or absence of collaboration during the certification process serves as a motivator prompting engagement in and value for future collaborative initiatives related to education.

While successful candidates must document and explain their interactions with others to support student learning as part of their portfolio work, candidates do not consistently have access or willingness to engage in collaborative structures to support their certification process. Some teachers experience the National Board Certification process to be a highly collaborative process that brings them together with colleagues, educators outside of their own schools, and others as they work to describe, analyze and reflect upon their teaching and how it impacts their students’ learning. Others however experience what they describe as “a lonely process that was not supported by their school district and not understood by their peers” (Hoag, Danielson, Black, Reed & Ring, 2004, p. 8). Burroughs (2001), as an Ohio NBC facilitator contrasts the experiences of “Beth” and “Joy” to elaborate the impact of collaboration on the certification process. Beth, who engaged in extensive collaboration with others surrounding her classroom practices and
National Board Certification work was successful in earning certification, while Joy, who approached this learning experience alone and declined collaboration opportunities came to reject the process and did not earn certification (Burroughs, 2001). Beth and Joy’s examples corroborate others’ identification of the NBC process as requiring emotional support which candidates describe as central to their ability to complete the process (Hoag et al., 2004).

Those without collaborative support do not always abandon the process; some develop enhanced collaborating centered on teaching and learning which is often displayed as commitment to candidate support. Hoag et al., (2004) report that support for the process is not always widespread given indications that “not all administrators or state education departments were supportive of National Board Certification” (Hoag et al., 2004, p.7). A teacher’s response, “I did National Board alone, which made me promise myself to support others” (Hoag et al., p.7) signals some candidates’ increased commitment. Through the certification process, it is likely that teachers come to a heightened understanding of the importance of support and collegiality as these practices relate to the examination of teaching practices. As a result, these teachers may be more likely to extend professional supports centered upon the examination of teaching and learning when engaged in work with student teachers and campus-based university faculty which would confront a key challenge to effective cooperating teaching.
Challenges/Professional Learning Experiences Related to National Board Certification

In addition to issues of support of teacher learning through collaboration, Burroughs (2001) suggests that National Board Certification is as much an assessment of a teacher’s ability to write about his or her teaching as it is an assessment of the teacher’s actual teaching. While this finding proves problematic for some candidates’ ability to achieve certification, it provides a valuable professional learning experience in articulating teaching practices and rationales in writing which may enhance not only the successful candidate’s teaching practice, but also their mentoring and cooperating teaching work in which they are called upon to provide evidence based feedback to novices. The three types of writing required by the certification process - descriptive writing, analytic writing, and reflective writing (NBPTS, 2008, The Portfolio) are also used in providing feedback for teacher learning and mirror the components of self study advocated by Zeichner (2005) when applied to cooperating teaching contexts.

Challenges, and accordingly and areas of growth, for candidates also include writing apprehension, ability to represent tacit knowledge, ability to negotiate the standards, and acceptance of both sampling logic, and the role of evidence (Burroughs, 2001). It is suggested that writing about teaching events is an “unarticulated standard” of the Board (Burroughs, 2001, p. 231). In an era of pre-and post conferencing and limited practitioner publication, writing as a sole source of communication can be difficult for teachers because “language use surrounding teaching depends so much on oral rather than written language” (Burroughs, 2001, p. 226). Representing tacit knowledge is also a
challenge to many teachers pursuing certification because typically they have been
teaching long enough for the complexities of their work to become second nature to
them. While seasoned teachers may understand the complexities of teaching in ways that
are challenging to express, making teaching events and rationales explicit to student
teachers serves to enrich the learning opportunities pre service teachers gain from their
culminating field experience. In this way, these skills are valuable for effective
cooperating teaching. Zeichner (2005) urged that teacher educators exercise the ability to
teach novices to “exercise judgment on light of external pressures” and asserted that
“teacher educators need to know how to scaffold the learning of novice teachers toward
more expert teaching” (p. 118). Engagement in National Board portfolio development
may also hold promise with regard to this aspect of professional learning in support of
cooerating teacher roles. National Board Candidates are called upon to explain units of
instruction, decide between instructional choices and provide rationales for their
instructional decision-making and articulate how their teaching choices impacted
individuals and groups of learners. The practice that these teachers obtain with
articulating these choices in clear, consistent and convincing ways may serve as an
advantage in learning to communicate with student teachers regarding issues of
instructional decision-making. Cooperating teaching can benefit both the student teacher
and the cooperating teacher through the power of professional learning. Both the
cooperating teacher and student teacher learn during the student teaching experience.
However, the extent to which professional learning experiences prepare cooperating
teachers for service with a student teacher has been less explored through the literature.
Negotiating the standards placed some teachers seeking certification in a position of feeling as though they were jumping through hoops (Burroughs, 2001). Teachers who did not identify each standard as equally important to the part of their instruction featured in the work sample or video were described as feeling as though it was contrived to explicitly discuss those standards in their written commentary. However, while individual standards viewed in isolation may appear to lack relevance to individual instructional events, the ability to articulate interconnections between standards and teaching events over time is critical to the ability of a cooperating teacher to demonstrate and convey the cohesive nature of units of instruction to their student teachers. The issue of negotiating the standards is particularly connected to the issue of accepting sampling logic also discussed by Burroughs (2001).

National Board calls upon its candidates to select segments that are chosen on the basis of their representativeness. One quote aptly describes the situation, “Sally doubts that she can capture all the complexity of teaching – rationale, knowledge of children, knowledge of subject – in a short tape that is meant to be representative” (Burroughs, 2001, p. 227). Burroughs identifies such issues related to sampling as challenging to teachers because time constraints place pressure on teachers to capture the complexity of teaching situations in short segments. Effective cooperating teachers, however, are able to identify and explain connections between short visible teaching episodes to the larger context of student learning including prior and future lessons. Lastly, accepting the role of evidence also poses a challenge and potential learning opportunity because candidates are expected not to just present evidence, but rather to explain it and to identify why it is
important for meeting student learning needs through standards-based approaches.
Again, a strong connection is made to Zeichner’s (2005) call for cooperating teachers “need to address learner centered practiced advocated by the university in light of standardized testing and narrow views of accountability” (p. 118). The skill of utilizing evidence to explain and evaluate teaching events is critical for cooperating teachers, because they are increasingly called upon to introduce student teachers to teaching in data-driven, standards-based contexts of shaped by educational policies which focus on meeting the needs of individual students and groups with specific learning needs.

Taken together, challenges presented in Burroughs work and imperatives advanced by Zeichner (2005) represent more than simply barriers to teachers’ ability to achieve National Board Certification but also represent the a set of highly promising abilities of successful Board Certification candidates. For teachers who do not initially achieve Certification, or have not decided to pursue the process, identification of these challenges illuminates ways in which teachers can use the candidacy process as a learning experience and portfolio requirements as tools to assist them in gaining skills that not only help them improve teaching of p-12 students, but also student teachers in their work as cooperating teachers.

**National Board Certified Teachers’ Impact on P-12 Student Achievement**

It has been assumed that National Board Certification leads to increases in teacher performance and student achievement, as suggested by the significant funding extended by states and districts to support the process. However, empirical examination of the
impact of NBCTs and the certification process has been sought as a means of evaluating these expenditures.

Two groups of studies related to NBC have emerged. One group, studies of student learning, seeks to identify the impact NBCTs on student learning as compared to their non-board certified peers, and to establish the source of student learning gains as either teacher learning fueled by the NBC process or, alternatively, the identification of more effective teachers. A second, more commonly explored research avenue centers upon the exploration of teacher learning, particularly with regard to how their learning (or lack thereof) impacts their teaching behaviors. I first describe research on student learning, because promoting student learning drives the need for teacher learning. I then present a more extensive discussion of teacher learning grounded in NBCs emphasis on teachers as leaders in which I explore influences on teacher development and change.

At this point, studies suggest that National Board Certified Teachers are realizing improved gains for learners, but research has yet to conclusively identify specific student groups who gain the most from these teachers, or how NBCTs acquire increased effectiveness. An early study assessing student achievement, examined a sample of 65 teachers (primarily from North Carolina and Ohio) and their students’ work through written assignments (Bond, Smith, Baker & Hattie, 2000). Among the authors’ conclusions was the assertion that NBPTS assessments identify teachers who produce students who “appear to exhibit an understanding of concepts targeted in instruction that is more integrated, more coherent, and at a higher level of abstraction than understanding achieved by other students” (Bond et al., p. 113). However, since covariates relating to
the initial ability of the students could not be obtained, doubt remained relating to the value added results for subgroups of students on the basis of the teaching assessed. Additionally, though the studies by Bond and colleagues examined in depth the characteristics of effective teaching practice and student outcomes, its objectivity has been questioned because the lead authors worked with the National Board over the course of many years and the study was partly funded by NBPTS (Vandevoort, Amrein-Beardsley & Berliner, 2004, p. 10).

While Bond and colleagues examined depth of learning and writing abilities, both identified as important learning outcomes by A Nation at Risk (1983), a recent trend in NBC research has been a shift toward more large-scale studies using standardized state test scores as outcome measures. While only a handful of large-scale studies connecting student achievement and National Board Certification have been conducted, three key large-scale studies conducted independently of NBPTS have identified National Board Certification as related to positive changes in student achievement on statewide tests in urban Florida high schools (Cavalluzzo, 2004), North Carolina elementary schools (Goldhaber & Anthony, 2004) and elementary settings in Arizona (Vandevoort et al. 2004). Improvement upon Bond and colleagues’ study includes disaggregation of data by both teacher and student characteristics. Taken together, the three studies suggest variations by subject and grade level, but each provide statistically significant findings about specific subject areas, grade levels, and student groups with which NBCTs realize greater academic gains those of their non-Board Certified colleagues.
Results of studies examining whether the National Board process is the reason for increased student achievement signal a need for further investigation. Research by Cavalluzzo (2004), prevents ruling out the possibility that the NBC process assists teachers in improving student achievement in math based on her finding of a positive significant relationship between pending NBC applicants that was one fifth of the size of the coefficient for NBCTs while simultaneously finding negative coefficients for non-NBCTs’ student achievement (Cavalluzzo, 2004, p. 25). However, other studies suggest that the board is better at identifying more effective teachers than making teachers more effective at realizing student achievement gains (Goldhaber & Anthony, 2004; Vandevoort et al., 2004). Although Goldhaber and Anthony (2004) were unable to support the hypothesis that the assessment process makes a teacher more effective, they recognized limitations of their sample noting “given the relatively small number of Past NBCTs in our dataset, we want to be careful about drawing strong conclusions based on this model specification” (Goldhaber & Anthony, 2004, p. 18). Vandevoort and colleagues (2004) corroborated the findings of Goldhaber and Anthony, stating “The evidence that NBCTs have some exemplary characteristics is strong, although it is likely they may have been that way before they took the Boards” (Vandevoort et al., 2004. p. 9). Further elaboration extends the findings of Goldhaber and colleagues by drawing connections to teaching behaviors and practices “Nevertheless, the Board process—the preparation for taking the Board exams—appears to have independently made contributions to their practice” (Vandevoort et al., 2004. p. 9).
In contrast to the studies described thus far, one, funded in part by NBPTS, found “evidence that NBPTS certification provides a positive signal of a teacher’s contribution to student achievement in only a few isolated cases” (Harris & Sass, 2007, p.1). The same study, however, identified evidence that NBCTs who explicitly agree to mentor other teachers improve the effectiveness of their colleagues as measured by one of Florida’s achievement tests. This study, however, utilizes both low-and high stakes testing and controls for “unobserved differences in students and schools” (Harris, & Sass, 2007, p. 25) in ways that others did not.

In terms of promoting more effective cooperating teaching, National Board Certification holds promise whether the teachers that achieve Board Certification learned from the process or began as more effective teachers. Data indicate that Board Certified teachers promote more effective student learning and extend student learning in directions unmatched by other teachers. Board Certified teachers have also demonstrated the ability to model for others effective teaching practices, describe these practices, analyze their impacts on student learning and reflect on what they did and how they might improve upon their work. Each of these skills and abilities are likely to be valuable contributors to more effective contributions to pre service teacher learning when enacted in cooperating teaching roles.

A second research approach is focused on teaching behaviors and teacher learning. Studies that explore teacher learning in connection with National Board Certification do so from a variety of perspectives and employ diverse research methods.
Teaching Behaviors of National Board Certified Teachers

In contrast to student achievement studies, many investigations that focus on National Board Certified Teachers’ teaching behaviors are conducted as small-scale studies of limited numbers of teachers (Gunter, Reffel, Rice, Peterson & Venn, 2005; Pool, Ellett, Schiavone & Carey-Lewis, 2001). This method of examining teacher behaviors provides thorough descriptions of what goes on in the classrooms of teachers included in the sample. Although less generalizable, these methods provide important insights about National Board Certified Teachers’ daily interactions with students which may have important implications related to how they teach pre service teacher candidates for whom they serve as cooperating teachers. This research, however has also placed much greater focus on what teachers do in the classroom than their reasons for instructional choices. Case study research describes three NBCTs’ processes for addressing the needs of students with disabilities at the preschool, elementary and middle school levels through a wide range of differentiation and modification strategies employed by the teachers to help their students participate and learn in school contexts in which they had previously experienced limited success (Gunter et al., 2005). The authors assert “Obviously, having demonstrated such competence in modifying materials and instruction, NBCTs should provide exemplary models for other teachers” (p. 48).

However, teachers’ motivations for teaching in the ways they did were not explicitly examined. This study sought to identify modifications used by the teachers and appeared to begin from the perspective that National Board Certified teachers regularly demonstrate superior teaching qualities.
Also using a case study approach, Pool et al., (2001) conducted classroom observations, teacher interviews and interviews with administrators and colleagues to examine the teaching practices of six (two elementary, two middle and two high school) NBCTs. Gathering data from a greater variety of sources allowed these researchers to triangulate the perspectives of a wider pool of education stakeholders to present profiles of the teachers included in the study. Contrasting teaching quality was observed in the settings examined, resulting in findings that identified two of the teachers as “exemplary,” two as “rather average” and two as “rather ineffective” despite consistently positive interview reports (Pool, et al., 2001, p. 31). The teacher interviews, however revealed differences in motivations for attempting Board Certification that may explain differences in post-certification performance. In their discussion of findings Pool et al. state “those who valued the core of the NBPTS certification philosophy and process maintained higher quality teaching and learning environments in their classrooms than those who did not articulate these values” additionally, “those teachers who cited monetary gain as the primary reason for seeking NBPTS certification also demonstrated difficulties with content structure, classroom management, articulation of higher order thinking questions and other elements of effective teaching” (Pool, et al., 2001, p. 44). Recommendations presented by Pool and colleagues, appear to question the merit of NBPTS certified teachers on the basis of observed teachers’ enacted classroom behaviors without consideration of the motivational factors that distinguish between them. While the “rather ineffective” teachers did not employ high quality instructional practices during the single lessons observed, they were able to demonstrate quality teaching in
videotaped lessons and work samples leading to Board Certification. Further study may reveal that intrinsic sources of motivation associated with cooperating teaching, such as commitments to individuals or the teaching profession, prompt “exemplary” teachers to continue using the practices they demonstrated for the Board. These motivators may be absent or reduced in the cases of average or ineffective teachers.

With more teachers, and more data sources, Bond and colleagues compared the teaching behaviors of 31 NBCTs and 34 non-Board certified peers on 13 research based dimensions describing attributes of excellent teachers through examination of instructional objectives, lesson plans, observational visits and teacher and student interviews finding that NBCTs obtained higher mean scores (Bond et al., 2000). On 11 of the 13 comparisons differences were highly statistically significant (Bond, et al., p.ix). Conclusions included that NBCTs employ pedagogical content knowledge more flexibly and innovatively, were more able to respond to class contexts through improvisation, more deeply understood reasons for student success and failure on any given task and understood students in ways enabled the development of tasks to engage challenge and intrigue learners without being boring or overwhelming. They were also better able to anticipate and plan for student difficulties, improvise in response to challenges more smoothly, hypothesize about causes of success and failure and were noted to have brought distinct passion to their work (Bond et al, 2000, p. ix). Although student monitoring/feedback and appreciating the multidimensional complexity of classrooms yielded higher averages than non-NBCTs, these elements did not prove statistically significant. When applied to contexts such as student teaching in which the “students” are
pre service teachers, the skills demonstrated by the cooperating teachers in Bond and colleagues’ study may also contribute to and promote deeper and more effective student learning.

**Teacher Learning in National Board Certified Teachers**

A much larger study, conducted by Lustick & Sykes (2006) examined the National Board Candidacy experiences of 120 Adolescent and Young Adult Science teachers using a mixed methods approach over a period of two years to connect teaching behaviors to teacher learning. Teachers’ learning was assessed using National Board Scoring Rubrics as compared to the district evaluation materials used by Pool et al. In contrast to the findings of Goldhaber et al (2004) and Vandevoort et al (2004), significant impacts of the Board Certification process were identified. Teacher practices reflecting their understanding of science teaching were improved, particularly in the areas of Scientific Inquiry and Assessment of Student Learning. Interviews of each teacher revealed three types of enacted teacher learning: dynamic learning, technical learning, and deferred learning. These learning types may help to explain the findings of Pool et al. (2001) with regard to post certification demonstrations of teaching quality. Dynamic learning is described as internalized and learning in which the teacher “acts upon that new knowledge, skill or understanding to consciously and deliberately try to improve the learning experience in his class” (Lustick & Sykes, 2006, p. 26). While most teachers exhibited dynamic learning, this study was unable to determine whether the Board Certification process initiated new learning in all successful candidates, but rather, suggested that the process fostered dynamic learners’ enactment of the core propositions...
in teaching contexts. Some dynamic learners who acquired new skills through the certification process found that they “can’t help but continue with the same approach that was conveyed through repetition and focus through the portfolio prompts” (Lustick & Sykes, 2006, p. 26). Other dynamic learners said “skills became ‘more easy’ which implies that they were present before certification, which provided an opportunity to develop them further” (Lustick & Sykes, 2006, p. 26). Technical learning emphasizes “acquiring techniques useful in obtaining certification, but does not necessarily carry over to teaching itself” (Lustick & Sykes, 2006, p. 26) may provide an alternative clarification of how “ineffective” teachers studied by Pool et al. (2001) achieved certification. Technical learners decouple the NBC process from actual teaching behaviors, which enables teachers become better candidates, but not necessarily better teachers. Only about a quarter of the candidates studied were classified as technical learners. Perhaps, when called upon to model effective teaching for others technical learners would revisit and enact the strategies used during their candidacy, as they modeled teaching for Board assessors. It is possible, though unexplored in Lustick & Sykes (2006) study, that technical learners associate the skills they demonstrated in their efforts to achieve certification with “modeling and demonstrating” rather than with “ongoing teaching practices”. Deferred learning which “holds out the possibility for genuine influences on practice at some future time” (Lustick & Sykes, 2006, p. 28) may connect to the findings of both Burroughs (2001) and Pool et al. (2001). Once the stress of completing candidacy requirements is removed, a teacher may reflect on the learning and changes made to decide which portions, and in what ways to incorporate new learning into ongoing
interactions with students. A deferred learner needs distance from the “intense experience of certification and time to examine her practice to recognize differences in values, decision-making, and beliefs that may have arisen in response to the certification process” (Lustick & Sykes, 2006, p. 28). Thus, learning type and motivational factors (including cooperating teaching) may jointly shape National Board Certified Teachers’ enacted teaching behaviors following certification.

**Personal, Professional, and Community Benefits of National Board Certification**

While it has been expressed in the literature that many teachers initially engage in the NBC process because of financial incentives, other teacher benefits include personal and professional outcomes that impact teaching behaviors beyond the scope of individual teachers’ classrooms. Personal benefits include self-confidence, pride, personal satisfaction, a sense of accomplishment, a heightened sense of efficacy, increased ability to reflect, increased self-knowledge, enhanced speaking or writing skills, discipline to follow through on commitments, and being a role model for others (Hoag, et al., 2004). Professional benefits relating to teaching are described as gains in four categories – reflection upon and evaluation of teaching, teaching and assessment strategies, new knowledge, and ability to articulate not only what they do but also why they do it (Hoag et al., 2004, p. 8). These self-report findings mirror those of external analyses by Lustick & Sykes (2006). Relationships between motivation and practice were affirmed by teachers’ open ended responses including, “It was a grueling process that consumed my life for nearly a year. Would I do it again? In a heartbeat” and “there is no way you can go through the National Board process without it’s impacting your way of teaching, for it
not only highlights your strengths but also your weaknesses. My goal was not to attain a higher position or status but rather to answer ‘Am I teaching to the best of my abilities? Is there more to learn? Where do I need to improve?’” (Hoag et. al., 2004, p. 8).

Personal and professional benefits may enable NBCTs to have both the ability and confidence to extend help to others, including pre-service teachers. National Board Certification has been shown to positively impact willingness to help others with instructional matters in a study of 47 elementary schools in two states (Frank et al., 2008). Instructional helping includes varied forms of assistance ranging from pedagogy to modes of reflection, contributes to professional community, and has been linked to organizational effectiveness (Frank et al., 2008, p. 4). These actions parallel descriptions of Teacher Educator Standards including teaching, professional development, collaboration and public advocacy. Instructional help by individual teachers also fosters a norm of helping which distributes instructional expertise and resources, and contributes to the store of “social capital on which teachers can draw to improve and innovate” (Frank et al., 2008, p. 4) which extends contributions to the improvement to the teacher education profession and scholarship. NBPTS certified teachers were found to “provide more help than comparable peers and …. such behavior appears causally related to certification status” (Frank et al., 2008, p. 24). Importantly, the authors connect NBCT status and teacher educator roles; “If NBPTS certification status promotes helping behavior among teachers, it is one important indicator of their leadership potential in such formal roles as mentor teacher, instructional coach, cooperating teacher (with university-based teacher education), team- or grade-level leader and others” (Frank et al., 2008, p.
Helping has also been associated with teacher interactions triggered by the NBC process in which teachers support one another’s professional development (Park, Oliver, Johnson, Graham & Oppong, 2007). Park and colleagues (2007) found that teachers were more prone to interact surrounding issues of NBC which improved their reflection on teaching practice, established professional discourse communities, raised the standards for teaching performances, and facilitated collaboration. Similar professional development gains may be realized for student teachers included in such interactional communities.

**Teacher Leadership by National Board Certified Teachers**

The teacher leadership potential of NBCTs has yet to be fully elaborated. Teachers often associate professional advancement with leaving the classroom (Lortie, 1975). Most NBCTs in one study did not see how certification affected or could affect professional advancement in their school or another district and some reported NBC status to diminish their ability to take a different position because they were required to remain in their classrooms (possibly a stipend clause) (Hoag et al., 2001). Leadership activities of NBCTs are frequently reported in the literature as surrounding the mentoring of NBC candidates (Buday & Kelley, 1996; Burroughs, Schwartz, & Hendricks-Lee, 2000; Hoag et al., 2004; Peace, 2004; Pool et al., 2001; Pyke & Lynch, 2005; Sato, Hyler & Monte-Sano, 2002). Description of other leadership activities by National Board Certified Teachers is less available. This may be in part due NBCTs’ frequently described desire to “give back” as a result of their own NBC experience (Hoag et al., 2004, Sato, Hyler & Monte-Sano, 2002). In their discussion of the impact of National Board
Certification on the education system, Buday & Kelly (1996), however, identify NBCTs as having been asked to supervise student teachers, participate in projects including school restructuring, curriculum development, and state-level standards panels which readily connect to Teacher Educator Standards including teaching, scholarship and development of a vision for teacher education. Both formal and informal mentoring of colleagues to improve classroom instruction is also among leadership activities of NBCTs (Buday & Kelly, 1996; Frank et al., 2008; Sato et al., 2007) which may be explained by the identification of NBC as holding potential for “both identifying and signaling experienced teachers’ willingness and capability to undertake more leadership” (Frank et al., 2004, p. 24). Impacts on not only colleagues and NBC candidates, but also preservice teachers is suggested by the assertion that National Board Certification “holds potential for becoming a social resource directed to instructional improvement, enhancing the total stock of professional knowledge possessed not by teachers singly, but by the school as a collective” (Frank et al., p. 4).

Universities seek to cultivate teachers who are able and willing to improve schools and have taken actions based on awareness of Board Certified teacher quality including “rethinking their teacher preparation programs to include the National Board’s high standards and performance assessments” (Cisneros, as cited in Buday & Kelly, 1996, p. 220) which lends to the enactment of the Teacher Educator standard of program development. In a survey of over 2000 National Board Certified Teachers’ leadership activities, 90 percent reported mentoring National Board candidates, 83 percent reported mentoring or coaching new or struggling teachers, 80 percent described developing or
selecting programs or materials to support or increase student learning and 68 percent were engaged in other school or district level leadership activities (Sato et al., 2002). Despite the clear connection between the future of the profession and teacher preparation, cooperating teaching was not mentioned, perhaps because this role has not engendered in teachers a sense of empowerment (Hastings, 2004) or because it was not among available selections. However, NBCTs may be a promising positive force in initial teacher preparation. Teachers have been identified as experiencing shifts in both the leadership activities they choose, and how they approach their selected leadership activities upon NBC certification (Sato, et al., 2002). In particular, increased focus is placed upon assuring quality teaching for children in schools, using limited time wisely and cultivating and sustaining an action orientation. In selecting leadership activities National Board Certified Teachers identified increases in confidence as leading them to pursue new roles that they had not attempted previously and to become more selective in their activities while maintaining a focus on student learning. With regard to leadership approaches of NBCTs, Sato and colleagues identified shifts towards a focus on reflection based on student learning and use of the National Board Standards in leadership work, particularly with regard to their work with other teachers – “teachers were applying the high standards of the National Board to their practice and encouraging those around them to do so as well” (Sato et al., 2002, p. 12). This finding suggests that National Board Certified Teachers who engage in cooperating teaching may also apply their understanding of National Board philosophies to their work with student teachers. Additionally, student work analysis also became a focus of leadership work with both
pre-service and new teachers. Collaboration and discussion of practice with others increased as well (Sato et al., 2002).

Through interviews it was revealed that some National Board Certified Teachers had served as cooperating teachers prior to their certification, though many began cooperating teaching after National Board Certification. All but one NBCT identified cooperating teaching as a leadership role. Each NBCT that had worked as a cooperating teacher but did not continue after their certification cited reasons beyond their control such as no student teachers being placed in their building or having not been assigned a student teacher (Sato et al., 2002). This indicates that National Board Certified teachers value cooperating teaching and regularly utilize cooperating teaching as an avenue to make contributions to the larger context of education.

Research has yet to explore and describe the extent to which teachers (including those who have earned National Board Certification) know of and enact cooperating teaching actions associated with accomplished practice for teacher educators. In the section that follows, ATE Standards for Teacher Educators are presented and possible connections to National Board Certification are presented.

