

**THE DEVELOPMENT AND PSYCHOMETRIC ANALYSIS OF THE
CONCEPTUAL LEVEL TEACHER BEHAVIOR OBSERVATION TOOL**

A Dissertation

by

BARBARA S. HOLLINGSHEAD

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2006

Major Subject: Curriculum and Instruction

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Approved by:

Chair of Committee,	Elizabeth Foster
Committee Members,	John Helfeldt
	Patrick Slattery
	Luana Zellner
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ABSTRACT

The Development and Psychometric Analysis of the Conceptual Level Teacher Behavior
Observation Tool. (December 2006)

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The research literature is replete with information about the teacher shortage. The connection between teacher shortages and teacher classroom effectiveness with student achievement substantiates the need for interventions. Research has identified the potential of developmental mentoring and supervision programs for increasing teacher effectiveness, teacher retention, and student achievement.

The purpose of this study was to develop and to analyze the psychometric properties of the Conceptual Level Teacher Behavior Observation Tool (CLTBOT). The purpose of this study was important because the development of the CLTBOT filled a void in the literature for an observation tool that would evaluate teacher behaviors in the conceptual domain. The potential use for these data is tied to mentoring or supervisory practices designed specifically for the teacher's current need for structure, as well as for showing evidence of growth resulting from program activities.

This study was organized into three steps. Step one focused on the development of the CLTBOT. Step two, of this study, explored the validity of the first draft of the CLTBOT in a pilot study. The pilot study indicated a moderate association between an

adapted version of Hunt's Paragraph Completion Method (PCM), the established measure for conceptual development, and the CLTBOT, the focal instrument of this study. The pilot proved an essential step in the process of developing and analyzing the CLTBOT as revisions were made following the results. Step three was the research study designed to answer the research questions. Research question one required an item by item analysis of the CLTBOT. Cohen's kappa coefficients of between .699 and .867 demonstrated that the two raters' scores were consistent. Research question two was answered with evaluations of the CLTBOT by two experts who awarded high ratings for the items based on relevance and clarity. A Cramer's *V* coefficient of .56 revealed a strong relationship between the CLTBOT and the PCM, establishing evidence for concurrent validity and answering research question three. The results provided preliminary validity and reliability evidence for the use of the Conceptual Level Teacher Behavior Observation Tool (CLTBOT).

DEDICATION

To my mother, Annemarie Häusler Wheeler, who lived the essence of John Dewey's "lifelong learner". When Alzheimer's disease cut short her lifelong pursuit for knowledge, I took up her quest, growing in the joy of discovery. Through my efforts to be an example to my children and to my students, I hope to honor her.

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With this opportunity, I would like to acknowledge the time and efforts of my committee members, John Helfeldt, Patrick Slattery, and Luana Zellner, and extend my appreciation for their direction. A special thanks goes to Elizabeth Foster, the chair of this committee, whose expertise and guidance was invaluable; her friendship, priceless. In their classes I learned that education is more than learning content, and when challenged, that growth and development is possible. Their tough questions pushed me to consider alternative perspectives and possibilities.

Data collection for this study would not have been possible without the assistance of special individuals. I thank Mary Wilson whose willingness to be trained as an observer and whose diligence and thoroughness in completing her assignment contributed greatly to its success. Thanks are not adequate for Lucy Larrison, whose assistance permitted me to overcome obstacles and assured that I would meet my goal for completing this dissertation by my self imposed deadline. Her support and assistance exemplified the true meaning of mentor.

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CHAPTER I

INTRODUCTION

Chapter I is the introduction to this study. Sections contained in the chapter are background information, statement of problem, statement of purpose, research questions, theoretical framework of the study, significance of the study, and summary.

Background Information

The purpose of this study was to develop and to analyze the psychometric properties of a teacher observation instrument designed to identify the conceptual level of teachers with the potential for enhancing mentoring and supervision programs established for increasing both teacher effectiveness and teacher retention. The background information in this section explains the need for quality teacher mentoring and supervision programs.

Teaching, historically viewed as a noble profession, is in crisis today. The teacher shortage is well documented. To address this shortage, administrators will have to hire 200,000 teachers annually for the next ten years, in part, as a result of increasing student enrollments and because of increasing numbers of teachers retiring (Kaplan & Owings, 2004; Minarik, Thornton, & Perrault, 2003). Ingersoll and Smith (2003) argue, however, that the primary cause of the teacher shortage is teacher attrition.

This dissertation follows the style of *American Educational Research Journal*.

Studies report that between a third and half of all teachers leave within the first 5 years (Darling-Hammond, 2003; Ingersoll & Smith, 2003, 2004; Kaplan & Owings, 2004; Minarik, Thornton, & Perrault, 2003). In Texas, Herbert and Ramsay (2004) note that the number of teachers certified each year increases, but the attrition rate continues to increase, at the same time, sustaining shortages.

The numbers of new teachers in Texas have been increasing since 2000, according to Herbert (2004). Herbert and Ramsay (2004) reported that in 2002, approximately 290,000 teachers were employed in Texas public schools. However, there were approximately 420,000 individuals with valid Texas teaching certificates. Over 20,000 new educators were certified in Texas in 2003, which did not include out-of state teachers seeking certification. Still, a shortage of teachers exists in Texas as in much of the nation. Fuller (2002) calculated teacher demand with a formula based on the number of students, student-teacher ratios, and the number of teachers that left the profession. His analysis concluded that much of the demand each year for new educators in Texas is due to teacher attrition and that current trends suggest that the teacher attrition rate will continue to increase. Strayhorn (2004) reported that 37,000 Texas teachers left the profession in 2004 for other professions or for retirement. Furthermore, of those 37,000, forty five percent had five or fewer years of experience. Thus, a large number of new educators must be prepared to replace the teachers that subsequently leave teaching. Herbert and Ramsay (2004) draw an analogy to an open drain in a sink: “the sink will never be completely full until the drain is plugged” (p.5).

The effects of this crisis are far reaching. The costs of teacher attrition and turnover create a heavy burden for school districts. The Texas Center for Educational Research (2000) estimated that the average annual teacher turnover rate of 15% increases to a 40% turnover rate for teachers in their first three years and costs the state \$329 million a year or \$8,000 per teacher. Models for estimating turnover costs reported these costs conservatively at between 25% and 30% of the leaver's annual salary. Add together the costs associated with termination, recruitment and hiring, substitutes, learning curve loss, and training, and the actual cost of teacher turnover could be as high as twice the annual salary and benefits of the leaver, according to the Texas Center for Educational Research.

In addition to the financial costs of teacher attrition and turnover, there are other undesirable effects associated with it. Teacher attrition and turnover often force administrators to hire inexperienced and uncertified teachers. This practice puts students at an academic disadvantage when compared to their counterparts with certified teachers (Darling-Hammond, 2000; Laczko-Kerr & Berliner, 2003; Strayhorn, 2004). Researchers and politicians alike agree that teachers make a difference in student achievement (U.S. Department of Education, 2005; Wenglinsky, 2002; Wong, 2004). If teachers make a difference in student achievement, then understanding what contributes to teacher effectiveness is central to improving student outcomes.

Statement of Problem

How do we retain teachers while increasing teacher effectiveness? Quality mentoring programs influence both outcomes positively (Glickman, Gordon, & Ross-

Gordon, 2005; Ingersoll & Smith, 2004; Odell & Huling, 2000; Reiman & Thies-Sprinthall, 1998). Quality mentoring programs grounded in developmental theories recognize individual differences in teachers and seek to establish goals and practices specifically designed for the growth and development of each teacher (Glickman, Gordon, & Ross-Gordon, 2005; Reiman & Thies-Sprinthall, 1998). Quality mentoring programs are based not on episodic professional activities, but on a sound framework offering a sustained developmental approach for each teacher. A framework that identifies and describes quality mentoring practices, as well as evaluates program activities provides the “guidance for program modification and refinement” (Odell & Huling, 2000, p.25).

This study focused on one mentoring practice in the Texas A&M University Mentoring Research Collaborative for Learning and Development: determining the educator’s conceptual developmental level for designing an individualized plan for mentoring and for assessing growth. The connection between developmental level and teaching behaviors has been established in numerous studies that concluded, also, that higher stages predict teaching that is more effective (Harrison, 1976; Hunt, 1971; 1976; Reiman & Peace, 2002; Reiman & Watson, 1999). The instrument most often used to establish a base of knowledge as to conceptual level is Hunt, Butler, Noy, and Rosser’s (1978) Paragraph Completion Method (PCM). As a self-report instrument, the PCM offers no direct link to teacher behaviors. This study attempts to address the deficiencies of such an instrument by proposing an alternative that assesses teacher behaviors through formal observation.