**Section Five: Association of Teacher Educators’ Standards for Teacher Educators**

Standards describing the expectations of accomplished teacher educators have recently been released in revised form. These nine standards are designed to “help all teacher candidates and other school personnel impact student learning” (ATE, 2008, p. 1). The standards unite behaviorist, cognitive and situative views of learning to shape policy and future initiatives by calling upon teacher educators to enact teaching behaviors
as models for teacher candidates, amass and utilize knowledge of content and process and environments that optimize opportunities for candidate learning. Potential modes of enactment of each of the nine standards are suggested through indicators and artifacts that may serve as evidence of enactment by accomplished teacher educators. However, these standards have yet to be studied in field-based contexts to ascertain the appropriateness of the standards, indicators and artifacts to the work of cooperating teachers. In the subsection that follows, a brief description of each standard and supporting indicators is provided. In this subsection, I also articulate both parallels and differences between ATE Standards for Teacher Educators and the National Board for Professional Teaching Standards core propositions and candidacy and portfolio requirements. Findings of research that reports teacher actions which may be associated with ATE Standards for Teacher Educators when enacted in student teaching contexts are also reported. In presenting such comparisons and contrasts, I attempt to illuminate possibilities how Board Certification may relate to cooperating teachers’ ability to enact ATE Standards for Teacher Educators and how enactment of the Standards may differ between campus-based and p-12 contexts. In the final subsection, the two studies that have explored the implementation of these Standards are described and gaps in the research with regard to field-based contexts are identified. The nine ATE Standards for Teacher Educators are Teaching, Cultural Competence, Scholarship, Professional Development, Program Development, Collaboration, Public Advocacy, Teacher Education Profession, and Vision.
Standard One: Teaching

Standard one, relating to teaching focuses on modeling of teaching behaviors that can be “observed, adjusted, replicated, internalized, and applied appropriately to learners of all levels and styles” (ATE, 2008, p. 1). Similarly to National Board for Professional Teaching Standards requirements, educators are called upon to demonstrate teaching practices that are consistent with an integrative approach to teaching and learning. As such, educators are called upon to tailor instruction to individual learners and to craft learning experiences that model behaviors and habits of mind that reflect actions that will further the learning process for their students. The indicators of demonstrating critical thinking and problem solving in teaching actions are likely to be fostered by Board Certified Teachers’ experience with describing and analyzing teaching events’ impacts on student learning. In addition, the teaching standard meshes well with core proposition two which requires Board Certified teachers to “know the subjects they teach and how to teach those subjects to students” in that they must demonstrate appropriate subject matter content and utilize varied assessment methods to gauge teacher candidates learning of challenging content. Potential sources of diversity in teacher educator practices between field-based and campus-based teacher educators, however may reside in the extent to which they are perceived to reflect research in their teacher educator roles. These differences may be based on the extent to which scholarly publications (as compared to classroom action research or practitioner journals) are available to them and the extent to which opportunities to share these resources with teacher candidates are available.
Standard Two: Cultural Competence

The second Standard for Teacher Educators is concerned with Cultural Competence which is centered on the ability to prepare teacher candidates to “connect and communicate with diverse learners” (ATE, 2008; Darling-Hammond & Bransford, 2005). The explanation of this standard articulates that teacher educators should take on responsibility for helping pre-service teachers to learn about their own cultures, hold high expectations for all students, understand cultural differences, and “help students to accept and affirm their cultural identity while developing critical perspectives that challenge inequities that schools (and other institutions) perpetuate” (Ladson-Billings, 1995, p. 469 as cited in ATE, 2008, p. 2). National Board Certified teachers are likely to demonstrate cultural competence with regard to their P-12 students as a reflection of National Board core proposition one which calls upon them to understand how a variety of factors including culture impact student learning and to treat students equitably. This practice may transfer to their work with student teachers. Work with a single student teacher at a time may hinder cooperating teachers’ ability to demonstrate this standard due to limited opportunities for comparison. Some cooperating teachers may use strategies including reflective dialogue similar to the discussed by Graham (2006) to prompt student teachers to recognize how their culture and background shape classroom practices. The teaching actions of cooperating teachers working with student teachers may reflect a situative focus including emphasis on culturally responsive pedagogies and utilizing such frameworks to incorporate cultural understandings in promoting student teachers’
knowledge of how they come to make sense of their roles as teachers and how their experiences shape their teaching actions.

**Standard Three: Scholarship**

The third standard for Teacher Educators reflects a focus on scholarship and urges that teacher educators engage in inquiry and scholarship that expands the knowledge base related to teacher education. Indicators for this standard include the investigation of theoretical and practical problems in teaching, learning, and/or teacher education, connecting new knowledge to existing contexts and perspectives and engagement in research and development projects. These potential means of enacting the scholarship standard as a teacher educator may overlap National Board’s fifth core proposition which requires teachers to contribute to school effectiveness by collaborating with other professionals, work collaboratively with parents and take advantage of community resources. However, the means by which cooperating teachers contribute to scholarship is much more likely to be thorough action research based on managing and monitoring student learning (core proposition three) and other school and district level initiatives than the publications and conference presentations typically expected of campus-based teacher educators. Additionally, conducting program evaluations, and acquiring research-based and service-based grants may be much more likely demonstrated by campus-based faculty who have greater voice in programmatic concerns and access to funding sources.

**Standard Four: Professional Development**

Standard four which reflects a focus on professional development requires teacher educators to “inquire systematically into, reflect on, and improve their own practice and
demonstrate commitment to continuous professional development” (ATE, 2008, p. 4). In this context accomplished teacher educators are to help pre service (and practicing) teachers with development and reflection through means which include use of their own professional development to model these practices. Reflection on teaching experiences is a critical component of this standard which is described to occur at several points during and after an instructional event. Accomplished teacher educators are implored by this standard to engage systematically in reflection on their own practice and learning and to engage in meaningful, goal oriented professional development and apply their life experiences to teaching and learning. Through National Board’s certification process, particularly with regard to core propositions one and four in which teachers are called upon to analyze, reflect upon and propose adjustments to future teaching practices and portfolio work in entry four in which teachers address their actions as learners to support student learning, cooperating teachers gain significant learning experiences that prompt them to focus on both the importance and utility of their own professional learning. National Board Certification may be a critical learning experience for teachers with regard to enactment of this standard for teacher educators because many teachers are not otherwise required to connect their professional learning in ongoing ways to identified needs for adjustment of their professional practice. Student teachers, however, may not be aware of cooperating teachers’ own professional development experiences unless they are intentionally utilized by cooperating teachers for the purpose of furthering candidate learning. It has been noted, however that National Board Certified Teachers tend to take
on roles in which they engage in focused professional development activities that are highly collaborative and are focused on improving student learning (Sato et al., 2002).

**Standard Five: Program Development**

Standard five which advances a focus on program development by teacher educators may be more readily enacted by cooperating teachers who work within professional development school contexts than those working in traditional teaching triad arrangements. This is due to the often limited communication between campus-based and field-based teacher educators (Hastings, 2004). Often cooperating teachers’ influence on teacher education program development is limited though their work with individual student teachers, yet has profound impacts on their development and preparation for entry year teaching. As stated, the standard reflects the imperative for teacher educators to “provide leadership in developing, implementing, and evaluating teacher education programs that are rigorous, relevant, and grounded in theory, research, and best practice” (ATE, 2008, p. 5). It is often the case that cooperating teachers do not have access to leadership roles within teacher education. Rarely do they have the opportunity to provide feedback to campus-based teacher educators with regard to the quality of the teacher education program since their involvement in programs is typically limited to candidate learning that occurs in field settings as opposed to university classroom contexts. While core propositions two and four (know the subjects they teach and how to teach them to students, and systematic thinking about practice) cooperating teachers would have to elect to apply these elements of their professional development to teacher education in ways in which that are less likely to be expected of them in p-12 contexts.
Standard Six: Collaboration

Standard six of calls upon accomplished teacher educators to engage in collaboration. Standards based collaboration should occur “regularly and in significant ways with relevant stakeholders to improve teaching, research and student learning” (ATE, 2008, p. 5). Collaboration for student learning is emphasized as well within the core propositions of the National Board. Teachers as candidates extensively document their collaborations with parents and families and others who are external to the classroom context, but may provide support to the educational process or assist in addressing student needs. Cooperating teachers, participating in traditional student teaching arrangements are less likely to engage regularly with stakeholders in teacher education. Constraints may include conflicting or mutually exclusive locations or schedules or perceived hierarchal boundaries that impede two way flow of communication. Such barriers may hinder cooperating teachers’ ability to demonstrate such indicators as engagement in reciprocal relationships in teacher education, initiation of collaborative projects that contribute to improved teacher education or acquisition of financial support for teacher education innovation to support collaboration.

Standard Seven: Public Advocacy

Standard seven which reflects expectations related to public advocacy may be particularly challenging for cooperating teachers, including those who are National Board Certified to demonstrate on the basis of their settings and contexts in p-12 schools. The public advocacy standard requires that accomplished teacher educators “serve as informed, constructive advocates for high quality education for all students” both within
and outside the profession of teacher education (ATE, 2008, p. 6). Indicators of this standard include both awareness and action related to the improvement of education for students at all levels. Use of research based background to formulate action plans is suggested by the standards and the work of advocacy should address concerns for current and future stakeholders. In addition, the standards extend public advocacy by teacher educators to include local state, regional, national and international venues as potential avenues through which teacher educators may demonstrate advocacy for quality education. While teachers in p-12 settings are likely to advocate for quality learning experiences for their students on a regular basis, questions remain as to whether opportunities are regularly harnessed to demonstrate such practices in the context of teacher education or in ways that extend significantly beyond the classroom, school or district level. Recently, National Board Certified Teachers have embraced expanded roles with regard to public advocacy including presenting at state and national conferences with regard to changes needed in teacher education, it is yet unknown whether these initiatives are known by their student teachers or utilized in interactions with student teachers to stimulate or facilitate their professional learning through student teaching.

**Standard Eight: Teacher Education Profession**

Standard eight focuses on accomplished teacher educators’ contributions to improvement of the teacher education profession. This standard synthesizes the standards of vision and collaboration to urge teacher educators to accept responsibility for improving the profession. Teacher educator roles including active membership in local,
state, and national professional organizations, and use of their technical expertise to further the public good are hallmarks of enactment of this standard. Commitments to service to the profession which often include the review of manuscripts for publication in teacher education journals, resources designed to advance the profession, the development of teaching tools related to teacher education, and recruitment of future teacher candidates and teacher educators to the profession are indicators of commitment to the profession. Indicators presented by standards developers with regard to the teacher education profession include a broad range of actions that may be employed by teacher educators who work in either field-based or campus-based settings to demonstrate their commitment to the profession. While the previously mentioned indicators may present challenges in terms of enactment by cooperating teachers, indicators such as mentoring colleagues toward professional excellence, supporting student organizations to advance teacher education or advocating for high quality teacher education standards are more readily accomplished by practicing teachers. In particular studies have revealed that National Board Certified teachers have a tendency to engage in instructional helping and to provide professional learning experiences for colleagues as mentors to those who seek National Board Certification.

**Standard Nine: Vision**

Standard nine urges accomplished teacher educators to “contribute to creating visions for teaching, learning and teacher education that take into account such issues as technology, systemic thinking and world views” (ATE, 2008, p. 8). Establishment of a vision requires teacher educators to embrace the changes that are taking place in society.
and to recognize the potential of these changes as they relate to education. Teacher educators are called upon to interpret the potential of these changes to pre service and practicing teachers so that teachers can understand these changes and generate approaches to professional practice that are innovative and meet the changing needs of society. Teacher educators are called upon to serve as change agent, leading change through research based developments that are attentive to key elements of societal change including technology, globalization, and systemic thinking (ATE, 2008). National Board core propositions two, three and five may contribute to Board Certified Teachers’ ability to demonstrate their belief in a vision for education when they enact skills that led to their successful completion of the certification process in cooperating teaching contexts. In particular, core proposition two requires that teachers know the subjects they teach and how to teach those subjects to students. Elaboration upon this core proposition includes that teachers generate multiple paths to knowledge for their students and appreciate how knowledge in their subject area is created. Such knowledge is likely to enable these teachers to be able to enact forward thinking in terms of their views of where teacher education should be going and how to help realize their goals for their student teachers and future pre service educators. The monitoring and management of student learning may assist teachers in development of vision for teacher education when they apply contributing practices to their work with student teachers. Teachers who enact core proposition three are mindful of their principal objectives and regularly assess student engagement while using multiple methods (which are likely to include technology and adaptive resources) to meet their goals. Membership in learning communities that lead to
positive contributions to school effectiveness may include collaboration with parents and other community stakeholders which are evidenced during the Board Certification process.

In short, each of the ATE Standards for Teacher Educators has either a parallel or potentially contributing source of professional learning in the National Board for Professional Teaching Standards’ core propositions. Whether cooperating teachers enact the teaching abilities that they demonstrated with their p-12 students to earn certification is yet to be determined. In the teacher education literature, despite an extensive search, the researcher identified only two studies that examined enactment of the Association of Teacher Educators’ Standards for Teacher Educators. Both studies were conducted based on the initial seven standards released in 1996.

**Studies Examining ATE Standards for Teacher Educators**

In their 1999 paper presented at the Association of Teacher Educators’ Annual Meeting, Creeley, Davis, Johnson-Naden, Korkatsch-Groszko & Bercik analyzed implementation and modeling of teaching practices for pre service teachers that were intended to demonstrate knowledge skills and attitudes essential to teaching practice in a culturally diverse society. The focus of their paper was limited to Standard 1, teaching. As such, other standards for teacher educators were not explored in connection with facilitating learning about teaching in pre service educators. The four teacher educators included in the study were each university field supervisors and comprised a mix of part time and full time tenure track faculty and adjunct staff members. Health, physical education and athletics, early childhood education, and bilingual/bicultural & elementary
education, and secondary education/English were the content areas for which the supervisors were responsible. Although teacher candidate responses to the instructional artifacts included as appendices to the paper were not provided or enumerated, the researchers advanced the notion that promoting reflection by teacher candidates is critical to the work of teacher educators. The authors also advance the idea that asking teacher candidates to share issues relevant to their teaching experience and data they perceive as important for the field supervisor to know and respond to at varied points in field-experience is essential to enactment of quality teaching by teacher educators. Additionally, the authors identify the “manner in which each university supervisor attempts to achieve understanding and responds” keeping in mind the students context and environment as key to enactment of the Standard (Creeley et al., 1999, p. 11). Taken together, the artifacts demonstrate that promoting reflection in teacher candidates and attending to the uniquenesses of pre-service teachers are critical elements of enacting standard one.

The second study to explore the application of the ATE Standards for Teacher Educators examined enactment of the teacher educator identity though engagement in the production of a standards based electronic portfolio. The fourteen European American teacher educators who participated in the study were teacher educators from across the country (Klecka et al., 2008). Each participant described himself or herself as a teacher educator. The composition of the group reflected some of diversity of teacher educators. Most of the participants were professors, three were doctoral students, two had been classroom teachers and one was an educational consultant. Overall, the participants
described their primary responsibilities as centered on “teaching graduate and undergraduate courses, with some indicating that they supervised preservice teachers” (Klecka et al. 2008, p. 85). From the contextual information provided, the teacher educator group displayed similar situations to the expectations presented in the previous section with regard to their professional responsibilities and their potential for impact on their ability to demonstrate specific standards. Although all participants were responsible for providing campus-based learning experiences for teacher candidates, additional components of their work lives included differences that may relate to standards enactment and identity development. The sizes of the programs in which they worked varied, some both taught courses and supervised student teachers and the two that were at doctorate granting institutions were expected to teach graduate and undergraduate courses while also meeting expectations of conducting research.

A key component of the analysis provided by these researchers was the examination of whether and how the participants addressed indicators for each standard. This analysis revealed that the teacher educators included in the study actively engaged in policy issues and served in leadership roles on institutional boards and associations. However, engagement in public advocacy roles for teacher educator roles were not conveyed and minimal reference was made to the teacher educators’ recruitment of diverse teachers or teacher educators to the profession. Additionally, few of the teacher educators expressed engagement in serving as advocates for, encouraging or promoting promising teacher educators. (Klecka et al. 2008)
Participant concerns were raised during the study about whether the format of an electronic portfolio enabled full representation of the identities they sought to convey. It stands to reason that similar to issues brought about by conveying identity through the use of a specific format for demonstrating teacher educator actions, the context in which teacher educators enact their roles may also shape their ability to be recognized as a certain “kind of person” (Gee, 2000-2001, p. 99), namely a teacher educator, in a the context of student teaching within p-12 settings.

Although the sample did not include cooperating teachers, this early study in the examination of ATE Standards for Teacher Educators lent support to the notion that National Board core propositions may be aligned with teacher educator standards as enacted by practicing teacher educators. By grouping indicators to reflect how participants enacted different facets of their identities across standards the researchers were able to identify five facets of teacher educator identity for the teacher educators included in the study. The identified facets were “teacher,” “scholar in teaching,” “collaborator,” “learner” and “leader”. Participant responses related to teaching identified them as promoting reflection, modeling effective strategies for their students, and revising and refining their teaching based on analysis of student work. Similar practices related in the context of p-12 teaching are required of National Board Candidates. Scholarship in teaching was identified as important to supporting these teacher educators’ teaching practices, but may be enacted and recognized very differently in the context of cooperating teaching. While some participants did mention working with teachers on classroom action research projects, much greater numbers described engagement in
research practices such as grant work, their own dissertations, and dissemination of information related to teacher education through presentations and publications. National Board Certification calls upon teachers to analyze, reflect upon and demonstrate good choices with regard to their professional practice in ways that utilize scholarship (primarily action research) but limited data exists identifying the extent to which Board Certified or other cooperating teachers disseminate their findings to others or engage student teachers in the production and use of research in recognizable ways. Each teacher educator enacted collaboration as an identity facet associated with the standards. Most initiated collaborations and a much lesser number were invited by others to engage in collaboration. Promisingly, over half of the collaborations discussed were driven by work with k-12 schools and professional development. Almost all engaged in collaboration within their institutions, in teacher education associations, and other organizations related to teacher education. The extent to which cooperating teachers are perceived to engage in collaboration related to teacher education may, however, hinge upon the extent to which they are perceived to be integral and valued components of the teacher educator community. As learners, teacher educators sought out growth activities that furthered their research interests, and helped them to stay current in light of rapidly advancing technologies. Surprisingly, only half of the participants mentioned applying what they learned to research based decision-making and even less maintained a goal-based professional growth plan that guides their professional development and learning. Findings related to the professional engagements of National Board Certified Teachers (Sato et al., 2002) may reveal that National Board certified teachers make choices related
to professional learning in more goal oriented ways, however, the extent to which their professional learning choices are related to teacher education remains unclear. With regard to leadership, a key finding was that the teacher educators typically enacted their leadership through influencing programs and professionals by means of having disseminated their professional work. Since dissemination of professional work and findings is in need of development in many p-12 school settings, further research is needed to identify the extent to which cooperating teachers as teacher educators enact leadership with regard to leadership and policy formation. The National Board Certification process prompts teachers to engage with parents and members of the education community, but again, connections to teacher education and the extent to which student teachers are included in or aware of these actions remains unknown.

In short, I believe that important parallels exist between abilities that teachers demonstrate through the National Board Certification process and the expectations advanced by the Standards for Teacher Educators as developed by the Association of Teacher Educators. Research also suggests powerful learning on the part of teachers who engage in the National Board Certification process which I believe may better prepare them for work as teacher educators in their interactions with teacher candidates in student teaching settings. Research is needed to determine the extent to which each standard is appropriate to the work of field-based teacher educators. The research study proposed in the following chapter serves as an initial step in identifying possible intersections among standards and core propositions to foster pre service teacher learning.
To date, studies have established connections between National Board Certification and p-12 student learning gains. However, research has yet to identify whether such gains may also be extended to student teachers working under the mentorship of a National Board Certified Teacher or others who apply the National Board’s Core Propositions to the student teaching context. Research has also identified characteristic actions of cooperating teachers which support pre service teacher learning, but has not examined connections between cooperating teachers’ professional learning experiences and the learning gained by their student teachers. Additionally, while ATE Standards for Teacher Educators have been developed and initial efforts to examine their enactment have begun, these standards have yet to be examined in relation to cooperating teachers. In light of these gaps in the existing body of knowledge in teacher education, the proposed study seeks to explore possible connections between enactment of National Board Core Propositions in student teaching contexts and demonstration of teacher educator standards by cooperating teachers along with student teachers perceptions of their learning related to performance outcomes for field experiences through student teaching.

For reference three figures are provided. Table 2.1 illustrates the Five Core Propositions of the National Board for Professional Teaching Standards. Table 2.2 illustrates the nine Standards for Teacher Educators developed by the Association of Teacher Educators. Table 2.3 illustrates the performance outcomes of the Standards for Field Experiences in Teacher Education as advanced by the Association of Teacher Educators.
Table 2.2

National Board for Professional Teaching Standards Core Propositions

<table>
<thead>
<tr>
<th>Core Proposition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Teachers are Committed to Students and Their Learning</td>
<td>Teachers recognize individual differences in their students and adjust their practice accordingly. Teachers have an understanding of how students develop and learn. Teachers treat students equitably. Teachers’ mission extends beyond developing the cognitive capacity of their students.</td>
</tr>
<tr>
<td>2 Teachers Know the Subjects They Teach and How to Teach Those Subjects to Students</td>
<td>Teachers appreciate how knowledge in their subjects is created, organized and linked to other disciplines. Teachers command specialized knowledge of how to convey a subject to students. Teachers generate multiple paths to knowledge.</td>
</tr>
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<table>
<thead>
<tr>
<th></th>
<th>Table 2.2 Continued</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Teachers are</td>
</tr>
<tr>
<td></td>
<td>Responsible for</td>
</tr>
<tr>
<td></td>
<td>Managing and</td>
</tr>
<tr>
<td></td>
<td>Monitoring Student</td>
</tr>
<tr>
<td></td>
<td>Learning</td>
</tr>
<tr>
<td></td>
<td>Teachers call on multiple methods to meet their goals</td>
</tr>
<tr>
<td></td>
<td>Teachers orchestrate learning in group settings</td>
</tr>
<tr>
<td></td>
<td>Teachers place a premium on student engagement</td>
</tr>
<tr>
<td></td>
<td>Teachers regularly assess student progress</td>
</tr>
<tr>
<td></td>
<td>Teachers are mindful of their principal objectives</td>
</tr>
<tr>
<td>4</td>
<td>Teachers Think</td>
</tr>
<tr>
<td></td>
<td>Systematically About</td>
</tr>
<tr>
<td></td>
<td>Their Practice and Learn</td>
</tr>
<tr>
<td></td>
<td>from Experience</td>
</tr>
<tr>
<td></td>
<td>Teachers are continually making difficult choices that</td>
</tr>
<tr>
<td></td>
<td>test their judgment</td>
</tr>
<tr>
<td></td>
<td>Teachers seek the advice of others and draw on</td>
</tr>
<tr>
<td></td>
<td>education research and scholarship to improve their</td>
</tr>
<tr>
<td></td>
<td>practice</td>
</tr>
<tr>
<td>5</td>
<td>Teachers are Members</td>
</tr>
<tr>
<td></td>
<td>of Learning</td>
</tr>
<tr>
<td></td>
<td>Communities</td>
</tr>
<tr>
<td></td>
<td>Teachers contribute to school effectiveness by</td>
</tr>
<tr>
<td></td>
<td>collaborating with other professionals</td>
</tr>
<tr>
<td></td>
<td>Teachers work collaboratively with parents</td>
</tr>
<tr>
<td></td>
<td>Teachers take advantage of community resources</td>
</tr>
</tbody>
</table>
Table 2.3

Standards for Teacher Educators (Association of Teacher Educators, 2008).

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Teaching</td>
<td>Model teaching that demonstrates content and professional knowledge, skills, and dispositions reflecting research, proficiency with technology and assessment, and accepted best practices in teacher education.</td>
</tr>
<tr>
<td>2  Cultural Competence</td>
<td>Applies cultural competence and promotes social justice in teacher education.</td>
</tr>
<tr>
<td>3  Scholarship</td>
<td>Engage in inquiry and contribute to scholarship that expands the knowledge base related to teacher education.</td>
</tr>
<tr>
<td>4  Professional Development</td>
<td>Inquire systematically into, reflect on and improve their own practice and demonstrate commitment to continuous professional development.</td>
</tr>
<tr>
<td>5  Program Development</td>
<td>Provide leadership in developing, implementing, and evaluating teacher education programs that are rigorous, relevant, and grounded in theory, research and best practice.</td>
</tr>
<tr>
<td>6  Collaboration</td>
<td>Collaborate regularly and in significant ways with relevant stakeholders to improve teaching, research, and student learning.</td>
</tr>
<tr>
<td>7  Public Advocacy</td>
<td>Serve as informed, constructive advocates for high quality education for all students.</td>
</tr>
</tbody>
</table>
Table 2.3 Continued

<table>
<thead>
<tr>
<th></th>
<th>Teacher Education Profession</th>
<th>Contribute to improving the teacher education profession.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Vision</td>
<td>Contribute to creating visions for teaching, learning, and teacher education that take into account such issues as technology, systemic thinking and world views.</td>
</tr>
</tbody>
</table>
Table 2.4
Candidate Performance Outcomes From ATE Standards for Field Experiences in Teacher Education

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The teacher candidate supports practice with theory and research</td>
</tr>
<tr>
<td>2</td>
<td>The teacher candidate reflects on teaching.</td>
</tr>
<tr>
<td>3</td>
<td>The teacher candidate makes sound educational decisions.</td>
</tr>
<tr>
<td>4</td>
<td>The teacher candidate articulates the connections and disconnections between the teacher education program and outcomes and practices in the field.</td>
</tr>
<tr>
<td>5</td>
<td>The teacher candidate demonstrates increased professional learning (in areas outlined above).</td>
</tr>
<tr>
<td>6</td>
<td>The teacher candidate uses feedback on practice to make changes to increase student learning.</td>
</tr>
<tr>
<td>7</td>
<td>The teacher candidate assesses their own teaching on a regular basis.</td>
</tr>
<tr>
<td>8</td>
<td>The teacher candidate demonstrates increased self-confidence and skills in communication.</td>
</tr>
<tr>
<td>9</td>
<td>The teacher candidate understands that teaching is complex and demonstrates an ability to reflect on educational issues and apply good decision making skills.</td>
</tr>
</tbody>
</table>

Continued
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>The teacher candidate discusses the complexities of the teaching role in meeting the challenges of the classroom.</td>
</tr>
<tr>
<td>11</td>
<td>The teacher candidate demonstrates an ability to be an effective decision maker using data regarding students, school context, goals and available knowledge.</td>
</tr>
<tr>
<td>12</td>
<td>The teacher candidate relates theory and practice to instructional decision making.</td>
</tr>
<tr>
<td>13</td>
<td>The teacher candidate participates in the life of the school as a member of a learning community.</td>
</tr>
<tr>
<td>14</td>
<td>The teacher candidate plans instruction that addresses the needs and interests of diverse students.</td>
</tr>
<tr>
<td>15</td>
<td>The teacher candidate works effectively in variety of settings with diverse students.</td>
</tr>
</tbody>
</table>
Chapter Three: Methodology

The methodology presented in this chapter describes the procedures used in the construction, validation and reliability testing of the new quantitative instrument. The goal of this study was the development of a valid and reliable instrument to measure student teachers’ perceptions of their cooperating teachers’ enactment of National Board Core Propositions and ATE Standards for Teacher Educators during clinical practice. The instrument was also designed to elicit the extent to which student teachers believe themselves to have been helped to learn to demonstrate the Candidate Performance Outcomes from the ATE Standards for Field Experiences in Teacher Education through their clinical practice experiences with their cooperating teachers.

The development of a valid and reliable instrument requires the careful execution of the following steps: item generation, item organization and formatting, evaluation by a panel of experts, field testing to identify the clarity and suitability of proposed items, and pilot testing of the instrument (Lukacs, 2008). To achieve these instrumentation goals, five questions guide the study.

1. What items written for the instrument best represent the constructs intended by the ATE Standards for Teacher Educators, Core Propositions and ATE Performance Outcomes for teacher candidates?
2. To what extent are the items included in the new instrument clear and suitable to student teachers?