The purpose of this study was to develop and analyze the psychometric properties of an observation instrument for identifying teacher classroom behaviors that indicate the educator's current conceptual level. The purpose of the proposed instrument is to provide mentors and supervisors with knowledge about the teacher's current conceptual level to assist them to accurately match the mentoring and supervisory approach to the needs of the educator. Initially in the mentoring or supervisory process, it is essential to identify the conceptual level of the teacher for establishing mentoring or supervisory goals and activities (Glickman, Gordon, & Ross-Gordon, 2005; Reiman & Thies-Sprinthall, 1998). Equally as important, assessing the conceptual level of the teacher throughout the mentoring or supervisory process allows the mentor or supervisor to measure teacher change, as well as to evaluate the mentoring and supervisory practices. This data provides the mentor or supervisor information to modify the developmental approach and to revise goals and activities. The educator benefits from this knowledge, as well, having the opportunity to reflect on teaching behaviors and to participate in establishing supervisory goals intended to promote growth and development.

Statement of Purpose

The purpose of this study was to describe the development and psychometric analysis of the Conceptual Level Teacher Behavior Observation Tool (CLTBOT). Filling a void in the literature for an instrument that would suggest conceptual levels of teachers in a classroom observation setting, the CLTBOT was created as a tool to assist mentors and supervisors in individualizing goals and activities, and to potentially increase successful supervisory outcomes. In order to make accurate decisions about

supervisory goals, activities, and strategies based on the results of this assessment, it is imperative that this instrument is valid (Johnson & Christensen, 2004). Interpretations resulting from data obtained with this instrument must be supported with empirical evidence. It is critical that this instrument measure what it was intended to “measure for the particular people in a particular context and that the interpretations we make on the basis of the test scores are correct” (p.140). “Reliability is no guarantee of validity”, but “if you want validity, you must have reliability” (p.133). Reliability and validity are the psychometric properties that must be established when developing a new instrument. Reliability refers to the overall consistency of the new observation instrument. Collecting validity evidence strengthens the confidence placed in the instrument’s results, as well as in the interpretations and actions based on those results. Although validity refers to accumulated evidence, concurrent validity is crucial to the validation of this assessment as a measurement of the construct. The construct, which is the focus of this study, is conceptual level.

Research Questions

1. What is the reliability of the CLTBOT?
2. What is the content validity of the CLTBOT?
3. What is the concurrent validity of the CLTBOT when compared to the Paragraph Completion Method (PCM)?

Theoretical Framework of the Study

This study is grounded in cognitive development theory, specifically, in the domain of conceptual development. Cognitive development theory suggests that

cognitive growth is represented by structures of patterns of thinking. Conceptual development describes the structure of concepts that an individual uses to organize information about the world. Individuals might view the world through a lens that is less complex to one of greater complexity depending on their current conceptual level. Conceptual development is the subject of this study for its potential to predict teaching behaviors. Higher stages are suggestive of higher problem solving skills and complex teaching behaviors that contribute to teacher effectiveness. Teacher growth and development is possible in a developmental mentoring or supervision program and assessing the supervisee or novice teacher's conceptual level enhances the supervisor or mentor's capacity for nurturing growth. With this knowledge, the supervisor or mentor aligns the supervisory approach to meet the teacher's individual developmental and learning needs. The proposed instrument, the CLTBOT, presents an alternative for identifying conceptual level through observations of teacher classroom behaviors. This shared data offers the mentor and educator an opportunity to collaborate in establishing goals for increasing the efficacy of developmental mentoring or supervisory practices. In turn, a successful program has the potential to increase teacher retention, in addition to teacher effectiveness.

The following operational definitions are intended for use throughout this study.

Alternative certification program – prepares students with baccalaureate degrees to teach and are offered generally by education service centers, community colleges, and some school districts (Herbert, 2004).

Content validity – “The extent to which items on a test or scale match the behavior, skill, or affect the researcher intends them to measure” (Merriam & Simpson, 2000, p.226).

Concurrent validity – the extent of the relationship between the focal test scores and the scores of an established test of the same construct.

Developmental supervision and mentoring – interventions that promote individual and schoolwide change by encouraging reflection and providing opportunities for personal and professional growth, extended over considerable time (Reiman & Thies-Sprinthall, 1998).

Discourse – refers to “practices (composed of ideas, ideologies, attitudes, courses of action, and terms of reference) that systematically constitute the subjects and objects of which they speak” (Schwandt, 2001, p.58).

Leaver – refers to a teacher leaving the profession (Texas Center for Educational Research, 2000).

Mentors – “experienced teachers who have as part of their professional assignment the mentoring of preservice or beginning teachers as they are learning to teach” (Odell & Huling, 2000, p.xv).

Mentoring – “professional practice that occurs in the context of the teaching whenever an experienced teacher supports, challenges, and guides novice teachers in their teaching practice” (Odell & Huling, 2000, p. xv).

Neo-liberalism – “a market-centered philosophy of life, in which human beings and their actions are understood in terms of their market value and participation, intense

competition is viewed as necessary, and virtue is aligned with entrepreneurship”

(Fenwick, 2003, p.335).