3. What interpretable underlying structure exists among the variables examined with this measure?

4. What level of reliability can be achieved with this measure?

5. Is there evidence of validity of the newly developed measure?

**Item Generation**

The process of item generation for the instrument began with analysis of the actions addressed by each set of standards or propositions and associated literature. Babbie (2004) asserts that researchers should “avoid double-barreled questions”, meaning that items included in quantitative measures should assess a singular idea rather than attempting to elicit data related to more than one idea (p. 246). Thus, I began by identifying actions addressed within each standard in order to identify individual ideas within the more complex standards. Typically, the item generation process begins with the development of a large pool of items from which selections for inclusion in the questionnaire can be made. In this case, I sought to retain wording as close as possible to that of the original standards and propositions. To retain the language of the standards while addressing only one idea per item, I composed a separate item for each statement joined by either a comma, “and” or ampersand and paraphrased the original standard as closely as possible. When possible, I used the language of the original standard, but took care to include the statements “when teaching me” so that student teachers unfamiliar with the terms “teacher education” and “teacher educator” would recognize that the items
referred to the cooperating teacher’s interactions with him or her in the classroom context. Babbie (2004) asserts that respondents must be both willing and competent to respond to items, so it was essential that the statements be phrased such that they would be readily understood by student teachers. In the development of items, attention was paid to questions such as:

• Does each item elicit the information intended?
• Are all the words understood?
• Are the questions interpreted in the same manner by all respondents?
• Do all close-ended questions have an answer that applies to each respondent?
• Does the questionnaire create a positive impression that motivates people to respond?
• Are the questions answered correctly and in a way that can be understood?
• Does any part of the questionnaire suggest bias on your part?

(Salant & Dillman, 1994)

Whereas each of these concerns was considered in the initial drafting, the phases of pretesting procedures were designed to further these aims. Examination by panels of experts and use of cognitive interviewing techniques with candidates were used to elicit feedback; that feedback was used to develop a measurement tool that elicits the information intended and is perceived by teacher candidates as clear, comprehensible, applicable, inviting and unbiased. Ary, Jacobs, Razavieh & Sorensen (2006) note that “because of poor wording or different meanings of terms, the respondent makes a
significantly different interpretation” as compared to the intent of the researcher’s question. The pretesting process allows me to gain insights on how to improve the instrument before its actual use. Specifically, cognitive interviewing is “a technique used to provide insight into learners’ perceptions in which individuals are invited to verbalize thoughts and feelings as they examine information” which enabled me to determine whether student teachers were interpreting items in the ways I intended (Shafer & Lohse, 2010, p.ii) Before sending the questionnaire to panels of experts or cognitive interview participants, item organization and formatting was necessary. The section that follows describes procedures and decisions I employed in the organization and formatting of questionnaire items.

**Development of Initial Subsections**

The items were initially arranged into preliminary subsections based on the set of standards or core propositions from which they were derived. Although randomization of the items was considered an option for the ordering of the items, I decided against use of this strategy in favor of a “subscale-style” construction because “random order also makes it more difficult for respondents to answer, because they must continually switch their attention from one topic to another,” For example, I chose to avoid candidates’ having to shift their thinking from their learning as a student teacher to their cooperating teacher’s interactions with them and back again (Babbie, 2004, p. 254; Salant & Dillman, 1994). Questions on the same subject were grouped together beginning with the most interesting set of items (Ary, Jacobs, Razavieh & Sorensen, 2006; Babbie, 2004; Salant & Dillman, 1994). Additionally, care was taken to begin the questionnaire with non-
threatening items and place demographic items at the end (Babbie, 2004, p. 254). These recommendations in conjunction with the feedback of ten student teachers whose collective experience spanned grade levels p-12 identified the Enactment of National Board Core Propositions as the subsection best presented at the beginning of the instrument. The items were arranged in this way to facilitate teacher candidates’ ability and willingness to complete the questionnaire, however, following questionnaire administration, exploratory factor analysis was utilized to determine whether the items grouped together in more meaningful ways.

**Development of Questionnaire Instructions and Format**

I developed precise directions to inform respondents as to how to complete the questionnaire. An example of how to indicate responses was provided for the respondents. Recommendations regarding the placement of transitions between the sections of the questionnaire were adhered to in order to provide structure and flow to respondents’ experience when completing the items (Babbie, 2004; Salant & Dillman, 1994). Specifically, sections were labeled and abbreviated directions were provided on each page.

Salant and Dillman (2004) present recommendations regarding the format of questionnaires for use in survey research. Important considerations include how to gain the attention of respondents and obtain high response rates (Salant & Dillman, 1994). To promote the readability and aesthetic appeal of the questionnaire, it was developed such that no items were placed on the front or back covers, ample white space was provided, and the response anchors were provided for reference on each page. Considering
established recommendations for questionnaire formatting, I chose to print the questionnaire in booklet form, with only four essential components on the front cover: the title, the Ohio State University Name and Logo, and the address to which the questionnaire is to be returned (Salant & Dillman, 1994). To promote the social utility of the instrument as perceived by respondents, the title of the study was presented on the front cover. The University Name and Logo were placed on the cover to establish a clear relationship with the university. High quality paper was used and a logical flow was promoted by instructions at the bottom of each page indicating how to proceed through all items.

In addition, two separate sections followed the newly developed items in which two adapted forms of an existing valid and reliable measure of teacher efficacy were embedded in the questionnaire (See “Personal Teaching Efficacy Scale,” α = .74 (Midgley et al., 2000)). The first adaptation, items 61-67, were worded to focus on the student teacher’s perception of his or her cooperating teacher’s efficacy by asking candidates to respond as they thought their cooperating teacher would. The second adaptation, items 68-74, focused on the student teacher’s own efficacy. The candidate was asked to respond by indicating his or her own feelings about each statement. Candidates were to choose a response category along a 1 (strongly disagree) to 5 (strongly agree) rating scale. The reported reliability of the existing measure is α = .74 (Midgley et al., 2000). This measure was included to facilitate correlations of identified subscales of the new measure to an existing valid and reliable measure to ascertain concurrent validity relevant to research question five.
In keeping with questionnaire design as described by Miller (2006), demographic items were reserved for the end of the questionnaire. Since the respondents were requested to complete the questionnaire before obtaining a grade for the student teaching experience, brief explanations regarding anonymity and confidentiality were provided. The back cover provided space for feedback and additional comments from the participants and thanked respondents for their participation.

**Summary of Instrument**

In total, before submission to the panels of experts, cognitive interviews and administration, the questionnaire consisted of 77 total items. Two preliminary items were designed to ensure that the respondents are individuals who meet requirements for inclusion in the study. Sixty of the 77 items were initially arranged within three subsections. The subsections were *Perceptions of Cooperating Teachers Enactment of National Board for Professional Teaching Standards Core Propositions in Student Teaching Contexts*, *Perceptions of Cooperating Teachers Enactment of Teacher Educator Standards in Student Teaching Contexts*, and *Perceptions of Learning through Student Teaching*. Items relating to the same subsection were grouped together. A six point Likert-type scale which ranged from 1(very strongly disagree) to 6 (very strongly agree) was employed to elicit the perceptions of student teachers’ in each of the subsections in a way that would be familiar to them.

Demographic items were also included in order to facilitate the identification of the National Board Certification status of cooperating teachers who worked with the
student teachers who responded to the questionnaire and to facilitate the identification of trends on the basis of demographic characteristics of the student teachers.

**Validity**

Validity refers to how well the instrument or technique measures what it purports to measure (Miller, 2006). The concept of validity centers upon “whether the variable is the underlying cause of item covariation” (DeVellis, 2003). Three types of validity (face validity, content validity and construct validity) are relevant to the study. Research questions one and two address validity concerns related to the initial development of the new instrument. To yield data relevant to research question one, related to content validity, three panels of five experts each were requested to evaluate the items included in each section of the questionnaire. Research question two, related to face validity was addressed through engagement of a total of 13 student teachers similar to those who would actually complete the study in individual cognitive interviews to gather their perceptions of the meaning of and evidence needed to support a response to each item. Ten of the student teachers were interviewed twice, both before and after the items were sent to the panels of experts, and an additional three were interviewed in the second round. Research question three centers upon validity as well, however, construct validity is most effectively addressed after administration of the instrument.

**Procedures to Establish Validity during Initial Instrumentation**

**Content validity: Evaluation by Panels of Experts**

The content validity of the instrument designed is an indicator of the representativeness of the items on the instrument to the entire domain of the content
being measured (Miller, 2006). According to DeVellis, “In theory, a scale has content validity when its items are a randomly chosen subset of the universe of appropriate items” (p. 50). The content being measured by the proposed instrument, however, is complex, a situation similar described by DeVellis as “…the case of measuring beliefs [in which] for example, we do not have a convenient listing of the relevant universe of items” (p. 50). The appropriateness of the scale as developed can be maximized by “having items reviewed by experts for relevance to the domain of interest” (DeVellis, 2003, p. 50).

To answer research question one, “What items written for the instrument best represent the constructs intended by the ATE Standards for Teacher Educators, Core Propositions and Performance Outcomes for teacher candidates?” I sent an initial draft of each subsection to panels of five experts each to obtain feedback to be used for revising and improving the draft questionnaire. Because the three subscales measure different constructs, three panels of experts were necessary for the content validation of the proposed instrument.

When selecting potential experts for the sections on enactment of ATE Standards for Teacher Educators and learning to demonstrate Performance Outcomes from ATE Field Experiences in Teacher Education, I identified individuals who contributed to the initial formulation, development, and revisions that led to the final set of adopted standards. Developers of the ATE Standards for Teacher Educators were identified through meetings at the 2008 Annual Conference of the Association of Teacher Educators at which the final version of the Standards were adopted. Developers of the
ATE Standards for Field Experiences in Teacher Education were identified from the contributors’ page of the actual Standards document. Since initial developers of the National Board Core Propositions could not be readily identified, individuals who were highly knowledgeable of the Core Propositions through extensive work with preparation of Candidates during the Board Certification process were sought out. Regional Facilitators of National Board for Professional Teaching Standards workshops and in-services were identified through the Ohio Department of Education website. Additionally, one researcher who engaged extensively in participant research on the mentoring process related to board certification process was invited to be a member of the panel of experts related to the Core Propositions subscale.

Each member of the panel of experts was sent the appropriate subsection along with an invitation letter soliciting their membership on the panel of experts and a feedback form on which he or she was requested to provide feedback with regard to the content, suitability and clarity of the items. I was able to obtain feedback from all five experts on NBPTS Core Propositions, and three experts each representing ATE Standards for Teacher Educators and Performance Outcomes from ATE Standards for Field Experiences in Teacher Education.

Consistent with recommendations by DeVellis (2003), each member of the panel of experts was asked to determine whether each item was appropriate and clear as it was presented in the draft of the questionnaire. Each member of each panel was asked to evaluate the early draft of the questionnaire in six key areas (See appendices F and G for initial and revised forms of the questionnaire evaluation form). These areas included the
identification of item clarity and appropriateness to student teachers seeking initial licensure, format and content of the questionnaire, quality at eliciting student teachers’ perceptions of each construct, appropriate address of each of the Core Propositions/Standards, elimination of bias, and any other shortcomings I had not identified. Additionally, members of each panel of experts were asked to include any revisions, suggestions or deletions to items as needed. If greater than 50% of a panel agreed that an item was unclear, the instrument would be revised to reflect clarifying changes to the item.

**Face validity: Cognitive Interviews as a Test of Clarity and Suitability of Items**

Whereas face validity is the simplest type of validity, it was important to the implementation of the study. Research Question Two, “To what extent are the items included in the new instrument clear and suitable to student teachers?” required that the instrument be examined by student teachers similar to those who would participate in subsequent studies utilizing the new measurement tool for feedback.

I used cognitive interviewing techniques both before and after the assessment of the items by the panels of experts. Initially, I intended to first send the sections of the questionnaire to the panels of experts before review by teacher candidates. However, an informal conversation with a director of field experiences and a student teacher revealed that since experts may be unlikely to respond more than once to a request to evaluate questionnaire items, it might be helpful to have a set of student teachers examine the items for clarity and suitability before having the items reviewed by the experts. I decided to employ this strategy because it appeared to be a promising way to help ensure that
word choices designed to promote clarity to student teachers maintained a level of
content accuracy acceptable to experts in the field. When making this decision, my intent
was to simply reverse the order of the reviews by student teachers and experts. However,
the review by experts led to changes in several items and the vantage point from which
the National Board Core Propositions section would be approached by student teachers
attempting to respond to the items. Since I perceived these as major changes, a decision
was made to re-contact the student teachers who provided preliminary feedback and to
engage them in a more structured cognitive interview process. As a result, in a second
round of student teacher feedback, the revised instrument was reviewed with the changes
suggested by all of the original student teacher reviewers, and three additional student
teachers. The purpose of engaging student teachers who had not seen the instrument
before in the cognitive interviews was to gain a fresh perspective on the revised
instrument and to provide some element of safeguard against the possibility that second
time participants would be tired of the rather lengthy process and say that the instrument
was clear and appropriate to avoid having to engage in further explanation.

The focus of their examination of the instrument was to determine whether the
instrument appears to measure what it is designed to measure. Cognitive interview
participants were requested to provide feedback which focuses on issues of clarity of
directions, readability, suitability, instrument design and overall understanding of the use
of terms such as teacher education, scholarship, and other terms that may need to be
revised to make the instrument more comprehensible to student teachers. Cognitive
interview participants read the questionnaire using a think-aloud technique in which they
read each item as though they were attempting to respond to it. They described in their own words what they believed the item meant and described information they would use to determine their response. I asked additional questions as needed to assist in the revision of items that are unclear or appear to have meanings other than the intended meaning. I took notes during all interviews to record candidate responses. In addition, some of the candidates wrote comments in the margins of the questionnaire they examined. The first set of interviews resulted in an extensive set of notes. As a result, I chose to audiotape the second set of candidate interviews to allow me to spend more time focusing on candidate responses and asking clarifying questions and less time writing. I supplemented the audiotapes with a brief set of notes taken during each second round interview.

This feedback from student teachers was used to improve upon the instrument prior to its actual completion by candidates during questionnaire administration. If more than 50% of the cognitive interview participants suggested the same change to the instrument, it was used to refine the instrument. Additionally, if fewer than 50% of the participants in the cognitive interviewing process identified an item as in need of revision, I considered individual feedback in decisions about revisions needed to promote the clarity and suitability of the questionnaire.

**Planning for Questionnaire Administration**

Procedures for answering research questions three and four required that the revised questionnaire be administered to student teachers to gain responses that could then be used for factor analysis, calculation of reliability coefficients for identified
subscales, and correlation to the embedded existing measure of teacher efficacy. The section that follows provides procedures for participant recruitment, and administration and collection of the questionnaires from individual teacher candidates. In addition, procedures for collecting sets of questionnaires from program faculty and entering the data obtained into a spreadsheet to be used for data analysis are described.

**Participant Recruitment**

Each of the 50 Ohio Institutions of Teacher Preparation were contacted by e-mail and/or telephone using contact information on program websites (see script in Appendix B) for the purposes of recruiting participation. It was requested that all program candidates engaged in student teaching be included in the sample. Student teacher responses included in the study are from the 11 institutions that chose to participate prior to the conclusion of data collection. A summary of the number of participating student teachers from each institution is presented in Table 3.1.
<table>
<thead>
<tr>
<th>Institution Name</th>
<th>Number of Data Collection Sessions</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>University 1</td>
<td>6</td>
<td>89</td>
</tr>
<tr>
<td>University 2</td>
<td>3</td>
<td>55</td>
</tr>
<tr>
<td>University 3</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>University 4</td>
<td>2</td>
<td>77</td>
</tr>
<tr>
<td>University 5</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>University 6</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>University 7</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>University 8</td>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td>University 9</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>University 10</td>
<td>1</td>
<td>66</td>
</tr>
<tr>
<td>University 11</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total Number of Responses</strong></td>
<td></td>
<td><strong>407</strong></td>
</tr>
</tbody>
</table>
Administration and collection procedures.

Upon identification of the university faculty/staff to administer the revised questionnaire, the individual was provided a script to be read aloud to the group of potential respondents at the agreed upon time of questionnaire administration. The administration script is included as Appendix C.

After the script was read aloud, the administrator of the questionnaire distributed a questionnaire packet including the questionnaire itself, a copy of the invitation to participation for the participant to review and keep and envelope for questionnaire return.

Envelopes were provided for the return of the questionnaires so that candidates’ responses would be sealed and could not be viewed by others during collection/packaging of completed questionnaires.

Student teachers were then instructed to return the completed questionnaires to the administrator of the questionnaire. Those who choose not to participate were instructed to indicate this on the front of their questionnaire. The intent was to account for all questionnaires distributed so that it could be determined that each candidate completed only one.

Participants

The resulting pool of student teachers could be considered a non-probability purposive sample. The student teaching period was selected because of candidates’ extensive interaction with cooperating teachers during the culminating field experience student teachers could only be recruited from institutions who granted permission for their candidates to be contacted during class sessions There was no opportunity to seek
the participation of any student teacher who was not present at the class session in which
the questionnaire was administered. Ary, Jacobs, Razavieh, and Sorensen (2006) identify
purposive sampling as the selection of participants who are judged to be typical or
representative of the target population. For this study, the target population was teacher
candidates in the participating institutions engaged in student teaching under the guidance
of a cooperating teacher. Because it was not possible to access all teacher
candidates at each of the institutions, the target population cannot be quantified. I seek to
generalize only to student teachers who actually participated in the study. A total of 407
teacher candidates responded to the questionnaire for the purposes of this study. One
questionnaire was not included in the analysis because of multiple pages of blank items
(facing pages which may have stuck together). This set of responses represents the
perceptions of the student teachers who were present and consented to participate on the
day(s) of questionnaire administration. No effort was made to contact teacher candidates
who were absent from seminar sessions. Frame and sampling error are not estimated
based on the non-probability purposive sampling method employed.

Participant Demographics

Demographic information which describes 406 teacher candidates completing the
questionnaire are reported in table 3.2
Table 3.2

Participant Characteristics as a Percentage of Respondents

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>23.9</td>
</tr>
<tr>
<td>Female</td>
<td>75.9</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>White/Non-Hispanic</td>
<td>89.9</td>
</tr>
<tr>
<td>Black/Non-Hispanic</td>
<td>3.4</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>1.5</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1.5</td>
</tr>
<tr>
<td>American Indian/Alaskan</td>
<td>1.0</td>
</tr>
<tr>
<td>Multi-Racial</td>
<td>2.0</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>20-23</td>
<td>69.7</td>
</tr>
<tr>
<td>24-27</td>
<td>19.1</td>
</tr>
<tr>
<td>28-31</td>
<td>4.2</td>
</tr>
<tr>
<td>32-40</td>
<td>4.5</td>
</tr>
<tr>
<td>41-51</td>
<td>2.5</td>
</tr>
<tr>
<td>Degree Pursued</td>
<td></td>
</tr>
<tr>
<td>Bachelors</td>
<td>75.5</td>
</tr>
<tr>
<td>Masters</td>
<td>19.1</td>
</tr>
<tr>
<td>Licensure Only</td>
<td>5.4</td>
</tr>
<tr>
<td>Cooperating Teacher’s National Board Certification status</td>
<td></td>
</tr>
<tr>
<td>Board Certified</td>
<td>33.7</td>
</tr>
<tr>
<td>Non-Board Certified</td>
<td>20.4</td>
</tr>
<tr>
<td>Don’t know</td>
<td>45.8</td>
</tr>
<tr>
<td>License Sought</td>
<td></td>
</tr>
<tr>
<td>Elementary Generalist</td>
<td>35.8</td>
</tr>
<tr>
<td>4-9 Dual Subject</td>
<td>17.1</td>
</tr>
<tr>
<td>7-12 Mathematics</td>
<td>6.0</td>
</tr>
<tr>
<td>7-12 Science</td>
<td>1.2</td>
</tr>
<tr>
<td>7-12 Language Arts</td>
<td>11.7</td>
</tr>
<tr>
<td>7-12 Social Studies</td>
<td>4.0</td>
</tr>
<tr>
<td>7-12 Spanish Language</td>
<td>1.0</td>
</tr>
<tr>
<td>7-12 French Language</td>
<td>.2</td>
</tr>
</tbody>
</table>

Continued
Data Collection and Entry Procedures

Once program faculty had administered and collected the questionnaires during a class or seminar session, they were packaged in the return envelope/box I provided and were mailed to my home address. Upon receipt of each package, I inventoried each questionnaire by numbering them with two numbers. The first described the institution to which the questionnaire set was sent, and the second identified each questionnaire by number. The purpose of this system of inventory was to enable me to check the spreadsheet into which all data were entered for errors by comparing responses from the original paper questionnaire to the data entered into the spreadsheet.

After the inventory process for each set of questionnaires was complete, I entered all data into an Excel Spreadsheet. The first two columns of the spreadsheet identified each questionnaire by institution number and questionnaire number. The remaining columns were used to record teacher candidate responses to each item. Two open ended questions were included in the questionnaire to assist me in modifying the questionnaire for future use based on the perceptions of actual respondents. The first open ended item stated “If other actions relating to your student teaching experience, cooperating teacher

<table>
<thead>
<tr>
<th>Subject</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>p-12 Art</td>
<td>2.7</td>
</tr>
<tr>
<td>p-12 Music</td>
<td>6.2</td>
</tr>
<tr>
<td>p-12 Health/Physical Education</td>
<td>2.0</td>
</tr>
<tr>
<td>p-12 Intervention Specialist</td>
<td>6.5</td>
</tr>
<tr>
<td>Special Needs Classroom Teacher</td>
<td>5.5</td>
</tr>
</tbody>
</table>
or teacher preparation program are relevant to your learning about teaching but were not addressed in this questionnaire, share your insights in the space below.” The second open ended item stated “Are there any parts of the directions or specific items that you believe should be revised or otherwise improved before this questionnaire is administered to other student teachers? Please indicate these below or write your comments in the margins near the specific direction statement or item.” All such responses were transcribed into individual columns at the end of the spreadsheet for use in revising the questionnaire for subsequent administrations.

When entering the data into the spreadsheet, all numerical candidate responses were entered as the numerical value selected by the candidate. None of the newly developed items were worded to require reverse coding. Categorical responses were assigned a code number to be used for entering the data into the spreadsheet. Within the Excel spreadsheet, each set of candidate responses was entered across a row with each column representing a specific item or response category for demographic data. If respondents left an item blank, this was denoted by filling the cell with a period to identify it as missing data as opposed to a data entry error. The complete Excel spreadsheet was imported into SPSS version 18.0 for analysis. The data analysis was conducted with listwise deletion of missing items during the calculation of reliability statistics. In terms of correlations based on multiple candidates’ scores, a pairwise approach to identification of unusable data was employed. Unusable data was limited due to my intentional choice to administer the questionnaires through field personnel who served as seminar instructors during required class sessions. Although the number of
absent/missing candidates cannot be calculated, it stands to reason that the approach employed maximized participation by alleviating some of the stressors associated with completing the questionnaires on candidates’ own time outside of the instructional setting.

**Construct Validity: Exploratory Factor Analysis**

To address research question three, “What interpretable underlying structure exists among the variables examined with this measure?” I sought to ascertain the construct validity of the revised instrument. The goal of this stage of the research was to identify whether an alternative interpretable structure exists among the standards and core propositions based on student teachers’ responses. Most appropriate to the present study was the examination of the internal structure of the newly developed instrument through exploratory factor analysis. Recall that in the initial design of the new instrument, items were grouped by the standards from which they were derived. This method of grouping items into subsections of the questionnaire, could be considered the establishment of categories since no attempt was made to cluster related types of actions by cooperating teachers when developing the scale. In his discussion of effective scale development practices, DeVellis asserts “It is also important that the “thing” that items have in common is truly a construct and not merely a category” (2003, p. 64). DeVellis elaborates to state “…our models for scale development regard items as overt manifestations of a common latent variable that is their cause. Scores on items related to a common construct are determined by the true score of that construct” (2003, p. 64). When examining internal structure, intercorrelations are important. In cases where the
items represent a single unidimensional construct, all of the items should have high intercorrelations (Ary et al., 2006). When more than one dimension is suggested, subscales should be evident. The items on each subscale should have high intercorrelations with one another, but the subscales should not have high intercorrelations with each other. Each, however should have high internal consistency (Ary et al., 2006). “The extent to which the observed item intercorrelations agree with the theoretical framework provides evidence concerning the construct being measured” (Ary et al., 2006, p. 251).

In chapter two, I suggested possibilities for ways in which the National Board for Professional Teaching Standards’ Core Propositions and the Association of Teacher Educators’ Standards for Teacher Educators may map upon each other. I, however, did not generate hypotheses relating to how many factors exist or which variables bear tested associations with each factor. Exploratory Factor Analysis was employed to reveal connections between these frameworks that are supported by data gathered from student teachers responding to the items. Factor analysis can be described as “a family of techniques used to detect patterns in a set of interval-level variables” (Ary et al., 2006, p. 391; see also Spicer, 2005). Exploratory factor analysis is appropriate because I am not testing “any formal hypothesis about the number of underlying factors…The number of factors is determined empirically rather than being specified a priori” (Ary et al., 2006, p. 393). “Factor analysis can be used to determine (1) the number of constructs being measured, (2) which constructs are contributing to performance on which test and (3) the amount of variance in test scores accounted for by which constructs” (Miller, 2006, p.
16). I utilized exploratory factor analysis for each of these purposes. Upon identification of factors, the factors were then named based upon similarities in items that load on each factor. This information may suggest the use of the factors in drafting additional forms of the instrument in subsequent research to reduce the length of the measurement tool, yet still provide for effective examination of the constructs under study.

**Reliability**

To address research question four, “What level of reliability can be attained with this measure?” administration of the instrument to an appropriately sized sample who respond to each item was required.

**Measurement Considerations**

The reliability or internal consistency of an instrument can be measured through “correlating test-retest, equivalent-forms, or split-half scores” (Ary et al., 2006, p. 378). I have ruled out each of these forms of establishing reliability of the new instrument for reasons related to the methods and constructs examined in the current study. The length of the instrument is not long enough to effectively be split in half and compared, other measures of the same constructs are not available, and equivalent forms are not available. Test-retest reliability measures can be eliminated as an option because individual student teachers from multiple institutions complete the questionnaire anonymously and as such cannot be identified so that relative positions on subsequent administrations can be ascertained. An additional critical challenge of the test-retest method of establishing reliability of the instrument is the assumption that “the characteristic being measured by the test is stable over time” (Ary et al., 2006, p. 259-260). Due to the developmental
nature of student teaching, respondents’ perceptions of their cooperating teacher and their own learning are likely to change over the time that would pass between early and late administrations. The instrument as developed is designed to be administered as close to the end of the student teaching experience as possible so that student teachers can reflect on the entire experience when selecting their responses.

**Cronbach’s Alpha**

I identified the use of Cronbach’s alpha, a widely used internal-consistency measure of reliability as appropriate to the goals and methodological processes of the present study. Signals that the use of Cronbach’s alpha is appropriate for this study include that it requires a single administration of the questionnaire and is able to assess reliability using a single form of the instrument. Cronbach’s alpha is appropriate for attitude scales and other measures on which right or wrong answers are not the focus (Ary et al., 2006). It is important to note, however that heterogeneous test items – those that measure multiple traits or attributes, will have lower reliability indices (Ary et al., 2006). Since Alpha examines the extent of correlation among responses obtained at the same time, others have explored whether Alpha is appropriate for multidimensional sets of items. Garson (2008) asserts that “Though widely interpreted as such, strictly speaking alpha is *not a measure of unidimensionality*. Rather, alpha is a measure of level of mean intercorrelation weighted by variances…” (p. 4). This identifies the possibility of set of items resulting in a high alpha while also representing multiple dimensions. Garson (2008) identifies this as the result of separate groups of items (dimensions) that, intercorrelate highly within, but not across, dimensions.
This is important to note since the items included in the instrument are derived from separately developed sets of Standards and Core Propositions which I believe to be related to one another, though no relations are explicitly stated by their developers.

Discussing the minimum reliability acceptable for an instrument Ary et al. identify “a good reliability is one that is as good or better than the reliability of competing measures” (2006, p.267). Thus a newly developed attitudinal measure which has no competing measures at this time, would be expected to have a more modest reliability than that of an instrument that has been developed to improve existing measures. The measurement of personality variables has been identified as most difficult to obtain, and as a result, typically have moderate reliability of .6 to .7 (Ary et al, 2006, p. 267). To establish its reliability, the instrument was tested through administration to a group similar to but not inclusive of research subjects that would participate in subsequent studies in which the instrument would be used. Reliability coefficients are reported by subscale identified through the factor analysis procedure. An alpha level of 0.60 is deemed acceptable.

**Assessing Validity of the Newly Developed Measures**

To address research question five, ‘Is there evidence of validity of the newly developed measures?,” I embedded an existing scale in two adapted forms for the purposes of correlating student teachers’ responses along each identified subscale and an established measure of teacher efficacy (“Personal Teaching Efficacy Scale,” α=.74 (Midgley et al., 2000)). The existing measure was adapted separately to correspond to student teachers’ personal efficacy (included as items 61 through 67 ) and cooperating
teacher efficacy as perceived by the candidate (included as items 68 through 74). Pearson-r correlations were employed.

Table 3.2 summarizes the research methods employed by presenting data analysis strategies for each research question.
Table 3.3

Data Analysis Strategies by Research Question

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Data Analysis Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>What items written for the instrument best represent the constructs intended by the ATE Standards for Teacher Educators, Core Propositions and ATE Performance Outcomes for teacher candidates?</td>
<td>Analysis of feedback on each set of items from each panel of experts. If more than 50% of a panel of experts recommends a change to the instrument, the change will be incorporated into the instrument. If a change is suggested by fewer than 50% of the panel, but it appears to improve the instrument, it may be implemented at the recommendation of myself and dissertation committee members.</td>
</tr>
<tr>
<td>To what extent are the items included in the new instrument clear and suitable to student teachers?</td>
<td>Analysis of feedback on each set of items from field test participants. If more than 50% of field test participants recommend a change to the instrument, it will be incorporated into the instrument.</td>
</tr>
<tr>
<td>What interpretable underlying structure exists among the variables examined with this measure?</td>
<td>Examination of the data through Exploratory Factor Analysis.</td>
</tr>
</tbody>
</table>
Table 3.3 Continued

<table>
<thead>
<tr>
<th>Question</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>What level of reliability can be attained with this measure?</td>
<td>Calculation of Cronbach’s alpha based on the responses of study participants.</td>
</tr>
<tr>
<td>Is there evidence of validity of the newly developed measures?</td>
<td>Calculation of Pearson Product Moment Correlations between subscales of new instrument and an existing valid and reliable measure of teacher efficacy.</td>
</tr>
</tbody>
</table>
Chapter Four: Results

This chapter presents findings related to each research question examined in this study. The presentation of results is organized by research question. To address the first research question, responses from the panels of experts who reviewed each set of potential items is presented. Additionally, rationales for changes made to the questionnaire at this stage of development are shared. To address research question two, themes that emerged from cognitive interviews with teacher candidates both before and after the items were sent to panels of experts are presented. Changes made to the questionnaire drafts based on teacher candidate feedback prior to the administration of the questionnaire are summarized and shared. To address research question three, the results of an exploratory factor analysis are shared to identify the underlying structure existing among the variables examined with this measure. Research question four, which focused on the level of reliability attained with the newly developed measure, is addressed through presentation and description of Cronbach’s alpha statistics for each subscale identified through the exploratory factor analysis. Research question five is addressed through the presentation of correlations between the new scales and an existing measure. The results presented in this chapter provide content and structure to the discussion by research question presented in Chapter Five.
Research Question 1

Research question one stated “What items written for the instrument best represent the constructs intended by the ATE Standards for Teacher Educators, Core Propositions and ATE Performance Outcomes for teacher candidates”? The initial set of items written for the questionnaire (see Appendix D) were examined by panels of experts in each of the three content areas – National Board Certification, ATE Standards for Teacher Educators, and Performance Outcomes from the ATE Standards for Field Experiences in Teacher Education.

Whereas feedback from the panels of experts did not result in agreement of 50% or greater for any of the proposed subsections or items, individual expert feedback guided revisions to both the feedback process and developing questionnaire.

The initial document mailed to each expert included the evaluation form (see Appendix E) and the set of items corresponding to the area of expertise of the expert. Early in this process, one member of the panel of experts for the National Board Core Propositions commented that it “would have helped me to know from which proposition each question was derived.” I found this to be particularly helpful feedback, and responded by developing a matrix to accompany each set of prospective items which identified the Core Proposition/Standard from which each item was derived for inclusion with the questionnaire evaluation packet and re-mailed the packets with an explanation of the change. The incorporation of the matrix was identified as a helpful tool by experts responding after the inclusion of this item. As a result, feedback from experts that responded for the first time after the inclusion of this element was more detailed than that
of the initial feedback of those who either responded to both requests for feedback or responded only prior to the addition of the matrix.

A broad change was also made to the questionnaire at the suggestion of an expert. Relating to the National Board Core Propositions section, I incorporated the suggestion to focus the items on the extent to which the cooperating teacher models the core propositions for the teacher candidate rather, than placing the focus of the items on how the cooperating teacher uses the core propositions from the vantage point of student teacher as learner. This change to a focus on modeling by the cooperating teacher was recognized as a change that improved the quality of the questionnaire by those who commented on it. No experts addressed it as detracting from the quality, clarity or appropriateness of the questionnaire.

Individual expert feedback also guided revisions to specific items. Each revision suggested by experts was considered individually on the basis of how it would impact the ability of the refined instrument to elicit the data intended. The feedback suggested by fewer than 50% of a panel was incorporated if the change appeared to contribute to the improvement of specific questionnaire items.

Such considerations resulted in changes which included providing for more specific examples of what was meant by inquiry and scholarship, which led to the descriptions including clearer mention of action research and sharing of what is learned with others important to student teacher learning. With regard to National Board Core Propositions, a change was also made to reflect teachers’ awareness of how students’ interactions with one another impact learning, reductions of redundancy in items that
appeared to be asking the same question, and further clarification of which “others” cooperating teachers collaborate with by distinguishing among parents, colleagues and the community. Regarding ATE Standards for Teacher Educators, feedback centered upon making items specific so that student teachers are able to respond based on their interactions, conversations and modeling experiences with cooperating teachers.

An expert who was unaware that cognitive interviews were already included in the research design suggested that interviews be used to ascertain student teacher access to relevant information. Addressing these items from the perspective of modeling was also suggested by one member of the panel of experts, but was decided against because the Core Propositions section already addressed modeling, and a change of this section to modeling as well would make some of the items indistinguishable. With the change to modeling in the Teacher Educator Standards section, no items would remain which address the extent to which the cooperating teachers’ actions with children may differ from their actions and abilities when teaching adults. It was thus decided that Teacher Educator subsection remain designed to reflect actions considering the student teacher as the learner. With regard to the Performance Outcomes from the ATE Standards for Field Experiences in Teacher Education, suggestions included to make the items more specific to improve the frame of reference for candidates to focus the experiences they drew from when formulating their responses and to add an open ended response section.

Based on the feedback from the panels of experts, and review by me, the changes were made to the revised design of the instrument. In the second round of cognitive interviews,
the changes were confirmed by teacher candidates as improving the clarity and suitability of specific items and subsections overall.

**Research Question 2**

Research question two stated, “To what extent are the items included in the new instrument clear and suitable to student teachers”? Thirteen student teachers whose collective clinical practice spanned grades p-12 engaged in cognitive interviews in which they reviewed each item included in the draft of the questionnaire both before and after revisions based on expert feedback. The schedule and purpose of the cognitive interviews are summarized in Table 3.4.
Table 3.4  
Timing and Purpose of Cognitive Interviewing in the Research Process

<table>
<thead>
<tr>
<th>Process</th>
<th>Number of Respondents</th>
<th>Addressed Research Question</th>
<th>Primary purpose was to determine…</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round One Cognitive Interviews</td>
<td>10</td>
<td>2</td>
<td>what candidates thought each question was asking; to determine what meaning student teachers made of each item</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>how items could be re-worded such that they would be consistently interpreted to have the intended meaning when read by student teachers</td>
</tr>
<tr>
<td>Expert Review</td>
<td>11</td>
<td>1</td>
<td>whether each set of items represented the constructs intended by the developers of the standards</td>
</tr>
<tr>
<td>Round Two Cognitive Interviews</td>
<td>13</td>
<td>2</td>
<td>whether the items were clear and conveyed consistent meanings to student teachers after incorporation of expert feedback</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>whether student teachers had access to the information needed to respond to items centered upon cooperating teachers’ professional development and contributions to teacher education</td>
</tr>
</tbody>
</table>

*Note.* Three separate panels of experts were contacted for feedback. Feedback was obtained from five experts on National Board for Professional Teaching Standards.
Core Propositions. Feedback was obtained from three experts on ATE Standards for Teacher Educators. Feedback was obtained from three experts on Performance Outcomes from the ATE Standards for Field Experiences in Teacher Education. Round Two Cognitive Interview participants included the ten original participants, and three new participants.

**Round One Cognitive Interviews**

For each item, the teacher candidates identified what they thought the item meant by paraphrasing it. In cases in which the statement provided by the teacher candidate did not have the meaning that I intended when developing the item, I asked further questions to identify ways that the item(s) could be modified to better represent the intended idea. During this first set of interviews, most candidates agreed that the questionnaire items could be shortened to address the intended ideas in a more concise or direct way. Additionally, the first round of interviews revealed that educational jargon should be removed from the items as much as possible and replaced with more concrete examples of the idea in practice to prompt the candidates’ connection to their own lived experiences in the student teaching context. In particular, all uses of the terms “teacher educator” and “teacher education” were identified to be eliminated from the items as some student teachers either thought the terms to be redundant typographical errors or to refer to their cooperating teacher’s education (since student teachers were “not teachers yet”). Word choice was revised to use more common terminology to make the items as comprehensible as possible to a wide range of candidates. The teacher candidates who participated in the cognitive interview process were each asked if they would be willing to review the items again after the changes were made.
Round Two Cognitive Interviews

In addition to the ten original interviewees, three additional candidates participated in a second round of cognitive interviews after the instrument was revised based on feedback from the panels of experts. Few changes resulted from the second round of interviews, as the candidates identified changed items as clear and the overall questionnaire as much more effective and concise. Candidates referred to similar experiential contexts when describing the information they drew from to decide on a response category.

Expert feedback obtained between the two rounds of cognitive interviews suggested I explore the extent to which candidates have the information needed to respond to items about cooperating teachers’ professional development or contributions to teacher education. Based on this feedback, increased attention was paid to such items through probing questions. For example, when candidates stated that they believed their cooperating teachers engage in action research based on their work as cooperating teachers, I asked for examples of why they thought so, or how they came to find out. In response to these types of probing questions, candidates described cooperating teachers’ actions and conversations that related to work with local universities and professional development teams with colleagues. In cases in which candidates believed their cooperating teachers to have limited activity, they were able to provide accounts of actions and conversations to support their reasoning. The lines of thought and types of
conversations candidates referred to in making their decision led to the conclusion that they did have enough information to respond appropriately.

After the second round of cognitive interviews I did not further refine the instrument. To determine whether actual respondents to the questionnaire had difficulty interpreting specific items, I built in an open ended narrative section to the questionnaire. Based on these examinations of the questionnaire items, it is believed that each item is clear and understandable to teacher candidates.

The cognitive interview process focused primarily on the interpretation of questionnaire items related to student teaching along three sets of Standards in Education – National Board Core Propositions, ATE Standards for Teacher Educators and ATE Performance Outcomes for Field Experiences in Teacher Education. Demographic items included at the end of the questionnaire were included in the review, but were not highlighted as an area in need of revision by the teacher candidates participating in either set of cognitive interviews. During the cognitive interviews, when asked about their ability to interpret the demographic items, in particular the number of weeks spent in student teaching and in other field experiences prior to student teaching, the candidates consistently reported that provided the “units” (weeks, hours, days, or terms) remained consistent, candidates would be able to identify the length of time spent in student teaching, field placements prior to student teaching, and schools identified as rural, urban or suburban. The actual administration of the questionnaire, however, revealed that some candidates had difficulty converting their time spent in field experiences into “weeks”. Evidence revealing this challenge included written notes in the demographic information
area of the questionnaire which included and mirrored “It is hard to convert the time I spent in field experiences before student teaching into weeks because I went only for certain days of the week and didn’t spend the whole day there”. Other evidence included numbers of weeks listed that did not add up to the same reported total. This evidence suggests that an improvement upon the questionnaire for future administration would include the revision of the items regarding “weeks” of field placements to either allow for candidate selection of their preferred time unit or identification using the unit “clock hours” to identify time spent in clinical practice.

**Research Question 3**

Research question three stated “What interpretable underlying structure exists among the variables examined with this measure”? The items were initially organized into subsections, groups organized by the set of standards from which they were derived. Each set of items was worded beginning with the same stem. Exploratory Factor Analysis (EFA) was employed to identify the underlying structure of the items. This process was designed to identify relations among the items which led to their grouping in subscales. Quantitative data were analyzed for appropriateness prior to conducting a Principal Components Analysis (PCA) with orthogonal rotation (Varimax) on the 60 newly developed items. The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO = .976 (“superb” according to Field, 2009), and all KMO values for individual items were > .938, which is well above the acceptable limit of .5 (Field, 2009). Bartlett’s test of sphericity \[X^2 (1770) = 21058.155, p <.001\], indicated that correlations between items were sufficiently large for PCA. The null hypothesis that the correlation is
an identity matrix was rejected. An initial analysis was run to obtain Eigenvalues for each component in the data. Six components had Eigenvalues over Kaiser’s criterion of 1. Together, these components explained 67.349% of the variance (Table 4.1). Six factors were retained in the final analysis. Table 4.2 shows the factor loadings after rotation. Items 21 and 43 were not retained because they did not load sufficiently on any dimension. Items that loaded on a factor with values above the criterion level of .4 were retained on that component.

In cases in which items loaded on more than one component, I reviewed each item to determine the most appropriate component, based on face validity. Table 4.3 presents the rationale for each of these decisions. The items that load on the same factor suggest Component 1 represents actions that model quality classroom pedagogies for p-12 students; Component 2 represents use and promotion of reflection in a learning environment which is accepting of the candidate; Component 3 represents dedication to cooperating teaching through the use of research, collaborations, and professional development; Component 4 represents promoting candidate understanding of/effective action involving connections between key components or stakeholders in education; Component 5 represents modeling of collaboration with others relevant to p-12 student learning; and Component 6 represents cooperating teachers’ technology orientation. Table 4.1 presents the Eigenvalues, total variance explained for each factor retained.
Table 4.1

*Total Variance Explained*

<table>
<thead>
<tr>
<th>Component/Factor</th>
<th>Initial Eigenvalues</th>
<th>Rotation Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>% of Variance</td>
</tr>
<tr>
<td>1</td>
<td>32.955</td>
<td>54.924</td>
</tr>
<tr>
<td>2</td>
<td>2.288</td>
<td>3.813</td>
</tr>
<tr>
<td>3</td>
<td>1.618</td>
<td>2.697</td>
</tr>
<tr>
<td>4</td>
<td>1.396</td>
<td>2.326</td>
</tr>
<tr>
<td>5</td>
<td>1.139</td>
<td>1.899</td>
</tr>
<tr>
<td>6</td>
<td>1.014</td>
<td>1.689</td>
</tr>
</tbody>
</table>

Table 4.2 presents factor loadings for the six factors established. A Varimax rotation was used to maximize the variance of the squared loadings.
Table 4.2

*Factor Loadings by Item for Exploratory Factor Analysis with Varimax Rotation*

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>My Cooperating Teacher Models…</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1 Recognition of students’ individual needs</td>
<td>.668</td>
<td>.236</td>
<td>.183</td>
<td>.322</td>
<td>.048</td>
<td>.112</td>
</tr>
<tr>
<td>Q2 Adjustment of lessons to enable all learners to meet challenging goals</td>
<td>.686</td>
<td>.191</td>
<td>.185</td>
<td>.340</td>
<td>-.025</td>
<td>.169</td>
</tr>
<tr>
<td>Q3 Understanding of how student-to-student interactions in the classroom impact learning</td>
<td>.649</td>
<td>.069</td>
<td>.348</td>
<td>.275</td>
<td>.091</td>
<td>.010</td>
</tr>
<tr>
<td>Q4 Understanding of how students learn</td>
<td>.751</td>
<td>.258</td>
<td>.184</td>
<td>.168</td>
<td>.126</td>
<td>.059</td>
</tr>
<tr>
<td>Q5 Equitable treatment of all students</td>
<td>.492</td>
<td>.292</td>
<td>.244</td>
<td>.227</td>
<td>.288</td>
<td>.009</td>
</tr>
<tr>
<td>Q6 That his or her mission in working with students extends beyond developing their cognitive abilities</td>
<td>.615</td>
<td>.191</td>
<td>.318</td>
<td>.304</td>
<td>.196</td>
<td>-.035</td>
</tr>
</tbody>
</table>

Continued
<table>
<thead>
<tr>
<th>Q7</th>
<th>How to develop lessons that connect different subject areas (e.g. science, math, reading)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q8</td>
<td>How to make subject-specific content make sense to students</td>
</tr>
<tr>
<td>Q9</td>
<td>How to provide multiple examples to help students understand concepts they struggle with</td>
</tr>
<tr>
<td>Q10</td>
<td>Ways to connect what students already know to what they will learn in the future</td>
</tr>
<tr>
<td>Q11</td>
<td>Use of a variety of methods to meet established goals for student learning</td>
</tr>
<tr>
<td>Q12</td>
<td>The ability to keep all students engaged during whole-group instruction</td>
</tr>
<tr>
<td>Q13</td>
<td>Commitment to student engagement</td>
</tr>
<tr>
<td>Q14</td>
<td>How to give students feedback about their progress</td>
</tr>
<tr>
<td>Q15</td>
<td>Strategies for making difficult instructional decisions</td>
</tr>
</tbody>
</table>

Continued
Table 4.2 Continued

<table>
<thead>
<tr>
<th>Question</th>
<th>Value1</th>
<th>Value2</th>
<th>Value3</th>
<th>Value4</th>
<th>Value5</th>
<th>Value6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q16 Seeking the advice of others to promote student learning</td>
<td>0.268</td>
<td>0.248</td>
<td>0.370</td>
<td>0.219</td>
<td>0.617</td>
<td>0.083</td>
</tr>
<tr>
<td>Q17 How ongoing teacher learning improves teaching effectiveness</td>
<td>0.475</td>
<td>0.195</td>
<td>0.400</td>
<td>0.179</td>
<td>0.440</td>
<td>0.143</td>
</tr>
<tr>
<td>Q18 Reflection on the effectiveness of specific lessons</td>
<td>0.407</td>
<td>0.418</td>
<td>0.250</td>
<td>0.181</td>
<td>0.270</td>
<td>0.308</td>
</tr>
<tr>
<td>Q19 Contributions to the school’s effectiveness by collaborating with other professionals</td>
<td>0.331</td>
<td>0.184</td>
<td>0.347</td>
<td>0.250</td>
<td>0.629</td>
<td>0.055</td>
</tr>
<tr>
<td>Q20 Collaboration with parents to help students learn</td>
<td>0.392</td>
<td>0.219</td>
<td>0.082</td>
<td>0.374</td>
<td>0.522</td>
<td>0.137</td>
</tr>
<tr>
<td>Q21 Use of community resources to help students learn</td>
<td>0.300</td>
<td>0.146</td>
<td>0.274</td>
<td>0.341</td>
<td>0.377</td>
<td>0.265</td>
</tr>
<tr>
<td>My cooperating teacher…</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q22*Makes connections to our subject matter clear to me</td>
<td>0.404</td>
<td>0.540</td>
<td>0.394</td>
<td>0.173</td>
<td>0.157</td>
<td>0.081</td>
</tr>
<tr>
<td>Q23 Understands how I learn</td>
<td>0.286</td>
<td>0.564</td>
<td>0.410</td>
<td>0.227</td>
<td>0.245</td>
<td>0.053</td>
</tr>
</tbody>
</table>

Continued
Q24 Demonstrates professionalism when helping me learn about teaching

Q25 Uses research to improve his or her ability to model effective teaching for me

Q26 Uses technology to help me learn about teaching

Q27 Assesses my progress in ways that help me learn about teaching

Q28 Demonstrates that he or she values cultural diversity

Q29 Creates a learning environment in which my uniqueness is accepted

Q30 Investigates ways to help me learn about teaching strategies

Q31 Shares his or her understanding of how student teachers learn with others

Table 4.2 Continued

| Q24 | Demonstrates professionalism when helping me learn about teaching | .304 | .633 | .349 | .128 | .290 | .049 |
| Q25 | Uses research to improve his or her ability to model effective teaching for me | .271 | .269 | .675 | .202 | .157 | .186 |
| Q26 | Uses technology to help me learn about teaching | .136 | .205 | .417 | .165 | .143 | .642 |
| Q27 | Assesses my progress in ways that help me learn about teaching | .244 | .593 | .453 | .185 | .158 | .260 |
| Q28 | Demonstrates that he or she values cultural diversity | .346 | .428 | .425 | .322 | .123 | .090 |
| Q29 | Creates a learning environment in which my uniqueness is accepted | .319 | .621 | .363 | .293 | .183 | .007 |
| Q30 | Investigates ways to help me learn about teaching strategies | .226 | .511 | .549 | .245 | .222 | .191 |
| Q31 | Shares his or her understanding of how student teachers learn with others | .278 | .412 | .572 | .285 | .197 | .083 |

Continued
Table 4.2 Continued

| Q32 | Shares his or her knowledge with others to improve student teaching experiences | 0.223 | 0.475 | 0.609 | 0.168 | 0.231 | 0.128 |
| Q33 | Contributes to improvement of teacher education programs | 0.295 | 0.322 | 0.598 | 0.202 | 0.216 | 0.241 |
| Q34 | Engages in action research based on his or her own work as a cooperating teacher | 0.277 | 0.193 | 0.665 | 0.180 | 0.166 | 0.227 |
| Q35 | Reflects his or her strategies for helping me learn about teaching | 0.233 | 0.550 | 0.543 | 0.157 | 0.176 | 0.244 |
| Q36 | Has adjusted his or her ways of working with me to meet my specific learning needs | 0.260 | 0.597 | 0.443 | 0.246 | 0.143 | 0.163 |
| Q37 | Demonstrates a commitment to continuous professional development | 0.394 | 0.347 | 0.564 | 0.289 | 0.134 | 0.060 |

Continued
Table 4.2 Continued

Q38  Collaborates regularly with others .309 .336 **.509** .329 .377 .107
who are important to student
teachers’ learning

Q39  Promotes high quality education for **.586** .388 .296 .300 .200 .146
all students

Q40  Promotes high quality experiences .367 **.657** .347 .222 .209 .137
for me as I learn about teaching

Q41* Contributes to improving the **.438** **.460** **.455** .284 .191 .095
profession of teaching

Q42  Encourages me to use technology in .172 .161 .186 .210 .068 **.761**
my teaching

Q43* Encourages me to consider how .373 .384 .270 .311 .189 .385
experiences I create for students
relate to their lives

Continued
Table 4.2 Continued

Q44  Encourages me to consider how my teaching may be interpreted by families

Q45  Sees himself or herself as teaching me to be an effective teacher

| Q46 | Use learning theories to plan | 0.274 | 0.129 | 0.567 | 0.442 | 0.053 | 0.174 |
| Q47 | Reflect on how my teaching impacts students | 0.379 | 0.489 | 0.251 | 0.350 | 0.170 | 0.183 |
| Q48 | Make sound educational decisions | 0.315 | 0.593 | 0.259 | 0.365 | 0.291 | 0.096 |
| Q49 | Connect what I learn in my teacher education program to what occurs in a real classroom | 0.197 | 0.413 | 0.244 | 0.460 | 0.232 | 0.059 |

Continued
| Q50  | Demonstrate increased professional learning | 0.353 | 0.478 | 0.237 | 0.474 | 0.200 | 0.188 |
| Q51  | Use feedback on my teaching to make changes that improve student learning | 0.260 | 0.654 | 0.183 | 0.389 | 0.094 | 0.196 |
| Q52  | Assess my own teaching on a regular basis | 0.252 | 0.649 | 0.073 | 0.312 | 0.024 | 0.247 |
| Q53  | Become more self-confident in my communication skills | 0.235 | 0.549 | 0.122 | 0.512 | 0.145 | 0.117 |
| Q54  | Make appropriate decisions in complex situations | 0.205 | 0.523 | 0.167 | 0.553 | 0.195 | -0.040 |
| Q55  | Collaborate with others to meet classroom challenges | 0.280 | 0.370 | 0.159 | 0.539 | 0.316 | 0.064 |
| Q56  | Use varied forms of data to make effective decisions | 0.270 | 0.189 | 0.245 | 0.653 | 0.084 | 0.218 |
Table 4.2 Continued
Q57  Relate theory and practice to instructional decision making  
     .181  .214  .394  **.664**  .103  .202

Q58  Effectively participate in the improvement of the school as a member of a learning community  
     .241  .303  .301  **.595**  .266  .169

Q59  Plan instruction that addresses both the needs and interests of diverse students  
     .356  .398  .254  **.542**  .182  .132

Q60  Work effectively in a variety of settings with diverse students  
     .364  .387  .214  **.538**  .191  .156


Exploratory factor analysis led to the identification of six distinct factors with specific items loading on each of the factors/components. Information from the factor analysis led to the development of six scales. Some of the items loaded on more than one factor/component. Table 4.3 presents those items, the factors/components they loaded on, and the final decision regarding the factor/component on which those items would be retained along with the rationale for the decision made.
<table>
<thead>
<tr>
<th>Item</th>
<th>Factor it loaded on</th>
<th>Other factor loaded on</th>
<th>Decision for factor</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q7</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>About teaching of p-12 students/own lesson planning</td>
</tr>
<tr>
<td>Q15</td>
<td>1</td>
<td>5</td>
<td>5</td>
<td>About working with others and considering points of view</td>
</tr>
<tr>
<td>Q17</td>
<td>1,3</td>
<td>5</td>
<td>3</td>
<td>More about professional development than the other two component options</td>
</tr>
<tr>
<td>Q18</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>More assessment and reflection than during-lesson teaching strategy</td>
</tr>
<tr>
<td>Q22</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>About teaching of student teacher</td>
</tr>
<tr>
<td>Q23</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>Cooperating teacher as learner and investigator, able to do research or employ strategies to understand how student teacher learns</td>
</tr>
<tr>
<td>Q26</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>Specific to technology</td>
</tr>
</tbody>
</table>

Continued
Table 4.3 Continued

<table>
<thead>
<tr>
<th>Q27</th>
<th>2</th>
<th>3</th>
<th>2</th>
<th>More about teaching the student teacher that their own learning or professional development; reflecting on what the student teacher did</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q28</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>Diversity is more connected to how student teachers learn and are accepted as individuals than about the cooperating teachers’ professional development.</td>
</tr>
<tr>
<td>Q30</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>About the cooperating teacher’s personal learning and research that helps them to do well at teaching a student teacher</td>
</tr>
<tr>
<td>Q31</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>Personal learning, research and dissemination of knowledge on the part of the cooperating teacher</td>
</tr>
<tr>
<td>Q32</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>Personal learning, research and dissemination of knowledge on the part of the cooperating teacher</td>
</tr>
<tr>
<td>Q35</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>Cooperating teacher learning about teaching candidate</td>
</tr>
</tbody>
</table>

Continued
<table>
<thead>
<tr>
<th>Q</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q36</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q41</td>
<td>1,2</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q46</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q49</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q50</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q53</td>
<td>2</td>
<td>4</td>
<td>4</td>
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Cooperating teacher learning (really hard to choose, also relates to supportive environment and reflection)

Cooperating teacher learning and sharing with colleagues

About student teacher connections (theory and practice)

More about the connections the student teacher is able to make…than the learning environment…but they’re really close, hard to decide.

About assessment of teaching

About connections and interpretations the student teacher is able to make

About connections and interpretations the student teacher is able to make
Table 4.4

Scale Organization

<table>
<thead>
<tr>
<th>New Subscale</th>
<th>Original Instrument Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Modeling of Quality classroom Pedagogies with P-12 students</td>
<td>Q1,Q2,Q3,Q4,Q5,Q6,Q7,Q8,Q9,Q10, Q11,Q12,Q13,Q14,Q39</td>
</tr>
<tr>
<td>2 Use and promotion of reflection in learning environment which is accepting of the candidate</td>
<td>Q18, Q22,Q24,Q27,Q28,Q29,Q40, Q45,Q47,Q48,Q50,Q51,Q52</td>
</tr>
<tr>
<td>3 Dedication to cooperating teaching through use of research, collaborations, and professional development</td>
<td>Q17,Q23,Q25,Q30,Q31,Q32,Q33,Q34,Q35,Q36,Q37, Q38,Q41</td>
</tr>
<tr>
<td>4 Promotes candidate understanding of/effective action involving connections between key components or stakeholders in education</td>
<td>Q44,Q46,Q49,Q53,Q54,Q55,Q56,Q57,Q58,Q59,Q60</td>
</tr>
<tr>
<td>5 Modeling of collaboration with others relevant to p-12 student learning</td>
<td>Q15,Q16,Q19,Q20</td>
</tr>
<tr>
<td>6 Technology Orientation</td>
<td>Q26,Q42</td>
</tr>
</tbody>
</table>
Research Question 4

Research question four stated “What level of reliability can be attained with this measure”? The level of reliability attained with each scale was assessed by calculation of the Cronbach alpha statistic using PASW 18.0. I examined the Corrected Item–Total Correlation for each item to be sure that each item correlated with the total, which was found to be the case. The criterion used for this assessment was a value of .3 (Field, 2009). The values in the column labeled Cronbach’s Alpha if Item is Deleted were also examined for values of $\alpha$ greater than the overall value of $\alpha$ to identify items that were strong candidates for deletion. No items were identified for removal on this basis. However, since items 21 and 43 did not load on any factor identified, they were not retained for use in the final scales. Cronbach’s alpha coefficients for each of the newly developed scales were indicative of excellent internal consistency for scales based on components 1-4, good internal consistency for scale 5 and acceptable internal consistency for scale 6. The component names, included items, and reliability statistics for each of the six identified scales are identified in Table 4.5.
Table 4.5

*Cronbach’s Alpha Reliability Statistic for Each Scale*

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<th>Original Instrument Items</th>
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<td>2 Use and promotion of reflection in learning accepting of the candidate</td>
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<td>4 Promotes candidate understanding of/effective action involving connections between key components or stakeholders in education</td>
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</tr>
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<td>5 Modeling of collaboration with others relevant to P-12 student learning</td>
<td>Q15, Q16, Q19, Q20</td>
<td>.834</td>
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Continued
Note: Since Scale 6 was composed of only two items, the correlation between the two items is presented in place of the $\alpha$ statistic.

**Research Question 5**

Research question five stated “Is there evidence of validity of the newly developed measure”? Table 4.6 presents the frequency of responses and measures of central tendency (means, standard deviations and skewness) for each item included in the instrument. Three different stems were used in the questionnaire based on the review of the literature, feedback from the panels of experts, and student teachers participating in cognitive interviews. Each candidate response was selected among a 6-point Likert-type rating scale which ranged from 1 (*Very Strongly Disagree*) to 6 (*Very Strongly Agree*). No “neutral” point was provided among the six response categories.
Table 4.6
Measures of Central Tendency of the Newly Developed Items

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<tr>
<th>Item</th>
<th>N</th>
<th>Respondent Level of Agreement</th>
<th>M</th>
<th>SD</th>
<th>Skew</th>
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<td></td>
<td>(Percent for Each Alternative)</td>
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Table 4.6 Continued

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Table 4.6 Continued

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*Note*: The response category with the highest percentage for each item is in boldface.

Descriptive statistics and the frequency distribution of candidate responses for items 61 through 67 are provided in the Table 4.7. The items included in this section were adapted from an existing measure of teacher efficacy (“Personal Teaching Efficacy Scale,” $\alpha = .74$ (Midgley et. al, 2000)). The items were worded such that this section reflects the responding teacher candidate’s perception of how his or her cooperating teacher would respond to each item. Items 62, 64, and 66 were reverse coded. Before calculation of any statistics, the scores were reversed such that high numbers correspond to higher levels of agreement with the positive wording of the statement.
Table 4.7

*Measures of Central Tendency of Items 61-67*

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>(Percent for Each Alternative)</th>
<th>M</th>
<th>SD</th>
<th>Skew</th>
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</table>

Valid N 377

(listwise)

*Note:* The response category with the highest percentage for each item is in boldface.

Descriptive statistics and the frequency distribution of candidate responses for items 68 through 74 are provided in Table 4.8. The items included in this section were adapted from an existing measure of teacher efficacy (“Personal Teaching Efficacy Scale”, \( \alpha = .74 \) (Midgley et al, 2000)). The items were worded such that this section reflects the responding teacher candidate’s perception of his or her own teacher efficacy. Items 69, 71, and 73 were reverse coded. Before calculation of any statistics, the scores were
reversed such that high numbers correspond to higher levels of agreement with the positive wording of the statement.
Table 4.8

**Measures of Central Tendency of Items 68-74**

<table>
<thead>
<tr>
<th>Item</th>
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<th>(Percent for Each Alternative)</th>
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<th>SD</th>
<th>Skew</th>
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</table>

Valid N 377

(listwise)

*Note:* The response category with the highest percentage for each item is in boldface.

Correlations between each newly developed scale and the existing measures were calculated. Although the data deviate from the normal distribution, skewness values of less than ±2.0 confirmed the appropriateness of the use of the Pearson *r* statistic. A Pearson-*r* is reported for each new subscale and for the established scale, items 61 through 67 in Table 4.9. At the *p* < .01 level of significance, each new scale is positively
correlated with the existing measure which was adapted to reflect the student teacher’s perception of his or her cooperating teacher’s self-efficacy.

Table 4.9

*Correlations between Identified Components and Personal Teaching Efficacy Scale*  
*(Cooperating Teacher Adaptation)*

<table>
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<tr>
<th></th>
<th>Comp1</th>
<th>Comp2</th>
<th>Comp3</th>
<th>Comp4</th>
<th>Comp5</th>
<th>Comp6</th>
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<td>.822**</td>
<td>.789**</td>
<td>.798**</td>
<td>.511**</td>
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<tr>
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<td>.874**</td>
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<td>.549**</td>
<td>.605**</td>
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<tr>
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<td>Sig. (2-tailed)</td>
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Table 4.9 Continued

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**. Correlation is significant at the 0.01 level (2-tailed).

*Note:* The existing measure, “Personal Teaching Efficacy Scale,” $\alpha = .74$ (Midgley, et al., 2000) is the embedded established scale used in the instrument. The items are scored on a scale from 1 (strongly disagree) to 5 (strongly agree).
Correlations between each newly developed subscale and the existing measures were calculated. The Pearson Product Moment Correlations between the new set of scales and items 68 through 74 are presented in Table 4.10. At the $p < .01$ level of significance, each of the subscales, except Cooperating Teacher Technology Orientation, has been shown to be positively correlated with the existing scale as adapted to describe the teaching self-efficacy of the responding student teacher.
Table 4.10

*Correlations between Identified Components and Personal Teaching Efficacy Scale*

*(Student Teacher Adaptation)*

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Positive significant correlations between the newly developed measure and both forms of the existing and established measure of teacher efficacy show that there is a direct association between the new scale and the measure that already exists and also supports the establishment of convergent validity for all scales except Cooperating Teacher Technology Orientation. When considered through the lens of the responding student teacher’s understanding of his or her cooperating teachers’ perceived self-efficacy, each of the new measures demonstrated stronger significant correlations. Perspectives on why this may be are presented in Chapter Five.
Chapter Five: Discussion

This chapter is arranged in five parts. First, a discussion of findings by research question is presented. In the second section, the limitations of the study are provided to provide the reader with an understanding of potential sources of error in this research. The third section presents the delimitations of the study to provide a clear picture of what was examined by means of this research and what was not. In section four, recommendations related to the research are presented. Specifically, recommendations to Standards Development Entities, Schools, Colleges and Departments of Education, P-12 Schools and their leaders, cooperating teachers and student teachers are shared. Section five shares insights related to replication and further study which may be instructive as this work is extended in future research.

The study was developed to contribute a valid and reliable measure of cooperating teachers’ enactment of NBPTS Core Propositions and ATE Standards for Teacher Educators to the field of Education. The scales were also developed to enable examination of the extent to which student teachers perceived themselves as having been helped to learn to demonstrate Performance Outcomes from the ATE Standards for Field Experiences in Teacher Education by working with their cooperating teachers. Five research questions guided the
Research Question One

The first research question that guided the study was “What items written for the instrument best represent the constructs intended by the ATE Standards for Teacher Educators, Core Propositions and ATE Performance Outcomes for teacher candidates?” Research question one was addressed by contacting three panels of five experts each to solicit feedback on preliminary items designed for inclusion in the new measure. Standards documents were used to identify experts related to each set of Standards. Internet searches provided contact information for each expert. In most cases, experts were contacted at institutional affiliations listed on their publications. Dillman’s Total Design Method which “guarantees” to result in a return rate of 75 to 80% when implemented as directed, was adapted for the purpose of soliciting feedback from each panel. Consistent with Dillman’s method, the experts were each sent the preliminary questionnaire items related to their Standards along with questions to solicit feedback. The instructions for providing feedback were clearly specified, and a postage paid return envelope was provided. The cover letter clearly described the purpose of the study and explained why the experts’ opinion was being sought was addressed specifically to each expert and signed by hand in blue ink (Dillman, 1978). A one-week reminder was sent by e-mail to all accessible experts who had not yet responded. Three weeks after the initial mailing non-responders were sent duplicate packets. Seven-week reminder packets were not sent due to the timeline of the study. The response rate from the panel of experts was
11 out of 15, or 73%. Although the response rate was not as high as those associated with some other studies, the result was reassuring particularly because some of the experts had retired since participating in the crafting of the Standards and were difficult to obtain correct addresses for (Dillman, 1978; Hoddinott & Bass, 1986).

Early in the process of soliciting feedback on the preliminary item set, I recognized a key element as missing from my strategy. Although each expert was well versed in the content of the Standards, they were not all clear on the thinking that led to the development of the items. Some of the feedback I received was rather general. Comments such as “I think you did a good job of addressing the Standards” without more specific detail in combination with one expert’s feedback that “It would have helped me to know which items were derived from which Standard” helped me to recognize that a matrix should be included in the mailed packet to clarify the logic behind the items. I believe that the addition of this step to the process of soliciting expert feedback is essential to the quality of responses elicited. This need for increased clarity in the item development process reinforced the importance of a key theme in the literature. Good communication about what teachers should know and be able to do is essential (Darling-Hammond, 1999; ATE, 1999; NCTAF, 1996). Fortunately, many of the experts were willing to either send an initial response or elaborate further upon their prior feedback provided the matrix to clarify the relations between specific items and their respective set of Standards. Based on the feedback of the panels of experts, I do believe that the items designed accurately represent the constructs intended.
Research Question Two

Research question two was, “To what extent are the items included in the new instrument clear and suitable to student teachers?” To address this question, I conducted two rounds of cognitive interviews with a total of thirteen student teachers. Initially, only one round of cognitive interviews was planned, but it was brought to my attention that it would be much easier to get in contact with student teachers twice to determine that the items were clear and understandable to them than to contact panels of experts twice to determine that the items appropriately represented the constructs intended. The two rounds of cognitive interviews were helpful to my understanding of how to write items that are suitable for student teachers (see Burroughs, 2001; Darling-Hammond, 2006). In particular, I learned that there are misconceptions held by teacher candidates with regard to the term “teacher education.” Although the term pre-service teacher education is used widely, most student teachers didn’t seem to understand that this term applies to them. “Teacher education” includes the education of pre-service teachers – program candidates, yet the student teachers interviewed tended to interpret this term as referring to the university-based professional development offerings available to practicing teachers. Candidates were able to provide relevant examples and contextual statements to support their reasoning for the selection of a response category only when they clearly understood whom to think about when drawing from their experiences in student teaching. For this reason, it was important that I remove the term “teacher education” from the items. The consistent nature of this misconception across a group of student teachers spanning a variety of programs, subject areas, and grade levels prompted me to think more deeply.
about potential reasons that teacher candidates did not see themselves as a key element of the focus of teacher education. Student teachers’ lack of understanding of the term “teacher education” may signal that they are not regularly exposed to this terminology. However, this misconception appears to be more consistent with a lack of professional identity (Korthagen, 2004). In conversations surrounding use of the term “teacher education,” several student teachers shared that they felt as though they were more of a student than a teacher at this point, and that they were in an awkward position when it comes to classroom power and control of their own learning. The candidates’ responses signal a parallel between the lack of identity development in cooperating teachers identified by Wilson (2006) and identity development in student teachers. Korthagen (2004) described identity development as inclusive of the beliefs that people have about themselves and Wilson (2006) identified identity development as related to recognition and support. Student teachers may not associate themselves with teacher education because they do not yet recognize themselves as teachers.

Many wanted to try new ideas and hone their own style as a teacher, but faced challenges from their cooperating teachers and felt bound by the perceived need to “earn a good grade” by “pleasing” the cooperating teacher. In many cases this prompted student teachers to conform to teaching styles and strategies that they perceived as not aligned to who the candidates desire to become as a teacher in the future. These descriptions from student teachers mirrored the literature on the importance of trusting relationships and findings that student teachers tend to reproduce of cooperating teachers’ behaviors (Hall & Davis, 1995; Lindsey, 1966; Oberski, Ford, Higgins & Fisher, 1999; Price, 1961; see
also newly developed Scales 1 and 2). This research adds to this literature by presenting a fear of impacts on grades as a possible reason for student teachers’ replication of their cooperating teachers’ practices. The concerns expressed by student teachers may indicate that the trust, two way dialogue and working relationships described by ATE (1999) may not be developed to levels that promote student teachers’ confidence to implement self-selected instructional strategies (Scale 3).

As student teachers provided descriptions of how they thought through specific items to select a response category, many stories were shared which could serve as examples of the varied levels cooperating teachers expertise related to teacher education. Student teachers shared personal stories of the meanings they took away from specific experiences with cooperating teachers. Student teachers also shared how these experiences influenced the teaching methods they chose and how they came to see themselves as developing educators. The stories shared by the student teachers who participated in the cognitive interviews lent support to the ideas that student teaching experiences vary widely and that cooperating teachers enact very different roles in their work with candidates (Boudreau, 1999; Bullough, 2005; Feiman-Nemser, 2001; Ford, Higgins, & Fisher, 1999; Hall & Davis, 1995; Korthagen, 2004; Spencer, 2007).

From candidates’ in-depth responses, I could tell that they had a clear understanding of what the items meant. I found that some of the richness of candidates’ responses stemmed from their attempts to clarify their lived experiences for me and to paint a picture of what it was like to walk in their shoes in the classrooms. Candidates engaged in much deeper reflection than I initially expected. This was reassuring about
candidates’ ability to reflect on their own teaching (ATE, 1999; Carnegie Corporation, 2001). For example, many of their explanations described a classroom event, and what they did in response to that event. Most followed these statements with examples of what they would have done under different circumstances. Student teachers also included reasoning about how they assessed the context of their teaching environment in their explanations (Scale 2).

From these conversations with student teachers, I learned about the importance of providing more concrete examples. I found that the more vague examples were, the harder the items were to interpret. In response to items that were more vague, student teachers tended to provide sets of examples that they thought could fit the item rather than honing in on just one key example or theme that spanned their student teaching experience. This led me to refine the items to include more action words and fewer large conceptual ideas. The outcomes of the cognitive interviews supported the existing knowledge that carefully selected reflective dialogue is important to student teachers’ ability to apply their experiences in schools to future improvements in professional practice (Darling-Hammond, 2003, 2006; Ridley, Hurwitz, Hackett & Miller, 2005)

Conversations during the cognitive interviews also reassured me that items applied to a range of grade levels and disciplines, which made me more confident about the utility of the measure. In the process of answering research question two, I have collected data that makes me confident that the items included in the measure as designed are clear and appropriate to student teachers. I have also found new research questions and aims for future work.
Research Question Three

Research question three was “What interpretable underlying structure exists among the variables examined with this measure?” After revisions based on feedback from the panels of experts and cognitive interviews with student teachers, the measure was administered to 407 student teachers. Each student teacher completed the full set of items. To address research question three, a Principal Components Analysis (PCA) was performed to identify the number of dimensions existing within the set of items and which items loaded on which dimension.

In the item development phases of the study, the items were grouped by categories based on the set of Standards from which they were derived. The Standards were paraphrased, separated into individual ideas through the removal of commas, and the removal of “and”s and ampersands. Items were then improved upon through incorporation of the feedback from both panels of experts and student teachers engaged in cognitive interviews. No formal hypotheses were generated with regard to how many constructs were represented or which items represented specific constructs.

The PCA identified six components which explained 67.349% of the variance in the data. Components were identified by examination of the factor loadings for each item. Items with factor loadings of .4 or above were retained on the factor. In cases in which items loaded on more than one component, I reviewed each item to determine the most appropriate component based on face validity. Items that did not load on any factor were not included in the final measures.
Twenty of the sixty items developed loaded on more than one component. For each of the items, I had to first identify what the items loading on a factor had in common. To determine the appropriate placement of crossloading items, I then compared the teaching or learning event described by a particular crossloading item to the overall theme of each component on which it loaded. There were nine items that loaded on both component two and component three. Component two was named “Use and promotion of reflection in a learning environment which is accepting of the candidate.” Component three was identified as “Dedication to cooperating teaching through use of research, collaborations and professional development.” I was initially troubled by nearly half of the crossloading being accounted for between these two factors. I was also concerned because these items (Q23, Q27, Q28, Q30, Q31, Q32, Q35, Q36 and Q41) were developed based on the ATE Standards for Teacher Educators. The experts consulted regarding these items expressed some concern that candidates may not know enough about their cooperating teachers’ professional development or roles in teacher education.

As I explored possible reasons for the crossloadings, I recognized that each crossloading item was connected to challenges to effective cooperating teachers identified in the literature. Understanding candidates as individuals, embracing their methods of learning and development, and providing for effective forms of assessment were identified as key challenges to cooperating teachers (Feiman-Nemser, 2001; Korthagen, 2004). In addition, the literature suggests that provisions for cooperating teachers’ professional learning options related to teacher education and campus-based faculty as limited (Bullough, 2005; Darling-Hammond, 1999; Guyton & McIntyre, 1990;
Huling, 1998; Kent, 2006; Koskela & Ganser, 1995; Slick, 1995; Zeichner, 1992). This suggested that the roles of cooperating teachers in relation to understanding and reflecting upon candidate learning, assessment, developmental strategies and differentiation techniques may be inconsistent or poorly defined across these candidates’ experiences.

Alternatively, these crossloadings may have resulted from potential overlaps between what cooperating teachers do with individual student teachers and what they do in the wider context of their professional development, research, and collegial interactions. In future research, crossloadings might be explained through confirmatory factor analysis which may reveal a higher order factor. In the present study, I found that the most important characteristic that distinguished the items centered upon the person to whom the described learning was directed either the student teacher, or the cooperating teacher and his or her colleagues. Perhaps more specific wording to provide a context for selected items would have helped distinguish them from one another.

The potential for rewording for item specificity was most evident in Item 41, which was stated as “My cooperating teacher contributes to improving the profession of teaching.” This item loaded on each of the first three components. In retrospect this crossloading could be expected because the statement as worded could fit with modeling of pedagogies for p-12 learners, reflecting in supportive contexts, or cooperating teachers’ own professional learning and professional collaborations. Previous research proposed that student teachers felt supported in classroom contexts in which cooperating teachers used modeling, reflection and supportive dispositions (Graham, 2006). My findings extend this existing knowledge by suggesting a possible relation between
modeling, support and reflection and student teachers’ impressions of cooperating teachers’ contributions to the profession overall. Ultimately, I chose to place this item on the third factor because of its intended reference to research and collaboration consistent with the original Standards’ notion of scholarship (ATE, 2008) and the interpretation consistently presented by candidates during the cognitive interviews. This item may serve as a broad-spanning indicator of student teachers’ perceptions of their cooperating teacher or alternatively could be reworded to address specific contexts of cooperating teachers’ contributions.

Additionally, item 28, which loaded nearly equally on factors two and three, was worded to state “My cooperating teacher demonstrates that he or she values cultural diversity”. This item was ultimately placed with items relating to the environment established to support the student teacher’s learning; however, student teachers in the cognitive interviews also described their understanding of their cooperating teachers’ feelings toward cultural diversity as based on how cooperating teachers treated them, students and colleagues. Some also shared that their understanding of their cooperating teachers’ feelings about diversity were best demonstrated by the statements they shared with others when speaking about students from diverse backgrounds when students were not present.

Based on the literature which places student teachers’ diversity experiences in the context of modeling and relating to diverse student groups (Darling-Hammond, 2006; ODE, n.d.), I would have expected this item to load on component one. My research suggests, however, that cooperating teachers’ responses to cultural diversity in more
varied contexts is relevant to student teachers’ perception of the environment in which they learn to teach. This finding underscores the importance of recognizing individual differences. In 1960 and again in 1986, Sarason and colleagues identified the recognition of individual differences in student teachers as a challenge in cooperating teaching contexts. While current Standards in education (ATE, 1999; NBPTS, 2008) advocate for responsiveness to varied forms of diversity, my research suggests that increased or clarified modeling of appreciation for the cultural diversity among p-12 learners may be warranted.

Two items developed for the measure, Q21 and Q43, did not load on any factor. Item 21 was worded to state “My cooperating teacher models use of community resources to help students learn”. Item 43 stated “My cooperating teacher encourages me to consider how experiences I create for students relate to their lives”. Both items represented constructs important to teaching and modeling of quality instruction (ATE, 2008; Bond et. al, 2000; Gunter et. al, 2005; Koerner & Abdul-Tawwab, 2006; Ladson-Billings, 1995; NBPTS, 2008). I suspected that these items might load on a factor together, perhaps along with the two technology items to represent an integrative and collaborative use of available resources.

As technology becomes an increasingly important resource which connects classrooms to the wider community, I suspected that student teachers would be highly alert to technology use, particularly in relation to forging connections. Levine (2010) describes both today’s students and teacher candidates as “digital natives” who seek an education that provides for interactivity, collaboration, and individualization (p. 20).
Technology use enables instruction to extend far beyond the classroom to expose students to people, places, and resources that were previously inaccessible (Levine, 2010). The highest factor loading for item 21 was .377 on factor four which centered upon connections with stakeholders. The highest factor loadings for item 43 were .385 and .384 on factors six and two, respectively. I perceive these items as more related to technology but also acknowledge that reflection and support are key to effective technology implementation.

In the open-ended narrative portion, some student teachers’ comments included statements that their cooperating teacher rarely if ever used resources or guests external to the classroom as part of their instruction and that the cooperating teacher did not assist them in considering how the content they teach relates to students’ lives. Because most student teachers selected a response category indicating that agreement with the item, I was surprised to find several written descriptions which indicated that student teachers perceived their cooperating teacher as very minimally committed to making connections between academic content and their students’ lives. The disconnects between teachers and other potentially helpful individuals and resources coupled with time constraints (Bullough, 2005; Hastings, 2004; Koster et al., 1998; Lortie, 1975) may lead to inconsistent connections to community resources, knowledge of family perspectives and implementation of technological tools to foster such aims. The finding that items 21 and 43 did not load on any factor suggests a need for further exploration of how and the extent to which connections to students’ lives are built and community resources are employed in student teaching contexts. Since explicit focus is placed on teachers’ ability
to make connections to students’ lives and utilize resources external to the school in the NBPTS assessment process, it may be wise to utilize NBCTs in teacher leadership capacities to lead examination and professional development in these areas (Bond et.al, 2000; Frank et. al, 2008; NBPTS, 2008, Press Release).

By conducting the PCA, I also sought to identify relations between actions of cooperating teachers which reflect NBPTS Core Propositions and ATE Standards for Teacher Educators and to determine how these actions related to student teachers’ learning to demonstrate the Performance Outcomes from the ATE Standards for Field Experiences in Teacher Education. Whereas each of the identified components made sense conceptually, I was surprised to find that there wasn’t as much overlap as I expected among the items derived from different sets of standards. One possible reason for this could be the perspective from which each set of standards was addressed in the wording of the items.

Whereas cooperating teaching actions and roles have been identified in the literature as unclear (Clarke, 2001; Hayes, 1960; Koskela & Ganser, 1995; Reynard, 1963; Spencer, 2007), this study has identified six components of cooperating teaching actions. It is well noted in the literature that student teachers often have difficulty knowing what to “look for” when conducting observations and engaging in reflection (Darling-Hammond, 2006; Hall & Davis, 1995).

The cooperating teacher and the supervision he or she provides has been identified as a key element of teacher preparation which is has an essential impact on the professional lives of teachers (Ball, & Forzani, 2010; Dunne & Bennett, 1997; Glickman
& Bey, 1990) The alignment of standards has been identified as essential to the cohesiveness and compatibility of efforts to advance teacher education (Vaughan, 1988). Through the use of a standards-based approach to instrument development, this study contributes connections between what is known through the literature about cooperating teaching and student teacher learning to observable actions recognized by student teachers. In this way, a more unified framework for reflection and data collection involving student teachers is provided. Component 1, which was focused on the modeling of classroom pedagogies, was mainly composed of items derived from Core Propositions with the exception of item 39 “Promotes high quality education for all students.” Component 2, which focused on use and promotion of reflection in learning environments accepting of the candidate, did include at least one item from each of the three sets of standards. The identification of components one and two mirrors the performance based and developmental frameworks of supervision identified by Housego and Grimmett (1983) but identifies that student teachers find it important that individual cooperating teachers utilize both frameworks in their actions with student teachers. The items included in the measure based on component two, expand upon the earlier recognition that cooperating teachers set the intellectual and affective tone of field-based learning (Feiman-Nemser & Buchman, 1987) and that content knowledge, along with analysis and reflection are key components of teacher learning (Zeichner, 2005). These items identify specific aspects of cooperating teaching including an explicit focus on reflection, attention to cultural diversity and flexibility based on the individual candidate’s learning needs. Component 3 was primarily composed of items derived from
the ATE Standards for Teacher Educators with the exception of item 17, which stated “My cooperating teacher models how ongoing teacher learning improves teaching effectiveness” and was derived from NBPTS Core Propositions. These items suggest activities that may be employed to remedy the lack of preparation and renewal associated with cooperating teaching roles (Clarke, 2001, Koskela & Ganser, 1995, Spencer, 2007). Component 4, with a focus on candidate understanding and effective action involving stakeholders in education, was composed entirely of items from derived from the Performance Outcomes for Field Experiences in Teacher Education, with the exception of item 44. Item 44 stated “My cooperating teacher encourages me to consider how my teaching may be interpreted by families,” and was derived from the ATE Standards for Teacher Educators. It has been stated that student teachers’ learning through coursework is inconsistent with the experiences and modeling experienced in the field (Bowers, 1994; Starnes, Saderholm & Webb, 2010). Because it is known that cooperating teachers are an important part of student teachers’ socialization into the profession and learning of tricks of the trade (Boudreau, 1999) cooperating teachers have the unique opportunity to show student teachers firsthand how theories can be applied, how two-way dialogue with families yields data useful in instructional decision-making and how partnering with colleagues and the community improves teaching practice (Gimbert, Desai, & Kerka, 2010). The identification of this component of cooperating teachers’ work may serve as an early step in unifying the work of campus-based and field-based teacher educators to promote comprehensive and cohesive learning experiences for candidates (Darling-Hammond, 2006) Component 5, which focused on modeling of collaboration with others
relevant to p-12 student learning, was composed entirely of items derived from the NBPTS Core Propositions. Identification of these roles in cooperating teaching helps to break down the teacher isolation associated with decreased teacher ability and desire to stay in the profession (Gimbert, Desai, & Kerka, 2010; Lortie, 1975; NCTAF, 2003b). Component 6, which focused on Technology Orientation, consisted of only two items but included items derived from both the ATE Standards for Teacher Educators and ATE Performance Outcomes for Field Experiences in Teacher Education. Since technology is able to provide students and teachers linkages to resources and information far beyond the scope of their classrooms (Levine, 2010) it is likely to increase in use as a tool for teaching both p-12 students and student teachers.

Perhaps the identification of dimensions was influenced by my choice of item stems that prompted student teachers to consider experiences related to modeling with p-12 students, demonstration with student teachers, or candidates’ own learning. One way to further explore whether overlaps exist between the items when considered from different perspectives would be to engage student teachers in interviews in which they are provided sets of items and asked to identify examples of cases in which their cooperating teachers enact each teaching action in contexts in which p-12 students are the “learners,” in contexts in which themselves as student teachers are the learners, and in contexts where cooperating teachers themselves or the wider education community is the “learner”. Such research methods are likely to provide highly detailed situational examples, including descriptions of interactions which reveal how cooperating teachers work with various individuals and groups important to education.
Research Question Four

Research question four stated “What level of reliability can be achieved with this measure?” To address this research question the level of reliability attained with each scale identified was assessed by calculation of the Cronbach alpha statistic using PASW 18.0. Cronbach alpha reliability statistics measure internal consistency and typically range between 0 and 1. George and Mallery (2003) provide rules of thumb for assessment and description of alpha values. These rules were used to evaluate each newly developed scale. Each scale was composed of the items that loaded on only that factor along with items which were placed with the factor after decision-making regarding crossloading items. Items 21 and 43, which did not load on any factors, were not included among the final scales.

Overall, the newly developed measures lend important contributions to what is known about cooperating teaching. The measures enable quantitative examinations of cooperating teachers’ roles and actions when working with student teachers. To date, studies of cooperating teachers and their work with student teachers have in large part been based on qualitative examinations of small numbers of cooperating teachers. Assessment of the internal consistency of the measures identifies whether the measures are stable. Higher stability increases their likelihood to measure the constructs consistently over time. The studies typically focus on individual experiences of the individual cooperating teachers or cooperating teaching pairs through analysis of journals or interviews (Boudreau, 1999; Koerner, 1992). A key contribution of this study as a whole is the provision for large-scale systematic examinations of the work of cooperating
teachers from the perspective of student teachers. The identification of components of cooperating teaching and the development of reliable measures of those components enables student teachers to relate reflect upon and provide feedback on specific standards-based aspects of cooperating teaching. Used in conjunction with the procedures used to date, quantitative measures can allow for efficient comparisons of cooperating teaching across contexts which adds to what is known through the current descriptive examinations of lived experiences.

Because the measures developed were derived from national standards and frameworks in education, this study provides for the expansion of what is known about cooperating teaching actions through the description and comparison of standards-based experiences across states. The identification of six components of cooperating teaching actions also serves to clarify, synthesize and add to what is known about field-based teacher education. The development of reliable measures of each component, serves to advance possibilities for assessing these actions.

The scale based on Factor 1 was named “Modeling of Quality Classroom Pedagogies with P-12 students”. Fifteen items (Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14 and Q39) were included on this scale. The calculated Cronbach alpha statistic for this scale was .952, a value that is indicative of “excellent” internal consistency.

The scale based on Factor 2 was named “Use and promotion of reflection in learning environment which is accepting of the candidate”. Thirteen items (Q18, Q22, Q24, Q27, Q28, Q29, Q40, Q45, Q47, Q48, Q50, Q51, Q52) were included on this scale.
The calculated Cronbach alpha statistic for this scale was .956, a value that is indicative of “excellent” internal consistency.

The scale based on Factor 3 was named “Dedication to cooperating teaching through use of research, collaborations, and professional learning”. Thirteen items (Q17,Q23,Q25,Q30,Q31,Q32,Q33,Q34,Q35,Q36,Q37, Q38,Q41) were included on this scale. The calculated Cronbach alpha statistic for this scale was .960, a value that is indicative of “excellent” internal consistency. The identification of this set of items as a reliable measure provides for focused examination of currently unknown sources of cooperating teacher knowledge related to teacher education, resources utilized by cooperating teachers in cultivating further learning for themselves and others, and extents to which cooperating teachers participate in the ongoing improvement of teacher education.

The scale based on Factor 4 was named “Promotes candidate understanding of/effective action involving connections between key components or stakeholders in education”. Eleven items (Q44,Q46,Q49,Q53,Q54,Q55,Q56,Q57,Q58,Q59,Q60) were included on this scale. The calculated Cronbach alpha statistic for this scale was .932, a value that is indicative of “excellent” internal consistency.

The scale based on Factor 5 was named “Modeling of collaboration with others relevant to p-12 student learning”. Four items (Q15,Q16,Q19,Q20) were included on this scale. The calculated Cronbach alpha statistic for this scale was .834, a value that is indicative of “good” internal consistency.
The scale based on Factor 6 was named “Technology Orientation”. Two items (Q26,Q42) were included on this scale. The calculated correlation between these two items was .630, a value that is indicative of “acceptable” internal consistency. This scale had the lowest internal consistency of the scales identified. This is likely due to the limited number of items loading on this scale (Gliem & Gliem, 2003). Additionally, it is important to note that while high values of Cronbach alpha statistics indicate good internal consistency of the items on scales, it does not mean that the scale is unidimensional. Factor analysis is used to determine the dimensionality of scales. This procedure was used to identify scales on which Cronbach alpha statistics were calculated. Individual scales, however, may reveal one or more dimensions when analyzed with factor analysis techniques.

**Research Question Five**

Research question five stated, “Is there evidence of validity of the newly developed measures”? To address this research question, I examined the extent to which the newly developed measures correlated with an existing measure of teacher efficacy. The existing measure I adapted was designed to measure personal teaching efficacy and had an acceptable reported value of alpha = .74 (George & Mallery, 2003; Midgley et al., 2000). I adapted the existing scale in two ways and included both forms in the administered questionnaire. In the first adaptation, I changed the wording of the existing scale such that student teachers’ responses would reflect their perceptions of how his or her cooperating teacher would respond to each item. This was designed to provide a measure of the student teacher’s perception of his or her cooperating teacher’s efficacy.
In the second adaptation, the wording of the existing scale was changed to reflect the teacher candidate’s perception of his or her own teaching efficacy. It is known that student teachers tend to emulate their cooperating teachers’ teaching actions (McCaulay, 1960; Price, 1961), possibly due to the hierarchal relationships present in the student teaching context (Graham, 2006; Veal & Rikard, 1998) Research also shows that teacher efficacy is flexible in the early years of teaching and higher during student teaching than first year teaching (Woolfolk Hoy & Burke-Spero, 2005). Their work also reveals that teacher efficacy in the first year is connected to the level of support received (Woolfolk Hoy & Burke-Spero, 2005).

I decided to include both adaptations of the existing scale, because I wanted to be able to determine whether the student teachers’ responses were more aligned with their own efficacy or that of their cooperating teacher. I suspected that there may be differences in student teachers’ responses that bore relationships to their own efficacy levels. For example, it could be possible that student teachers with very low personal teaching efficacy would provide either much higher or much lower ratings of their cooperating teachers. My primary purpose in including an established measure was to enable me to determine whether the scales I developed were consistent with an established reputable measure. Since the teaching actions I examined were identified as positive contributors to learning (ATE, 1999; ATE, 2008; Ball & Forzani, 2010; Koerner et al., 2002; NBPTS, 2008; NCTAF, 1996), a measure that includes them should be positively correlated with an established measure of teaching efficacy (Beer & Moneta, 2010; DeVellis, 2003). Examination of correlations to teacher efficacy was appropriate
since this construct has been identified as related to such essential educational outcomes including teachers’ commitment and persistence and students’ achievement, motivation and self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2001).

Concurrent validity, a form of criterion validity, is a measure of the agreement between the results obtained by the newly developed measure and an established measure (Beer & Moneta, 2010; DeVellis, 2003). The concurrent validity was quantified by the calculation of the correlation coefficient between the two sets of measures in the same group of participating student teachers. Pearson-r correlations were used to identify relations between each newly developed scale and the adaptations of the existing measure. At the $p<.01$ level of significance, five of the six newly developed scales were shown to be positively correlated with the adaptation of the existing measure which reflected the student teachers’ personal teaching efficacy. Cooperating Teacher Technology Orientation, the scale based on factor six, was not correlated significantly with student teachers’ personal teaching efficacy. Based on the contrasts identified in the literature between the technology orientation of today’s p-12 learners and teacher candidates and practicing teachers (Levine, 2010), this outcome could be expected. This scale also evidenced the lowest internal consistency. At the $p<.01$ level of significance all of the six newly developed scales were shown to be positively correlated with the adaptation of the existing measure which reflected the student teachers’ perception of their cooperating teacher’s personal teaching efficacy. During the initial construction of the questionnaire, I debated on whether or not to include both adaptations of the existing measure in the instrument as it would be distributed to participating student teachers. In
retrospect, it was beneficial to include both adaptations because of the new knowledge it lent to the understanding of the relation between student teachers’ perceptions of cooperating teachers’ teaching actions and efficacy. At first, I was troubled by the much lower correlations between the newly developed scales and the student teachers’ personal teaching efficacy. After more thoughtful consideration, I realized that this was to be expected. All of the items developed for the new measure asked about the teaching actions of cooperating teachers and how cooperating teachers assist student teachers in their development as educators. However, only through the adaptation of the existing measure, which focused on student teachers perceptions of their own personal teaching efficacy, did I inquire about the student teachers’ own teaching. Because of the focus of the other items, it can be expected that student teachers’ responses about their own beliefs would not necessarily be well aligned to other sections. It was interesting to note that student teachers did not consistently represent themselves as similar to their cooperating teachers with regard to personal teaching efficacy whereas the literature identifies their teaching actions as similar to those they observe in cooperating teachers (McCaulay, 1960; Price, 1961). Several comments suggested that student teachers believe that over time they can have important positive impacts on the lives of their students and that they strive to now, but are aware that it will take time for their maximal potential to be realized.

It was reassuring that student teachers’ perceptions of their cooperating teachers’ personal teaching efficacy displayed significant positive correlations with the new scales because since the other items explored the cooperating teachers’ actions in support of p-
12 student and candidate learning, it would be expected that these measures would align
with their overall efficacy with regard to teaching. Significant positive correlations
between the new measures and student teachers’ perceptions of their cooperating
teachers’ efficacy based on an adaptation of an existing measure are an indicator of the
validity of the newly developed scales.

**Limitations**

The following section describes the limitations of the study. Limitations brought
about by the process through which the data was collected and analyzed are clearly
articulated to provide the reader with an understanding of potential sources of error.
These sources of error may account for incomplete or inaccurate interpretations of the
results because of issues relating to data collection and analysis methods.

1. Due to the research design employed, results obtained from the study are only
generalizable to student teachers who actually completed the questionnaire (Ary
et. al, 2006). This study focuses only on the perceptions of current student
teachers.

2. The quality of student teacher responses may have been limited by time
constraints. Student teachers spend limited time in required meetings which often
occur in the evenings after a complete workday. Student teachers are also likely to
be expected to accomplish other goals within the same class session allotted to the
completion of the questionnaire.

3. Participant ability and motivation to respond may have been limited by the length
of the questionnaire (DeVellis, 2003).
4. The administration of the questionnaire may have limited the extent to which the student teachers were able to explain their reasons for selecting a specific level of agreement with a statement. It is assumed that in cases in which student teachers intended to provide additional information to explain or support their responses, they used the space provided to do so.

5. The findings of the study may be impacted by the willingness of student teachers to respond to the statements candidly because of its administration prior to the assignment of their final grade for student teaching.

6. The ability to gather information about student teachers’ perceptions was dependent on my ability to craft statements using terms student teachers understand and have sufficient knowledge about to respond while maintaining the focus of the Standards and Core Propositions from which the items were derived.

7. I cannot determine all potentially influential background experiences of the student teachers who respond to the questionnaire. Perceptions may have been influenced by memory. For example, experiences that stood out to candidates may have been over-represented, whereas less memorable experiences may have been omitted from consideration while candidates responded.

8. I must rely on the clarity of the directions developed for the instrument and the clarity and completeness of the administration script developed to provide all necessary information to respondents.

The potential for responding student teachers’ engagement in multiple studies as a result of the administration of the instrument near the close of the student teaching
experience may represent an internal validity concern in that the subjects may have formed an opinion of what the faculty members “want to hear” and may respond to questionnaires accordingly (DeVellis, 2003).
Delimitations

The following section describes the delimitations of the study. This section is intended to provide the reader with a clear picture of what was examined by means of this research and what was not. In the development and validation of the instrument a careful and systematic approach to questionnaire design was employed.

1. In this study, I focused only on student teachers completing their student teaching field experience during the 2008-2009 and 2009-2010 academic years.

2. Only student teachers enrolled in initial teacher licensure programs were included in the development of the instrument.

3. The development of the instrument took into account the perceptions of only those student teachers responding to the questionnaire, not the perceptions of teacher candidates at other points within the programs, or those who declined to respond to the questionnaire.

Contributions and Recommendations

The newly developed and validated scales hold promise as a tool for the collection of key data to guide improvements by organizations and individuals who provide educational services. Organizations include standards and policy development entities, Schools Colleges and Departments of Education, and p-12 schools and districts. This study informs policy setting organizations such as the Association of Teacher Educators, the National Council for Accreditation of Teacher Education, and State Departments of Education to facilitate awareness of key elements of student teaching as
perceived by responding experts and student teachers. Use of the new scales will yield data which advances alignment of existing frameworks related to teaching and learning and provides for increased consideration of an essential viewpoint, the perspective of the student teacher, as the consumer and product of teacher education.

Individuals connected to the delivery of educational services also benefit from this research. Individual stakeholders include Program faculty, Field Supervisors, Cooperating Teachers, colleagues of cooperating teachers and pre-service teachers. In the section that follows, I focus on cooperating teachers and student teachers in particular. Those engaged in reflection and individual learning such as cooperating teachers and student teachers are likely to be positively impacted and/or prompted to take action in response to the information gained through use of the newly developed measure.

**Standards Development Entities**

Standards development entities such as the Association of Teacher Educators, the National Board for Professional Teaching Standards and state and local boards of education can gain insights into key similarities and differences between intended and implemented functions of Standards through this research. This work makes four key contributions to Standards development entities. It has been noted that “failure to align one set of standards with related standards can result in confusion and incompatibility of efforts”(Vaughan, 1998, p.6). The set of scales developed serve not only as assessment and reflection tools which elicit feedback from student teachers, but also as an early point of discourse among the policy-oriented entities. Relations existing among data obtained through the use of the new scales may identify new applications for existing Standards
and frameworks. For example, correlations in the data resulting from use of the measures may identify teachers’ strengths in enactment of one set of standards that are likely to assist them in acquiring a set of skills relevant to a related set of standards. Professional learning opportunities can be structured that align the frameworks to promote teacher learning (Ball & Forzani, 2010).

Secondly, the development of valid and reliable measures enables the fit between intended and implemented functions of the Standards to be assessed. Whereas the instrumentation process identified overlaps in the content of the Standards and frameworks, the resulting measures can be used to assess the extent to which implementation occurs. Existing studies related to ATE Standards for Teacher Educators have examined the actions of university-based teacher educators (Creeley, Davis, Jornson-Naden, Korkatsch-Groszko & Bercik, 1999; Klecka, Donovan, Venditti & Short, 2008). This work contributes a valid and reliable tool for the addition of student teacher perspectives and examinations of cooperating teaching roles to what is known about implementation of these Standards in the field-based context of student teaching. Pairing the use of the measures developed with classroom observations such as those utilized by Pool and colleagues (2001) is likely to further illuminate connections between teacher abilities and enacted roles. Research that pairs use of the measures with classroom observations may also yield more clarified descriptions of authentic learning experiences for student teachers as perceived by key stakeholders (NCATE, 2008). Examination of such relations may also be a useful source of early data for redefining or aligning standards to enhance learning for all students and the development of funding decisions.
and professional learning initiatives in education. Disconnects such as those identified by Pool (2001) and others may be addressed through standards entities’ prompting of jointly designed professional development initiatives targeted toward specific aspects of cooperating teaching that are identified to be of concern.

The third key area in which this study may be useful to standards development entities is by allowing for comparisons in the enactment of the standards generated by the entities across settings on the basis of demographic characteristics including preparation for teacher educator roles. The measures developed can be used in conjunction with the collection of specific demographic information (e.g. Teacher preparation institution, type of school district, participation in varied types of professional learning related to teacher education, route to the teaching profession etc.) which may identify existing strengths or challenges in preparing educators for cooperating teacher roles. Knowledge of how strengths and challenges evidenced in cooperating teaching map onto preparation approaches, is likely to be a positive early step toward addressing widespread criticisms of student teaching (Guyton & McIntryre, 1990; Levine, 2006; Watts, 1987).

Additionally, through the recognition of the overlaps and the articulation and implementation of the Standards, entities can more productively integrate their efforts and advocate for changes that promote sustained impacts on p-12 learners. Through partnerships, standards entities may work with one another, with universities and with p-12 schools to craft school-based embedded avenues for teacher learning. Learning opportunities integrated with the ongoing nature of an educators’ work have been identified as having impacts on classroom instruction (Cross City Campaign, 2005;
Fullan, Hill & Crevola, 2006). Structured partnership with colleges and p-12 schools, funding opportunities, and professional learning guidelines may serve as starting points to more productively and integratively advocate for sustained impacts on p-12 student learning. Since educators impacted by the frameworks examined may progress in a traditional manner from candidate, to teacher, to teacher educator (Zeichner, 1992), a progressive continuum of clear expectations with areas of overlap for feedback, practice, and increasing levels of challenge may be adopted to promote alignment and scaffolding across known career trajectories.

**Schools, Colleges and Departments of Education**

This research, in particular, the development of the set of measures, makes three key contributions to schools, colleges and departments of education. Each contribution centers upon evaluation of program quality to promote improvements and alignment of programmatic efforts. First, the development of the measures enables schools, colleges and departments of education to gain important data about their cooperating teaching pools. Secondly, the programs can directly gather candidate feedback on their field-based experiences through the use of the measures developed. Additionally, use of the measures developed provide schools, colleges and departments of education with an indication of the extent to which candidates feel prepared to demonstrate key competencies they will use in the teaching profession.

Currently, a great focus is placed by Standards Development entities on providing Colleges, Schools and Departments of Education with integrated and cohesive
frameworks for what units, programs, and people should know and be able to do.

Recently, NCATE and TEAC have proposed a consolidation which would result in a single entity responsible for accreditation in the field of teacher education, CEAP (NCATE/TEAC, 2010a).

NCATE and NBPTS have also recently demonstrated the importance of alignment (NCATE, 2010b). The NCATE review process currently examines aspects of teacher education units’ functioning directly related to candidate experiences and performance to make accreditation decisions. The areas examined by NCATE for continued accreditation are represented along six standards: Content Knowledge, Skills and Professional Dispositions, Assessment System and Unit Evaluation, Field Experiences and Clinical Practice, Diversity, Faculty Qualifications, Performance and Development, and Unit Governance and Resources (NCATE, 2007). Use of the measures developed in this study can contribute to programs’ accreditation aims. Additionally, NCATE reports that it strongly encourages accredited institutions “to use the core propositions of the National Board as a foundation, especially for advanced masters' degree programs” (NCATE, 2010b, ¶4). Thus, the identification of how cooperating teachers’ actions are perceived by student teachers in relation to Core Propositions may further support the collection and analysis of relevant data.

An additional entity related to teacher education, INTASC, the Interstate New Teacher Assessment and Support Consortium, has placed a focus on aligned and developmental approaches to teacher education. Programs used INTASC Standards as
one framework for what beginning teachers should know and be able to do. INTASC has recently changed its name to InTASC, the Interstate Teacher Assessment and Support Consortium to reflect a unified standard for performance “that will look different at different developmental stages of the teacher’s career” (CCSSO, 2010, p.3). Focused on the p-12 level, this transition mirrors the developmental standards I envision which would lend focus to education and encompass teaching contexts from student teaching (and earlier placements) through teacher educator roles. Development of the new measures serves to include cooperating teachers, a vital component of teacher education among foci of the conversations among program faculty as they begin to align programs and courses with the forthcoming expectations in teacher education. The potential for overlap between the measures developed and the new InTASC Standards appears promising based on similarities between InTASC Standards and items derived from NBPTS Core Propositions and Performance Outcomes from ATE Standards for Field Experiences in Teacher Education. Further study of how the new measures map onto the new InTASC Standards is warranted. Through the use of the new scales in multi-term studies, future research may reveal whether use of the tools together may identify how cooperating teachers influence candidate demonstration of InTASC Principles throughout their career paths.

The development of the measures enables schools, colleges and departments of education to gain important data about their cooperating teaching pools. This supports units’ ability to demonstrate fit with several NCATE Standards. Related to Field
Experiences and Clinical Practice, the use of the measures assists programs to “evaluate field experiences and clinical practice (student teaching) so that teacher candidates and other school professionals develop and demonstrate the knowledge, skills, and professional dispositions necessary to help all students learn” (NCATE, 2008, ¶2). Coupled with classroom data collection and/or candidate reflective journals, use of the measures could also assist in documenting candidates’ and cooperating teachers’ teaching actions related to the diversity standard.

Likely most importantly, use of the tools assists programs and units in assessing and documenting performance, qualifications and development of its clinical faculty (NCATE, 2008, Standard 5). Through use of the measures in multiple terms, programs will be able to determine the extent to which patterns related to cooperating teachers’ enacted teacher educator roles exist. Identified professional development needs can then be addressed in a clear and consistent fashion. Data obtained from use of the measures will provide participating programs early insights on how candidates perceive student teaching with the current cooperating teaching pool. Use of the measures in this way contributes to units’ ability to assess cooperating teachers as an essential component of the “personnel resources” described in Standard 6 (NCATE, 2008). Used in conjunction with other placement data, such as professional development records, coursework and NBCT status, programs may gain insights into student teachers’ perceptions regarding specific clinical faculty. This is likely to be a valuable resource since feedback is often absent, but is desired by cooperating teachers (Clarke, 2007).
Also related to consideration of cooperating teachers as a critical personnel resource, programs may utilize the scales to identify relationships which support the formulation of more strategic plans for the selection and training of cooperating teachers. Knowledge of teacher educator actions associated with maximized student teacher learning can assist schools, programs and departments of education in the design of degree programs, continuing education offerings and/or cooperating teaching seminars that focus specifically on the knowledge, skills and dispositions identified to enhance practicing teachers’ effectiveness as teacher educators. Such actions may to increase p-12 teachers’ motivation to serve as clinical faculty through the reduction of challenges to effective cooperating teaching identified in the literature (Clarke, 2001, 2007; Koskela & Ganser, 1995; Reynard, 1963; Spencer, 2007). With focused assessment, and professional learning, cooperating teachers are likely to be more able consistently advance progress toward programmatic goals for candidate learning (Clarke, 2007).

Secondly, program faculty can directly gather candidate feedback on their field-based experiences through the use of the measures developed. Many programs’ mission statements and conceptual frameworks place emphasis on student learning as well as candidate reflection, collaboration, and connections to the larger community (Antioch University Midwest, 2010; University of Dayton, 2010; Wright State University, 2006). Key criticisms of teacher education have been noted in the literature as inclusive of disconnects between theory and practice (Levine, 2006), poorly defined purposes for student teaching (Watts, 1987), and weak relationships to other components of education programs (Guyton & McIntyre, 1990). The scales can be used in conjunction with
examination of syllabi and course materials and observations to contribute to research aimed at alignment between coursework and fieldwork. This will assist programs in determining the extent to which a consistent set of expectations aligned to effective practice in field settings is provided to candidates.

Additionally, use of the measures developed provide schools, colleges and departments of education with an indication of the extent to which candidates feel prepared to demonstrate key competencies they will use in the teaching profession. Through this study and the development of the measures, schools, colleges and departments of education may gain valuable abilities to evaluate program quality on the basis of the field experiences and clinical practice provided to teacher candidates. Many programs highlight the settings available to their candidates and student teachers as a benefit of the program (University of Dayton, 2010; Wright State University, 2010). Systematic research is needed to determine whether such programs and field partnerships offer candidates and p-12 students advantages over typical offerings. Use of these measures may lead to knowledge regarding the extent to which candidates perceive themselves to have assistance in learning skills designed to prepare them for professional teaching practice. This knowledge enables the comparison of outcomes by cooperating teacher and by program. The development of the measures provides one avenue for assessment of programmatic support and resources afforded to candidates.

**School Leaders/Administrators: P-12 Schools and Students**

This research, particularly the development of the measures that resulted from the study, lends three key contributions to p-12 schools and their leadership. First, this work
serves to provide a focus for cooperating teaching roles which are often poorly defined in p-12 settings. The second contribution of the study is that it lends school leaders valuable insights related to selection of and support for cooperating teachers. Additionally, this work emphasizes teacher educator roles that cooperating teachers take on which may be expanded to maximize benefits to p-12 initiatives and outcomes.

P-12 school educators and administrators face varied forms of accountability for student learning outcomes (NCES, 2010, ODE, 2010a). For example, the National Assessment of Educational Progress (NAEP) data represents our “Nation’s” learning and enables comparison to academic achievement in other nations. NAEP provides results for grade levels and also for subgroups such as gender and ethnic background. Individual districts also face other assessments for which data are reported and responded to more specifically.

No Child Left Behind (NCLB) is a federal law enacted on January 8, 2002 designed to “expand choices for parents, focus resources on proven education methods and provide accountability for results” (ODE, 2010a, p.1). Whereas differentiated accountability models which allow for “more flexible and innovative improvement options” (ODE, 2010b, p. 1) are approved in six states (including Ohio), a focus remains on percentages of subgroups which meet (or do not meet) AYP – adequate yearly progress (ODE, 2010b). Even with differentiated accountability models, schools and districts are issued Local Report Card Indicators, school and district designations under state laws, and are charged with meeting specific requirements for how schools and districts demonstrate having achieved AYP. Subgroups of students considered in AYP
calculations include the Economically Disadvantaged, Racial/Ethnic groups (African American, Asian, Hispanic, Multi-racial, Native American and White) Students with Disabilities, and English Language Learners (ODE, 2010b). In Ohio, for example, Districts identified as underperforming through the designation of Improvement Status, are required to craft and implement plans for improvement. If over time these plans are unsuccessful, consequences include abolishment or restructuring of the district (ODE, 2004). Similar expectations and consequences exist for individual schools (ODE, 2004).

Abilities to meet the assessment-based challenges associated with p-12 education hinges upon the quality of the school’s teaching force. When student teaching occurs in p-12 settings, the cooperating teacher, as the school employee, ultimately transfers his or her teaching responsibilities to the student teacher (Clarke, 2001, 2007). The candidate then works with the students as he or she practices and refines developing teaching skills. This experience may be threatening to administrators and teachers who are formally responsible for the educational outcomes of candidates’ work. This experience is likely to be particularly threatening to administrators and educators who are familiar with student teaching as based on loosely defined purposes (Watts, 1987), unclear expectations (Koskela & Ganser, 1995) and inadequate preparation (Clarke, 2001; Glickman & Bey, 1990; Griffin, 1986; Zeichner, 1992).

This research serves as a point of entry for addressing the realistic concerns faced by school leaders. The process of developing the new measures identified six components of cooperating teaching. Two stand out as particularly reassuring to school leaders. Identification of modeling quality classroom pedagogies based on Core Propositions
(Scale 1) as an important role in cooperating teaching may reassure administrators that student teachers working in their school settings have guidance and examples of specific components of effective teaching (NBPTS, 2008). Additionally, a focus on use and promotion of reflection and creating learning environments which are accepting of candidates (Scale 2) may also serve to address school leaders’ concerns regarding the types of support and assistance with planning available to candidates who provide instruction. Supportive learning environments promote candidates’ ability to disclose and seek guidance on issues which challenge their instructional effectiveness (Gimbert & Nolan, 2003).

Given the accountability based context of today’s increasingly diverse schools, it has become important that cooperating teachers effectively assist candidates in realizing high goals for all students’ learning. Through this research, modeling of quality pedagogies for p-12 learners has been identified as inclusive of using strategies to promoting differentiation, authenticity of learning experiences and tailoring learning experiences to student learning needs. This is particularly promising in terms of helping to prepare student teachers to enter and remain in high-need public schools reducing high turnover rates (NCES, 2010). Research has shown “a support system that promotes reflection and cross-validation of preservice teachers’ perceptions” to be a key aspect of programs that effectively generate positive change in preservice teacher attitudes toward minority students” (Groulx, 2001.p 64). Cooperating teachers can be integral components of such support systems. Some programs “have become aware that dealing with issues of race, ethnicity and culture is not an option or an add-on, but a necessary part of the
core….it must be experientially confronted in field placements and ongoing discussion of daily teaching and learning issues” (Darling-Hammond, 2006, p. 242). Cooperating teachers have been identified as key agents of preservice teacher socialization into the profession (Koskela & Ganser, 1995). Identification of a focus on appreciating cultural diversity is an important component of education modeled by cooperating teachers. Darling-Hammond (2006) identifies teachers who receive high quality mentoring as significantly more likely to stay in the education profession. School leaders can and should promote improvements in the preparation of future teachers by building the teacher education capacities of cooperating teachers. Since it is known that student teaching plays an important role in identity development and efficacy building, school leaders should harness the opportunity to thoughtfully recruit and support cooperating teachers who prepare candidates for success in schools, especially “challenging” ones.

The second contribution this study lends to school leaders is a set of valuable insights related to selection of and support for cooperating teachers. Clarke (2001) identifies administrators’ selection of cooperating teachers as poorly defined. Often cooperating teachers’ selection is based on willingness, grade level/subject area or other reasons not associated with preparedness for simultaneously addressing the learning needs of adult and child learners. Clarke (2007) identified school leaders as troubled by the prospect of making cooperating teacher selections that would appear to be evaluative. Principals have also been identified as hesitating to select cooperating teachers in ways that appear evaluative because of teacher’s unions (Clarke, 2007).
The identification of cooperating teaching actions provided by this research may help administrators ensure that student teachers are placed with teachers who can assist them in becoming assets to p-12 schools. This research provides for school leaders a set of competencies to consider when making placement decisions. In this way, administrators may contribute to building teachers’ leadership capacity through recognition and development of teachers’ strengths.

Examination of data obtained through the use of the new measures may reveal that not all elements of quality cooperating teaching are represented in individual cooperating teachers. Administrators may find the tool useful in identifying patterns in demonstrated practices because it lends focus to their efforts to offer support through meaningful selection of groups of cooperating teachers and provisions for effective collaborative professional development. Professional development is increasingly identified as a key means of improving schools (Elmore, 2002; Frechtling, 2001; Newman, King and Youngs, 2000). Cook and Fine assert that the “ultimate worth of professional development for teachers is the essential role it plays in the improvement of student learning” (1997, p.1). Teachers, “often admit that the professional development they receive provides limited application to their everyday world of teaching and learning” (Lieberman & Wilkins, 2006, p.125). Through the use of the new measures, school leaders may more effectively focus professional development on teacher learning (Carnegie Corporation, 2001), student teacher learning (Koerner, Rust & Baumgartner, 2002) and student achievement (ODE, 2010, NCES, 2010). As administrators consider
the approval of teacher’s projects for various school initiatives, this research lends insights into types of action research projects which may be beneficial teacher inquiries.

Through administrative support for effective professional learning, practicing teachers may employ action research for reflection upon their own teaching into their ongoing work with their students and student teachers. Administrative support for action research lends support to a means for teacher learning that is identified to lead to lasting changes in instruction (Kitchen & Stevens, 2008; McNiff, 2002). Additional professional learning opportunities administrators could provide for to assist cooperating teachers may include collaborative research teams or asynchronous forms of collaboration such as blogs dedicated to collaboration, reflection, and examination of student work (Yang, 2009). Strategies such as these built around the cooperating teaching actions identified in this study may enable administrators to help reduce the fragmentation, and lack of coherence and consistency for which teacher education programs have been substantially criticized. At the same time, administrators are likely to foster the improvement of teaching quality and student learning. Students and families benefit from the enhanced quality of cooperating teachers’ and student teachers’ instructional design and delivery which is likely with improved cooperating teaching. Additionally, the use of the new measures assists p-12 schools in a more long range ways as well. As cooperating teachers’ capabilities to promote student teacher learning are examined and increased, the quality of the hiring pool for p-12 schools is also likely to be positively impacted.
Individual Cooperating Teachers

This study makes two key contributions to individual cooperating teachers. First, this study serves to provide a unified framework for the types of activities that support student teaching. The articulation of elements of the work of cooperating teaching may help focus personal reflection on professional practices. Secondly, the development of the measures the articulates linkages between existing frameworks for teaching and may serve as a starting point for cooperating teachers seeking to utilize and build on current professional learning experiences to meet both p-12 and candidate learning needs.

Individual cooperating teachers have expressed concerns regarding the expectations of them held by schools, programs, and departments of education and the extent to which communication with the university occurs (Clarke, 2007; Guyton & McIntyre, 1990). However, research has identified that cooperating teachers do want direction regarding their roles in teacher education and a means of working together to create high quality learning experiences for candidates (Clarke, 2007). The development of the new measures identifies for cooperating teachers a set of actions that have been identified as important not only to standards development entities, but to student teachers as well. Cooperating teachers may use the scales as a tool for self examination and collaborative reflection. This is likely to yield cooperating teachers insights into areas in which they might either share their expertise or seek professional learning to enhance skills as teacher educators. The provision of a tool for the examination of cooperating teaching actions also promotes ongoing dialogue between cooperating teachers and
student teachers surrounding aspects of teaching which may not otherwise have a clear point of entry into their developmental conversations (Koerner et al., 1992).

The development of linkages between existing frameworks for teaching may enable cooperating teachers to build on and customize existing professional learning experiences to enhance their abilities to meet the learning needs of their students – both candidates and p-12 learners. Cooperating teachers who have achieved National Board Certification, or are familiar with the Core Propositions which have increasingly become a focus of graduate level teacher education, (NCATE, 2010) may find that they are able to utilize teaching actions that they had previously utilized only with p-12 learners with student teaching adults as well. Additionally, the identification of a focus on instructional decision making and modeling of high quality pedagogical strategies, (particularly for working with diverse learners) enables cooperating teachers to build on professional development and action research practices to include and support student teachers. In order to expose student teachers to collaboration (Scale 3), stakeholder connections (Scale 4) and effective uses of technology to support learning (Scale 6), cooperating teachers may choose to include student teachers in professional learning opportunities such as workshops and professional learning groups and action research (Burbank, 2003; Burbank & Kauchak, 2003; Byrd & McIntyre, 1997).

Cooperating teachers may assist student teachers in constructing research projects which support not only the candidates’ development but also the cooperating teachers’ professional development and p-12 learning aims (Scale 3). Cooperating teachers and student teachers may also benefit from collaboratively examining teaching actions.
Burbank and Kauchak found that “for experienced teachers, teaming provided a viable mechanism for thinking about [classroom] research (2003, p. 507.) This research calls attention to the importance of reflection and planning for student learning (Scales 1&2). The intensive and extensive interaction between cooperating teachers and student teachers identifies these pairs as ideal for collaborative teaming to promote student learning. The focus on professional learning experiences presented by the newly developed measures may prompt cooperating teachers to discuss with candidates how their own learning and student learning intersect.

Cooperating teachers also may find that opportunities for layered action research projects that focus on both student teacher learning and p-12 student learning are readily available in cooperating teaching contexts which utilize the content of the newly developed measures to inform their work together. It is important for cooperating teachers and student teachers to work together to use data to make decisions about teaching so that student teachers have some modeling for and practice with how teachers make instructional decisions.

Research has shown that integration of theoretical understandings and actual experiences with students helps teachers feel prepared to teach (Nakai and Turley, 2003). Action research conducted by preservice teachers and mentored by cooperating teachers has been identified the literature as an effective way of integrating theory and practice to promote learning gains for students (Price & Valli, 2005; see also Scale 4). The National Science Teachers Association, NSTA, a specialized professional association for science educators asserts, “Pedagogy and research should not be separate endeavors. Effective
teaching should be guided by and should guide research” (NSTA, 1990, p. 1). The development of the new measures enables cooperating teachers to more effectively integrate pedagogy and research.

**Student Teachers**

This study makes two key contributions to student teachers. First, the development of the new scales provides student teachers with a tool for personal reflection. If candidates are provided the set of measures early in their student teaching placement, they may use the measures as a focus for their thinking about how the student teaching experience is progressing to better prepare them to respond to the items toward the end of their experience. Use in this way may serve to advance their understanding of what they are and are not getting out of their own student teaching placement. As student teachers begin to understand what cooperating teaching is about, they are likely to more readily recognize its elements in practice. As a result, student teachers may seek to connect and network with additional professionals in ways that allow them to draw on other school staff, peers or university faculty to support their developing teaching practice (Scale 5). The focus on reflection and in conjunction with identified performance outcomes for student teachers may prompt them to engage in early professional development through collaborative and individual examination of teaching practices (Scales 2 & 5). This work may motivate student teachers to engage in collaborative or individual action research to further examine their own learning as well as the learning they prompt in p-12 students. Additionally, this research calls attention to thinking and
taking action related to making learning opportunities accessible to everyone, including
diverse populations. It is hoped that this work is instructive with regard to strategies that
will prompt more effective preparation of student teachers for the realities of diversity in
classroom contexts. This study also provides to student teachers an early awareness of
key actions of future roles as potential cooperating teachers.

The newly developed scales can be used by student teachers as an element of their
reflective processes to assist them in keeping track of their experiences with their
cooperating teachers. Student teacher reflection should be supported by a skilled teacher
educator, connected with a specific activity, look back on the activity, and facilitate the
development of plant for alternative action (Tomostsuk & Ugaste, 2010). Early exposure
to the measures may prompt student teachers to pose questions to their cooperating
teachers (and/or supportive others) about issues in teaching and ongoing teacher learning.
Use of the measures as a prompt for reflection enables student teachers to think critically
about their experiences and leads them to consider what their own choices will be as a
future teacher and possibly cooperating teacher.

Research emphasizes the importance of preparing teachers to be lifelong learners
through engaging them meaningfully in collaborative professional learning with their
cooperating teachers (Byrd & McIntyre, 1997; Rodriguez and Sjostrom, 1998). Professional learning has been regarded as foundational to the implementation of
standards based reform (Fishman, Marx, Best, & Tal, 2003). As such, over the course of
the past twenty five years, professional development for practicing teachers has
progressed from a choice to a mandate. (Holmes Group 1986; National Commission for

Learning experiences that result in “significant changes in practice will focus explicitly on student learning needs, engage teachers in analysis of their own practice, and provide opportunities for teachers to observe experts and to be observed by and to receive feedback from experts” (Carnegie Corporation, 2001, p. 12). As student teachers explore their own progress toward Performance Outcomes reflected in the new measures, they are more likely to develop relevant questions to guide action research.

The provision of a focus for self and collegial examination of teaching practices through action research through the development of the new measures is a second key contribution to student teachers. Action research by pre service students holds promise to help them recognize connections between teaching actions, contextual factors and student learning outcomes. Marilyn Cochran-Smith’s work suggests that “the ability to pose questions, to struggle with uncertainty and build evidence for reasoning…is an indispensable resource in the education of teachers” (1991, pp. 280-281). NCATE also expects this to be cultivated through teacher education programs stating “Teacher candidates assess and analyze student learning, make appropriate adjustments to instruction, and monitor student progress. They are able to develop and implement meaningful learning experiences for students based on their developmental levels and prior experience” (NCATE, 2007, p 24). As a result of what they come to know when
examining their experiences through the lens of the constructs represented in the new measures, student teachers may seek to collaborate with community members, other school staff, peers or university faculty to support teaching and learning (Putnam & Burke, 1992; Rodriguez & Sjostrom, 1998; Yang, 2009).

The focus on reflection and in conjunction with identified performance outcomes for student teachers may prompt them to engage in early professional development through critical examination of teaching. This work may motivate student teachers to engage in action research which examines their own learning and diversity as well as that of their p-12 students. Research has suggested student important differences in the ways student teachers engage in reflection, perceive mistakes, and interact with cooperating teachers (Rodriguez and Sjostrom, 1998). Use of the measures by student teachers as a source of topics for reflection through action research, keeping collaborative journals, or blogging may enable student teachers to understand and become increasingly comfortable with the transitions and experiences resulting from various elements of diversity in the student teaching context (Rodriguez and Sjostrom, 1998; Yang, 2009).

Shared expectations such as those promoted by the development of the measures which identify components of cooperating teachers build trust which is needed for open dialogue around issues of teaching and learning and examination of learning outcomes (Gimbert & Nolan, 2003; Kitchen & Stevens, 2008; Price & Valli, 2005). In contexts where pre-service teachers feel supported, free to ask questions, and see more experienced educators modeling inquiry, data collection strategies, and use of data to improve student learning, they are more likely to integrate these practices into their own
teaching. The inquiry process involves data gathering, reflection on the action as it is presented in the data, generating evidence through the data, and making claims to knowledge based on conclusions drawn from validated evidence (McNiff, 2002). Through the examination of their own and students’ diversity as suggested by the new measures, student teachers hold potential to initiate conversations that include productive discussion of the quality of learning experienced by diverse learners.

Every school-improvement effort is dependent on the smallest unit in education, that is at the classroom level at which teachers provide daily instruction (McLaughlin, 1991). For this reason, it is critical that “educators must pay attention to the results of professional development on job performance, organizational effectiveness, and the success of all students” (Cook & Fine - NCREL, 2007, p. 1). Student teachers “need to know how to teach, but they also need to know how to reflect on their progress” (Glenn, 2006, p. 86). Use of the new measures by student teachers to focus their examination of interactions during student teaching holds promise to promote learning for cooperating teacher, student teachers, and p-12 learners.

Recommendations for Replication and Further Study

In the section that follows, I briefly summarize three key contributions of the study, address considerations for replication of the study, and suggest key areas for related research.

The most significant contributions of this study stem from integrative considerations of three views of teacher education presented in Chapter Two: teacher
education as a “training problem”, teacher education as a “learning problem”, and teacher education as a “policy problem” (Cochran-Smith, 2004a, p.295). Each of these views contributed to my ability to craft a research design which yielded new insights into field-based teacher education. Considering field-based teacher education as a “training problem”, I looked to standards and experts to provide existing notions of behaviors associated with quality teaching (Ary et. al, 2006; Cochran-Smith, 2004a, p.295; DeVellis, 2003). Considering field-based teacher education as a “learning problem”, I sought to examine student teachers’ perceptions of the learning context in terms of modeling, support, and acceptance (Feiman-Nemser, 2001; Hall & Davis, 1995; Oberski et. al, 1999). Consideration of field-based teacher education as a “policy problem” prompted me to craft a study with potential to lend insights not only to candidates but also the entities that shape expectations, policies and processes surrounding field-based teacher education (Cochran-Smith, 2004a, p.295; Darling-Hammond, 1999).

This research process lends three major contributions to teacher education. First, this research resulted in the development of a valid and reliable standards-based tool for examination of cooperating teaching practice. Additionally, the research process gave voice to student teachers. Student teachers were actively involved by providing feedback on the items during the construction of the measure and will be able to provide context-specific feedback to their programs through its future use. The third key contribution of this work is that it proposes a conceptual and implementation-based fit between policy-based frameworks in Teacher Education.
Strengths, Challenges and Recommendations for Future Research

Strengths and challenges of the present study should be considered when replicating this work as part of future research. It is important to note that the study as described is generalizable only to participating candidates because of the inability to determine a sampling frame to allow for random selection (Ary et. al, 2006). A strength of the study was that all 50 initial teacher licensure programs within the state of Ohio were contacted and asked to participate. It was a challenge to secure the participation of many institutions in a timely fashion. Ultimately data from eleven institutions are presented in the current study. Policies and procedures regarding participation in research vary among institutions and specific faculty requirements may pose additional challenges. Issues presented by program faculty included difficulty forecasting course enrollment numbers, conflicts related to administration of program surveys, and coordination of administration with candidate independent work dates. Unclear bureaucratic structures and approval procedures for research precluded the participation of candidates in seminars taught by adjunct faculty members otherwise willing to administer the newly developed instrument. The number of different institutions that participated was reassuring in terms of the diversity of candidates it provided. Although there was little ethnic diversity represented in the study, the inclusion of candidates from as many different preparation programs as possible provides a greater array of candidate experiences to draw from in the development and validation of the measures.

An in-depth multifaceted approach to ensuring construct and face validity was an essential aspect of the study which should be retained in future investigations. Two
rounds of cognitive interviews along with consultation of a panel of experts corresponding to each set of standards were employed in conjunction with a thorough review of the relevant literature. Future studies should employ a similar approach to ascertaining the relevance of items proposed for inclusion in attitudinal scales.

A specific challenge encountered during this study that could be avoided in future studies is the development of an effective strategy for gathering demographic data. Identifying the length of time teacher candidates spend in field experiences and student teaching and cooperating teachers’ National Board Certification status proved challenging in this study. Appropriate methods for gathering this information will vary according to the research design employed. The sampling plan used becomes an important consideration when planning for the collection of demographic data.

In this study, I attempted to identify the number of weeks student teachers had spent in rural, suburban, and urban field placements prior to student teaching and to also determine the setting and number of weeks spent in student teaching. I also included an item which asked whether the student teacher’s cooperating teacher was a National Board Certified Teacher. To increase the likelihood that student teachers understood what National Board Certification was, I included a parenthetical statement that described National Board Certification as an advanced credential beyond traditional teacher licensure. A “don’t know” response option was included to prevent student teachers from feeling required to respond if they were unsure. Student teachers’ responses to these items indicated that the items were not interpreted consistently by all respondents.
Since the study involved student teachers from so many institutions, it appeared most reasonable to ask the student teachers to self-report this information along with their cooperating teacher’s National Board Certification status. My difficulties obtaining accurate information may be attributed to the fact that student teachers participating in the study were from a range of programs with different schedules for field experiences. Some of the student teachers had met for field experiences twice a week while others attended their field sites daily. It was hard for the student teachers to convert the amount of time they spent at their field sites into “weeks”. It is also possible that the term “weeks” was not descriptive enough. In the future, I plan to include a clarifying parenthetical reference which states “please estimate considering 40 clock hours as one “week,” or simply ask for the number of actual “clock” hours spent in the placements. As research designs are considered, it will be important to take note of how similar or different participating programs are in terms of their field experience arrangements for candidates to craft a means of collecting this data accurately. If a limited number of institutions are included, the both the duration of field experiences prior to (or including) student teaching and the National Board Certification status of cooperating teachers may be obtained through program departments. Whereas many departments may not collect National Board Certification data, they may be able to provide the names of cooperating teachers so that this information could be obtained from the National Board for Professional Teaching Standards database. In this study, however, student teachers and their cooperating teachers were not identifiable so it was not possible to match data from different sources.
This study focused on the student teaching experience because of its far-reaching contributions to teachers’ professional practice (NCTAF, 2006; Osunde, 1996). Use of the measure in student teaching settings can provide insights on the consistency of cooperating teaching actions across contexts. For example, data from student teachers studying within specific content areas, community contexts, and grade levels can be compared to identify context-specific differences in cooperating teaching actions. Additional valuable insights can also be obtained through the administration of the measures at other points in teacher preparation to determine its utility for as an indicator of cooperating teaching actions in field settings leading up to student teaching.

The measures developed may also prove useful in determining the extent to which cooperating teachers’ and student teachers’ perceptions of cooperating teaching actions are aligned. Whereas cooperating teachers and student teachers may work in the same classroom daily, their perceptions of classroom actions and interactions may vary widely. Adaptations to the measures developed through this study may result in the development of a tool which can be used as a self-administered needs assessment for cooperating teachers in professional development contexts. Further research may also explore relations between cooperating teachers’ perceptions, student teachers’ perceptions and varied forms of professional development. Through the use of the newly designed measures, perceptions of cooperating teaching actions could be explored in conjunction with other strategies to more clearly articulate linkages between professional development offerings and impacts on cooperating teachers’ development of identity as teacher educators.
In developing the scales that resulted from this study, new research questions emerged. In the process of gathering feedback from the panels of experts to answer research question one, I developed an additional research interest. Some experts responses suggested the perception that candidates would have little ability to recognize “quality teaching” when they observe it in their cooperating teachers work, yet during cognitive interviews, candidates provided descriptions of specific classroom actions to convey their reasoning for the selection of a response category. I perceived this as a potential disconnect between professors’ perceptions of candidates’ reflection on teaching actions and candidates’ actual reflective practices. I now have interest in conducting a follow-up qualitative study to further explore the connections between experts’ perceptions and candidates’ actual reflection and reasoning about teaching. This may be accomplished by sharing either videotaped or written excerpts of teaching actions related to Core Propositions and ATE Standards for Teacher Educators with both experts and candidates. Interviews to elicit discussion surrounding what experts suspect candidates in varied phases of teacher education programs will notice and what candidates actually do perceive will help illuminate the learning process of teacher candidates. Since it is also likely that programmatic differences play a role in shaping candidates’ ability to recognize and reflect upon specific aspects of teaching quality, this area for further study holds promise when extended to various programs and the faculty who serve as instructors to participating candidates. Clear articulation of what candidates know and are able to do promotes the development of increasingly rigorous yet attainable
expectations for ongoing professional development for both pre-service and practicing teachers.

I also found an additional research aim through the process of addressing research question two. Having experienced the richness of evidence and supporting examples provided by candidates during the cognitive interviews, I would like to develop a second version of each scale that resulted from this study. I would like to incorporate a narrative or evidence based way of allowing candidates to share specifics that led to their responses through a more focused open ended response section or the development of an accompanying interview protocol.

As developed, the measures are based on three frameworks related to education: National Board for Professional Teaching Standards’ Core Propositions, ATE Standards for Teacher Educators and Performance Outcomes from the ATE Standards for Field Experiences in Teacher Education. These frameworks were chosen as the foundation for this study because of their connection to overarching constructs in the literature reflecting quality teaching in each context. Taking note of the variety of standards against which educators are evaluated, I also recommend research to examine the alignment between the measure developed and other educational standards including program conceptual frameworks, state, national and international standards for teaching practice. Additionally, longitudinal approaches may be utilized to determine whether teacher candidates employ similar practices to their own cooperating teachers in later career stages.
Conclusion

This study was designed in response to the growing responsibilities cooperating teachers take on for the preparation of teacher candidates. Cooperating teaching actions impact not only student teachers, but also p-12 students who learn under their direction. However, cooperating teachers often work to create effective learning experiences for teacher candidates and p-12 learners with minimal direction or training. Student teachers’ responses during the course of this study are consistent with the literature emphasizing student teaching as a critical component of teacher education.

Through this study, student teachers were given voice in the development of a valid and reliable measure of cooperating teaching actions. As a result of this study, cooperating teaching actions have been more clearly defined, and a tool has been developed that will lend further insights with future use. This work also provides standards development entities with a conceptual and implementation-based fit between three sets of standards important in education – National Board for Professional Teaching Standards’ Core Propositions, ATE Standards for Teacher Educators, and Performance Outcomes from the ATE Standards for Field Experiences in Teacher Education.

The intent of this study was to create not only a valid and reliable measure, but also an invitation for dialogue. The development of a valid and reliable measure of cooperating teaching actions serves to open doors to reflective action-planning dialogue between cooperating teachers and student teachers, teachers and programs, and various stakeholder groups. It is through this reflection and dialogue that high hopes for
education and the preparation of our nation’s next generation of educators is translated into action.
References


Association of Teacher Educators. (2007). *Description and use of the standards*.


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Appendix A: Documentation of IRB Approval

Office of Responsible Research Practices:
300 Research Foundation
1950 Kenny Road
Columbus, OH 43210-1003
Phone (614) 688-8457
Fax (614) 688-6166
www.orrp.osu.edu

June 16, 2009

Protocol Number: 2009E0466
Protocol Title: OHIO STUDENT TEACHERS’ PERCEPTIONS OF COOPERATING TEACHERS’ ENACTMENT OF NATIONAL BOARD CORE PROPOSITIONS AND TEACHER EDUCATOR STANDARDS TO PROMOTE STUDENT TEACHER LEARNING, ERIC ANDERMAN, ROMENA GARRICKT HOLBERT, EDUCATION AND HUMAN ECIOLOGY
Type of Review: Request for Exempt Determination
ORRP Staff Contact: Cheri M. Petkey
Phone: 614-688-0389
Email: petkey.4@osu.edu

Dear Dr. Anderman,

The Office of Responsible Research Practices has determined the above referenced protocol exempt from IRB review.

Date of Exempt Determination: 06/03/09
Qualifying Exemption Category: 2

Please note the following:

- Only OSU employees and students who have completed CITI training and are named on the signature page of the application are approved as OSU Investigators in conducting this study.
- No procedural changes may be made in exempt research (e.g., recruitment procedures, advertisements, instruments, enrollment numbers, etc.).
- Per university requirements, all research-related records (including signed consent forms) must be retained and available for audit for a period of at least three years after the research has ended.
- It is the responsibility of the Investigator to promptly report events that may represent unanticipated problems involving risks to subjects or others.

This determination is issued under The Ohio State University’s IRB Federalwide Assurance #00000578.

All forms and procedures can be found on the ORRP website – www.orrp.osu.edu. Please feel free to contact the ORRP staff contact listed above with any questions or concerns.

Cheri Petkey, MA, Certified IRB Professional
Senior Protocol Analyst—Exempt Research

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Appendix B - Institution Invitation script for Telephone or E-mail Contact

Good morning.

My name is Romona Holbert and I am a doctoral candidate in the School of Educational Policy and Leadership at The Ohio State University. I am conducting research to explore relationships between enactment of standards in student teaching contexts and teacher candidates’ perceptions of their student teaching placement as helpful to their learning about teaching. In particular, I am designing an instrument which investigates how National Board Core Propositions and Standards for Teacher Educators are enacted by cooperating teachers in student teaching contexts and how these actions relate to student teachers’ perceptions of help in learning to demonstrate Performance Outcomes for Field Experiences in Teacher Education.

As a key element of Ohio’s field placements, you are invited to participate in this research. With your permission, the questionnaire which would take about 15 minutes to complete would be administered to the teacher candidates at your institution who are engaged in student teaching.

I intend for the questionnaires to be administered at a pre-arranged university-based gathering of student teachers. I hope that the questionnaire can be administered during the last three weeks of the student teaching experience so that each student teacher will have had extensive interactions with his or her cooperating teacher before completing the questionnaire.

All candidate responses to the questionnaire would be collected such that each candidate remains anonymous. Data collected as a result of this questionnaire could lend valuable insights to programmatic decisions regarding placement of student teachers and the strengthening of connections between campus and field based learning experiences for teacher candidates. Additionally, this data will be presented as I engage in the work of the dissertation process under the guidance of my advisor Dr. Eric Anderson and committee members Dr. Belinda Gilbert and Dr. Robert Hite.

I can be reached to discuss any questions or concerns by phone at [redacted] (home) or [redacted] (cell) or by e-mail at holbert.35@osu.edu.

Are you willing to participate in the study?

If so,
How many candidates from your program will be student teaching in Spring/Autumn 2009?
Can you suggest a date that would be most convenient for the administration of the questionnaires?

Thank you,

Romona M. Garrett Holbert, NBCT
Doctoral Candidate
The Ohio State University

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Appendix C – Invitation to Participation Script and Letter for Informed Consent

Invitation to Participation (Recruitment Script and Request for consent):

As student teachers preparing for initial teacher licensure, you are invited to participate in a research project designed to identify how cooperating teacher actions are related to your learning from student teaching experiences. Data collected through this research project could fuel improvements to teacher education programs as well as assess the effectiveness of current student teaching experiences in supporting teacher candidate learning. Though there are no direct benefits to individual participants, it is likely that your insights will lead to the improvement of field experiences for future teacher candidates and foster improved preparation of cooperating teachers.

Should you decide to participate in this study, all of your responses will be anonymous and no information you share will be disclosed. Your completion and return of the questionnaire implies your consent to participate. To choose to participate please read the directions, complete the questionnaire, place it in the return envelope provided and seal it before placing it in the return basket. The questionnaire will take fifteen to twenty minutes to complete and is divided into five sections. While completing the questionnaire, you may refuse to answer any questions that you do not wish to answer. While your responses are very important, your participation is voluntary, and no penalty will be enacted against you if you were to decide not to begin or complete the questionnaire. All participants’ responses will remain anonymous so that no information you share will be linked to you. In this way, your identity cannot be identified. Since you cannot be linked to the information you provide, there are no anticipated risks related to your participation.

If you choose not to participate, please simply indicate this on the front of your questionnaire and return your blank questionnaire in the sealed envelope to the return basket.
The questionnaire has been designed to elicit your perceptions of the student teaching experience required for the completion of your teacher preparation program. If you participated in student teaching in more than one setting, please consider only one placement when selecting your response category. Your participation is truly important and valued. Please read the directions. When you are finished with your questionnaire, please place it in the envelope provided, seal it, and return it to the collection area. If you have questions, concerns or would like a final summary of this project’s findings, please contact Romina Holbert, doctoral candidate at The Ohio State University School of Educational Policy and Leadership by telephone at (937) 878-8833. Please keep this printed copy of the invitation to participation for your reference.
Appendix D– Data Collection Instrument

Ohio Student Teachers’ Perceptions of Cooperating Teachers’ Enactment of National Board Core Propositions and Teacher Educator Standards to Promote Student Teacher Learning

When completed, please return to distributor of questionnaire.
The purpose of this study is to better understand how cooperating teachers’ actions relate to how they help their student teachers learn about teaching. As student teachers nearing the end of your program, your insights are very important and may help to improve future student teaching experiences. Your insights can help teacher preparation programs to improve practices related to selection and education of cooperating teachers. Your insights could also help cooperating teachers identify the actions that are most important to student teachers’ ability to learn during student teaching.

If you had more than one cooperating teacher, please consider only one of them when responding.

This questionnaire should take about 15 minutes to complete. Your individual responses will be anonymous. Please say what you really believe. Your individual responses will not be shared with anyone including your cooperating teacher or program faculty. Thank you for your time.

**INSTRUCTIONS:** Please respond to the questions below. If your response to either question is “NO” you have completed the necessary questions. Please place the questionnaire in the return envelope and submit it. Thank you for your time. If your response to both preliminary questions is “YES” please continue on to the remaining items. Please follow the instructions that follow this section to continue.

1. Are you currently enrolled in a program that provides initial teaching licensure? | YES | NO – questionnaire completed. Thank you!
2. Are you currently student teaching through the program? | YES | NO – questionnaire completed. Thank you!

**PLEASE CONTINUE TO THE NEXT PAGE ➔**
Instructions
Please respond to each item by circling the appropriate number following each statement. Select the number that accurately reflects your level of agreement or disagreement.

Scale
1 – Very Strongly Disagree (VSD)        4 – Agree (A)
2 – Strongly Disagree (SD)              5 – Strongly Agree (SA)
3 – Disagree (D)                        6 – Very Strongly Agree (VSA)

If you are very strong in agreement with the statement, score the item a six (6).
If you are very strong in disagreement with the statement, score the item a one (1).

Example

<table>
<thead>
<tr>
<th>Statement</th>
<th>Level of Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Tic-tac-toe is a challenging logic game.</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>

In the example, “6” has been circled. This indicates that the person responding very strongly agrees that tic-tac-toe is a challenging logic game.

PLEASE CONTINUE TO THE NEXT PAGE →
Section 1: Cooperating Teachers’ Modeling of Core Propositions in Student Teaching

Please respond to each item by circling the appropriate number following each statement. Select the number that accurately reflects your level of agreement or disagreement with each statement regarding the practices modeled for you by your cooperating teacher as he or she teaches the students. Please indicate how you really feel. Your responses cannot be connected to you or to your cooperating teacher.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Level of Agreement</th>
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</thead>
<tbody>
<tr>
<td>1 – Very Strongly Disagree (VSD)</td>
<td>4 – Agree (A)</td>
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<tr>
<td>2 – Strongly Disagree (SD)</td>
<td>5 – Strongly Agree (SA)</td>
</tr>
<tr>
<td>3 – Disagree (D)</td>
<td>6 – Very Strongly Agree (VSA)</td>
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<tr>
<th>Statement</th>
<th>VSD</th>
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<th>D</th>
<th>A</th>
<th>SA</th>
<th>VSA</th>
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<tbody>
<tr>
<td>My cooperating teacher models...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1  Recognition of students’ individual needs</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2  Adjustment of lessons to enable all learners to meet challenging goals</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3  Understanding of how student-to-student interactions in the classroom impact learning</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4  Understanding of how students learn</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5  Equitable treatment of all students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6  That his or her mission in working with students extends beyond developing their cognitive abilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7  How to develop lessons that connect different subject areas (eg. science, math, reading)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<table>
<thead>
<tr>
<th>Statement</th>
<th>Level of Agreement</th>
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<tbody>
<tr>
<td>1. My cooperating teacher models...</td>
<td>VSD</td>
</tr>
<tr>
<td>2. How to make subject-specific content make sense to students</td>
<td>SD</td>
</tr>
<tr>
<td>3. How to provide multiple examples to help students understand concepts they struggle with</td>
<td>D</td>
</tr>
<tr>
<td>4. Ways to connect what students already know to what they will learn in the future</td>
<td>A</td>
</tr>
<tr>
<td>5. Use of a variety of methods to meet established goals for student learning</td>
<td>SA</td>
</tr>
<tr>
<td>6. The ability to keep all students engaged during whole-group instruction</td>
<td>VSA</td>
</tr>
<tr>
<td>7. Commitment to student engagement</td>
<td></td>
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<tr>
<td>8. How to give students feedback about their progress</td>
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<th>Scale</th>
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<td>1 – Very Strongly Disagree (VSD)</td>
<td>4 – Agree (A)</td>
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<tr>
<td>2 – Strongly Disagree (SD)</td>
<td>5 – Strongly Agree (SA)</td>
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<td>6 – Very Strongly Agree (VSA)</td>
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<tr>
<th>Statement</th>
<th>VSD</th>
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<th>D</th>
<th>A</th>
<th>SA</th>
<th>VSA</th>
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<tbody>
<tr>
<td>15 Strategies for making difficult instructional decisions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>16 Seeking the advice of others to promote student learning</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>17 How ongoing teacher learning improves teaching effectiveness</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>18 Reflection on the effectiveness of specific lessons</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>19 Contributions to the school’s effectiveness by collaborating with other professionals</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>20 Collaboration with parents to help students learn</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>21 Use of community resources to help students learn</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
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PLEASE CONTINUE TO THE NEXT PAGE →
Section 2: Cooperating Teachers’ Enactment of Standards for Teacher Educators in Student Teaching

Please respond to each item by circling the appropriate number following each statement. Select the number that accurately reflects your level of agreement or disagreement with each statement regarding your cooperating teacher. In this section, please consider how your cooperating teacher interacts with you or with other adults in education. Please indicate how you really feel. Your responses cannot be connected to you or to your cooperating teacher.

<table>
<thead>
<tr>
<th>Scale</th>
<th>1 – Very Strongly Disagree (VSD)</th>
<th>4 – Agree (A)</th>
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<tbody>
<tr>
<td></td>
<td>2 – Strongly Disagree (SD)</td>
<td>5 – Strongly Agree (SA)</td>
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<td></td>
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<table>
<thead>
<tr>
<th>Statement</th>
<th>Level of Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>My cooperating teacher...</td>
<td>VSD</td>
</tr>
<tr>
<td>22 Makes connections to our subject matter clear to me</td>
<td>1</td>
</tr>
<tr>
<td>23 Understands how I learn</td>
<td>1</td>
</tr>
<tr>
<td>24 Demonstrates professionalism when helping me learn about teaching</td>
<td>1</td>
</tr>
<tr>
<td>25 Uses research to improve his or her ability to model effective teaching for me</td>
<td>1</td>
</tr>
<tr>
<td>26 Uses technology to help me learn about teaching</td>
<td>1</td>
</tr>
<tr>
<td>27 Assesses my progress in ways that help me learn about teaching</td>
<td>1</td>
</tr>
<tr>
<td>28 Demonstrates that he or she values cultural diversity</td>
<td>1</td>
</tr>
<tr>
<td>29 Creates a learning environment in which my uniqueness is accepted</td>
<td>1</td>
</tr>
<tr>
<td>30 Investigates ways to help me learn about teaching strategies</td>
<td>1</td>
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<table>
<thead>
<tr>
<th>Statement</th>
<th>Level of Agreement</th>
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</thead>
<tbody>
<tr>
<td>31 Shares his or her understanding of how student teachers learn with others</td>
<td>VSD 1 SD 2 D 3 A 4 SA 5 VSA 6</td>
</tr>
<tr>
<td>32 Shares his or her knowledge with others to improve student teaching experiences</td>
<td>VSD 1 SD 2 D 3 A 4 SA 5 VSA 6</td>
</tr>
<tr>
<td>33 Contributes to improvement of teacher education programs</td>
<td>VSD 1 SD 2 D 3 A 4 SA 5 VSA 6</td>
</tr>
<tr>
<td>34 Engages in action research based on his or her own work as a cooperating teacher</td>
<td>VSD 1 SD 2 D 3 A 4 SA 5 VSA 6</td>
</tr>
<tr>
<td>35 Reflects his or her strategies for helping me learn about teaching</td>
<td>VSD 1 SD 2 D 3 A 4 SA 5 VSA 6</td>
</tr>
<tr>
<td>36 Has adjusted his or her ways of working with me to meet my specific learning needs</td>
<td>VSD 1 SD 2 D 3 A 4 SA 5 VSA 6</td>
</tr>
<tr>
<td>37 Demonstrates a commitment to continuous professional development</td>
<td>VSD 1 SD 2 D 3 A 4 SA 5 VSA 6</td>
</tr>
<tr>
<td>38 Collaborates regularly with others who are important to student teachers’ learning</td>
<td>VSD 1 SD 2 D 3 A 4 SA 5 VSA 6</td>
</tr>
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</tr>
<tr>
<td></td>
<td>3 – Disagree (D)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Statement</th>
<th>VSD</th>
<th>SD</th>
<th>D</th>
<th>A</th>
<th>SA</th>
<th>VSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>39 Promotes high quality education for all students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>40 Promotes high quality experiences for me as I learn about teaching</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>41 Contributes to improving the profession of teaching</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>42 Encourages me to use technology in my teaching</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>43 Encourages me to consider how experiences I create for students relate to their lives</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>44 Encourages me to consider how my teaching may be interpreted by families</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>45 Sees himself or herself as teaching me to be an effective teacher</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

PLEASE CONTINUE TO THE NEXT PAGE →
Section 3: Your Student Teaching Experience in Relation to Learning About Teaching

Please respond to each item by circling the appropriate number following each statement. Select the number that accurately reflects your level of agreement or disagreement with each statement regarding how your student teaching experience as guided by your cooperating teacher helped you learn to demonstrate knowledge and skills related to teaching. Please indicate how you really feel. Your responses cannot be connected to you or to your cooperating teacher.

<table>
<thead>
<tr>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – Very Strongly Disagree (VSD)</td>
</tr>
<tr>
<td>2 – Strongly Disagree (SD)</td>
</tr>
<tr>
<td>3 – Disagree (D)</td>
</tr>
<tr>
<td>4 – Agree (A)</td>
</tr>
<tr>
<td>5 – Strongly Agree (SA)</td>
</tr>
<tr>
<td>6 – Very Strongly Agree (VSA)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Statement</th>
<th>Level of Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student teaching with my cooperating teacher helped me learn to...</td>
<td>VSD SD D A SA VSA</td>
</tr>
<tr>
<td>46 Use learning theories to plan effective lessons</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>47 Reflect on how my teaching impacts students</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>48 Make sound educational decisions</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>49 Connect what I learn in my teacher education program to what occurs in a real classroom</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>50 Demonstrate increased professional learning</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>51 Use feedback on my teaching to make changes that improve student learning</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>52 Assess my own teaching on a regular basis</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>

PLEASE CONTINUE TO THE NEXT PAGE →
<table>
<thead>
<tr>
<th>Scale</th>
<th>1 – Very Strongly Disagree (VSD)</th>
<th>4 – Agree (A)</th>
<th>2 – Strongly Disagree (SD)</th>
<th>5 – Strongly Agree (SA)</th>
<th>3 – Disagree (D)</th>
<th>6 – Very Strongly Agree (VSA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement</td>
<td>Student teaching with my cooperating teacher helped me learn to...</td>
<td>VSD</td>
<td>SD</td>
<td>D</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>53</td>
<td>Become more self-confident in my communication skills</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>54</td>
<td>Make appropriate decisions in complex situations</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>55</td>
<td>Collaborate with others to meet classroom challenges</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>56</td>
<td>Use varied forms of data to make effective decisions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>57</td>
<td>Relate theory and practice to instructional decision making</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>58</td>
<td>Effectively participate in the improvement of the school as a member of a learning community</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>59</td>
<td>Plan instruction that addresses both the needs and interests of diverse students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>60</td>
<td>Work effectively in a variety of settings with diverse students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

PLEASE CONTINUE TO THE NEXT PAGE →
Section 4: Cooperating Teacher’s Personal Teaching Efficacy

This refers to teachers’ beliefs that they are contributing significantly to the academic progress of their students, and can effectively teach all students.

Please circle a number to indicate the level to which you believe your cooperating teacher would agree with each statement.

Statement

61 If he or she tries really hard, he or she can get through to the most difficult student.

1 STRONGLY DISAGREE 2 SOMEWHAT AGREE 3 4 5 STRONGLY AGREE

62 Factors beyond his or her control have a greater influence on the students’ achievement than he or she does.

1 STRONGLY DISAGREE 2 SOMEWHAT AGREE 3 4 5 STRONGLY AGREE

63 He or she is good at helping all the students in his or her classes make significant improvement.

1 STRONGLY DISAGREE 2 SOMEWHAT AGREE 3 4 5 STRONGLY AGREE

64 Some students are not going to make a lot of progress this year, no matter what he or she does.

1 STRONGLY DISAGREE 2 SOMEWHAT AGREE 3 4 5 STRONGLY AGREE

65 He or she is certain that he or she is making a difference in the lives of the students.

1 STRONGLY DISAGREE 2 SOMEWHAT AGREE 3 4 5 STRONGLY AGREE

66 There is little he or she can do to ensure that all of his or her students make significant progress this year.

1 STRONGLY DISAGREE 2 SOMEWHAT AGREE 3 4 5 STRONGLY AGREE

67 He or she can deal with almost any learning problem.

1 STRONGLY DISAGREE 2 SOMEWHAT AGREE 3 4 5 STRONGLY AGREE

PLEASE CONTINUE TO THE NEXT PAGE →
Section 5: Your Personal Teaching Efficacy
This refers to teachers' beliefs that they are contributing significantly to the academic progress of their students, and can effectively teach all students. Please circle a number to indicate the level to which you agree with each statement.

Statement

68. If I try really hard, I can get through to the most difficult student.
1 2 3 4 5
STRONGLY DISAGREE  SOMewhat AGREE  STRONGLY AGREE

69. Factors beyond my control have a greater influence on the students' achievement than I do.
1 2 3 4 5
STRONGLY DISAGREE  SOMewhat AGREE  STRONGLY AGREE

70. I am good at helping all the students in the classes make significant improvement.
1 2 3 4 5
STRONGLY DISAGREE  SOMewhat AGREE  STRONGLY AGREE

71. Some students are not going to make a lot of progress during my time with them, no matter what I do.
1 2 3 4 5
STRONGLY DISAGREE  SOMewhat AGREE  STRONGLY AGREE

72. I am certain that I am making a difference in the lives of my students.
1 2 3 4 5
STRONGLY DISAGREE  SOMewhat AGREE  STRONGLY AGREE

73. There is little I can do to ensure that all my students make significant progress during my time with them.
1 2 3 4 5
STRONGLY DISAGREE  SOMewhat AGREE  STRONGLY AGREE

74. I can deal with almost any learning problem.
1 2 3 4 5
STRONGLY DISAGREE  SOMewhat AGREE  STRONGLY AGREE

PLEASE CONTINUE TO THE NEXT PAGE ➔
DEMOGRAPHIC INFORMATION:  Please fill in the blank with your response. For answers with choices, please circle the response that corresponds to your answer.
NOTE: Your responses are anonymous and cannot be connected to you as an individual.
No individual responses will be shared with anyone including your cooperating teacher, school district or university.

How many weeks was your total student teaching experience?  _______________ Weeks

What grade level(s) did you teach during student teaching?  __________________________

In what type of school district did you teach for student teaching?  Rural  Urban  Suburban

Is your cooperating teacher a National Board Certified Teacher?  Yes  No  Don’t Know
(National Board Certification is an advanced form of certification).

How many weeks have you spent in field placements other than student teaching?  _______________ Weeks

How many weeks have you spent in placements in the following types of communities?  __________Rural  __________Urban  __________Suburban
(indicate by placing a number on the line provided for each type)

PLEASE CONTINUE TO THE NEXT PAGE
What is the subject area(s) of license you will obtain?

______________________________

What is the grade level range of the license you will obtain?

______________________________

What degree are you currently pursuing? Bachelors  Masters  Licensure Only

Gender Male  Female

Age ________ years

What is your race/ethnicity? Check all that apply.

____ American Indian/Alaskan Native  ____ Other: Please identify

____ Asian/Pacific Islander

____ Black, non-Hispanic  Multi-racial: Please identify

____ Hispanic

____ White/non-Hispanic

PLEASE CONTINUE TO THE NEXT PAGE →
If other actions relating to your student teaching experience, cooperating teacher or teacher preparation program are relevant to your learning about teaching but were not addressed in this questionnaire, share your insights in the space below.

Please include any additional information or comments here:

Are there any parts of the directions or specific items that you believe should be revised or otherwise improved before this questionnaire is administered to other student teachers? Please indicate these below or write your comments in the margins near the specific direction statement or item.

Thank you for your participation!
Appendix E- Content Validity Letter/Expert Review Request

School of Educational Policy and Leadership
Doctoral Study in Teacher Education Policy and Leadership
165 A Raney Hall
20 W. Woodruff Ave
Columbus, OH 43210

Phone (614) 688-1484
Fax (614) 292-5900
E-mail: asdeman1@osu.edu

Dear [Name],

Because of your experience and background in working with the Standards for Teacher Educators you are invited to review the enclosed questionnaire for content validity. The items included in this instrument have been designed to explore and describe the perceptions of student teachers regarding their Cooperating Teacher’s Enactment of Standards for Teacher Educators during their student teaching experience.

As a doctoral candidate enrolled in the School of Educational Policy and Leadership at The Ohio State University, data collected from the administration of this questionnaire to participating teacher preparation institutions may be invaluable to programmatic decision making as well as establishing a framework for shared visions between field-based and campus-based teacher educators that maximize learning opportunities for student teachers. Certainly, the data collected will also be presented during my defense and as I complete the final stages of the dissertation process under the advising of Dr. Eric Andelman with support from committee members Dr. Belinda Gimbert and Dr. Robert Hite.

Should you decide to review the enclosed instrument, your suggestions and recommendations will be incorporated into the final version of the questionnaire to be used throughout this research study. The questionnaire was designed such that respondents should complete the instrument in approximately fifteen minutes.

Please use the evaluation form or make comments, suggestions, and recommendations directly on the instrument itself. Enclosed, you will find a pre-addressed, stamped envelope to return the questionnaire and evaluation form after review. Please contact me with any questions or concerns at [home] or [cell]. I can also be reached via e-mail at holbert33@osu.edu.

Respectfully,

Romona M. Garrett Holbert, Doctoral Candidate
School of Educational Policy and Leadership
The Ohio State University
Appendix F – Review Forms for Expert Panels

Questionnaire Evaluation Form

1. Are there questionnaire items that should be revised to improve their clarity or appropriateness to student teachers seeking initial licensure? If so, please identify the items and suggestions for their revision in the space below.

2. Is the format and content of the questionnaire appropriate for initial licensure candidates nearing the end of their student teaching placements?

3. Has the instrument been designed to elicit the student teachers' views of how Standards for Teacher Educators are enacted by his or her cooperating teacher? How might the instrument be revised to improve data collection that regarding these perceptions?

4. Are each of the Standards appropriately addressed through the items included in the questionnaire? If not, which Standards should be more fully addressed? How might the instrument be revised to improve data collection in this area?

5. Has the researcher completely eliminated bias from the questionnaire? If not, what biases exist, and how might these biases be eliminated?

6. What other shortcomings or potential problems exist in the questionnaire? Please describe how these shortcomings might be remedied.

THANK YOU!
Would you like to receive a summary of the results of the study? YES ___ NO ___
Section 2: Cooperating Teacher’s Enactment of Standards for Teacher Educators in Student Teaching

Please respond to each item by circling the appropriate number following each statement. Select the number that accurately reflects your level of agreement or disagreement with each statement regarding your cooperating teacher.

<table>
<thead>
<tr>
<th>Scale</th>
<th>VSD</th>
<th>SD</th>
<th>D</th>
<th>A</th>
<th>SA</th>
<th>VSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – Very Strongly Disagree (VSD)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2 – Strongly Disagree (SD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 – Disagree (D)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 – Agree (A)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 – Strongly Agree (SA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 – Very Strongly Agree (VSA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Statement</th>
<th>Level of Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>My cooperating teacher…</td>
<td></td>
</tr>
<tr>
<td>22 Teaches me in ways that demonstrate sound teaching methods</td>
<td>VSD SD D A SA VSA</td>
</tr>
<tr>
<td>23 Teaches me in ways that demonstrate professional knowledge</td>
<td></td>
</tr>
<tr>
<td>24 Models professional dispositions when working with me</td>
<td></td>
</tr>
<tr>
<td>25 Provides examples of research in teacher education when teaching me</td>
<td></td>
</tr>
<tr>
<td>26 Demonstrates facility with using technology to help me learn about teaching</td>
<td></td>
</tr>
<tr>
<td>27 Demonstrates effective assessment practices when helping me learn about teaching</td>
<td></td>
</tr>
<tr>
<td>28 Interact effectively with people of different cultures to help me learn</td>
<td></td>
</tr>
<tr>
<td>29 Creates a learning environment for me in which I am not discriminated against</td>
<td></td>
</tr>
<tr>
<td>30 Engages in inquiry that expands knowledge relating to helping student teachers learn about teaching</td>
<td></td>
</tr>
<tr>
<td>31 Contributes to scholarship that expands knowledge of how student teachers learn about teaching</td>
<td></td>
</tr>
</tbody>
</table>

PLEASE CONTINUE TO THE NEXT PAGE ➔
<table>
<thead>
<tr>
<th>Statement</th>
<th>Level of Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>My cooperating teacher...</td>
<td>VSD</td>
</tr>
<tr>
<td>Contributes to improving the profession of preparing future teachers</td>
<td>1</td>
</tr>
<tr>
<td>Makes sure I take technology into account in my teaching</td>
<td>1</td>
</tr>
<tr>
<td>Makes sure I take systemic thinking into account in my teaching</td>
<td>1</td>
</tr>
<tr>
<td>Makes sure I take world views into account in my teaching</td>
<td>1</td>
</tr>
<tr>
<td>Considers himself or herself to be a teacher of teachers</td>
<td>1</td>
</tr>
</tbody>
</table>

THANK YOU!
### Appendix G – Matrix Included as Revision to Expert Review Form

#### Table Organizing Questionnaire Items by Standards for Teacher Educators

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
<th>Items # in attached Questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Teaching</td>
<td>Model teaching that demonstrates content and professional knowledge, skills, and dispositions reflecting research proficiency with technology and assessment, and accepted best practices in teacher education.</td>
<td>22,23,24,25, 26,27</td>
</tr>
<tr>
<td>2 Cultural Competence</td>
<td>Applies cultural competence and promotes social justice in teacher education.</td>
<td>38,39</td>
</tr>
<tr>
<td>3 Scholarship</td>
<td>Engage in inquiry and contribute to scholarship that expands the knowledge base related to teacher education.</td>
<td>30,31,32</td>
</tr>
<tr>
<td>4 Professional Development</td>
<td>Inquire systematically into, reflect on and improve their own practice and demonstrate commitment to continuous professional development</td>
<td>34,35,36,37</td>
</tr>
<tr>
<td>5 Program Development</td>
<td>Provide leadership in developing, implementing, and evaluating teacher education programs that are rigorous, relevant, and grounded in theory, research and best practice.</td>
<td>33</td>
</tr>
<tr>
<td>6 Collaboration</td>
<td>Collaborate regularly and in significant ways with relevant stakeholders to improve teaching, research, and student learning.</td>
<td>38</td>
</tr>
<tr>
<td>7 Public Advocacy</td>
<td>Serve as informed, constructive advocates for high quality education for all students.</td>
<td>39,40</td>
</tr>
<tr>
<td>8 Teacher Education Profession</td>
<td>Contribute to improving the teacher education profession.</td>
<td>41</td>
</tr>
<tr>
<td>9 Vision</td>
<td>Contribute to creating visions for teaching, learning, and teacher education that take into account such issues as technology, systems thinking and world views.</td>
<td>42,43,44</td>
</tr>
</tbody>
</table>

*Figure 2.1: Standards for Teacher Educators (Association of Teacher Educators, 2009)*