Novices – “preservice and beginning teachers in the profession” (Odell & Huling, 2000, p.xv).

The words *novice*, *beginning* and *new* educator are used interchangeably in this paper.

Post-baccalaureate program – typically offered by universities to students with undergraduate degrees (Herbert, 2004).

Post-structuralism – Growing out of structuralism, post-structuralism “attack[s] at the level of discourse where it works to reveal the oppression of specific discursive practices” (Pinar, Reynolds, Slattery, & Taubman, 2002, p.464).

Psychometric properties – empirical evidence describing the validity and reliability of a scale or instrument (Litwin, 1995).

Supervisors – refers to professionals that have the knowledge of adult development, that possess interpersonal skills, and have the “technical skills in observing, planning, assessing, and evaluating instructional improvement” (Glickman, Gordon, & Ross-Gordon, 2005, p.9).

Traditional undergraduate program – refers to a four-year program that prepares undergraduates to master subject area content and pedagogical practices (Herbert, 2004).

Significance of the Study

The objective of a developmental mentoring or supervision program is to promote individual growth by increasing the person’s level of operation, the depth of intellectual engagement, and by improving quality of decision-making (Reiman & Thies-Sprinthall,

1998). Researchers have concluded that these qualities are associated with effective teaching (Hunt, 1971, 1976; Miller, 1981; Reiman, 1993; Reiman & Peace, 2002) and with teacher retention (Glickman, Gordon, & Ross-Gordon, 2005; Ingersoll & Smith, 2004; Odell & Huling, 2000; Reiman & Thies-Sprinthall, 1998). By individualizing the supervisory activities according to the developmental and learning needs of the learner, the teacher is likely to progress to higher levels of cognitive development in this more appropriate environment. A developmental theoretical framework guides this effort. Mentors and supervisors utilize instruments that assess teacher developmental levels to assist them in individualizing goals and creating individual approaches that support each teacher's goals for personal and professional growth.

Instruments exist in the literature for ascertaining levels of cognitive development. Examples are the Defining Issues Test that measures moral/ethical judgment (Rest, Narvaez, Bebeau, & Thoma, 1999), the Sentence Completion Test that assesses ego judgment (Loevinger, 1998), and the Paragraph Completion Method that is the recognized standard for measuring conceptual thinking (Hunt, Butler, Noy, & Rosser, 1978). All three cognitive development assessment tools appraise thinking and problem solving abilities and are useful for predicting teaching behaviors (Glickman, Gordon, & Ross-Gordon, 2005; Harrison, 1976; Hunt & Joyce, 1967; Miller, 1981; Reiman, 1993; Reiman & Thies-Sprinthall, 1998). The Sentence Completion Test and the Paragraph Completion Method require written responses and some training for scoring. The Defining Issues Test is an objective test, offering an alternative to the self-report tests. Yet, Berliner (2005) argues that there are dimensions of teaching that are difficult to

judge and can only be assessed through observation of teaching behaviors. However, instruments that measure teacher classroom behaviors in these domains are lacking (Johnson, 2004). An instrument such as the proposed Conceptual Level Teacher Behavior Observation Tool (CLTBOT) has the potential to: (1) Suggest conceptual levels by observing teacher classroom behaviors, offering supervisors and mentors information for individualizing the support for teachers in developmental mentoring or supervision programs, (2) Provide the novice teacher or supervisee with knowledge for personal reflection, as well as for participating with the supervisor in developing the supervisory goals, (3) Identify changes in conceptual development, adding to information for the evaluation of program goals and activities. Successful developmental supervision and mentoring programs have the potential for addressing, effectively, both teacher retention and teacher effectiveness.

Summary

Although the numbers of certified teachers increase each year, a shortage exists, in part, to increasing attrition rates (Herbert & Ramsay, 2004; Ingersoll & Smith, 2003; Smith & Ingersoll, 2004). As a result, many classrooms are staffed with inexperienced and uncertified teachers (Strayhorn, 2004). Ineffective teachers influence student achievement, negatively (Olson, 2004). Quality developmental mentoring and supervision programs address both the personal and professional needs of educators through meaningful individualized goals and activities (Reiman & Thies-Sprinthall, 1998). Given the research concluding that developmental levels of teachers often predict their teaching behaviors and that higher levels are associated with effective teaching

(Hunt, 1971, 1976; Miller, 1981; Reiman & Peace, 2002), assessment of teacher conceptual development is useful for establishing interventions for promoting higher levels of growth. The mentor or supervisor uses this information to individualize the developmental mentoring or supervisory approach for the teacher and to show growth in critical areas of instructional decision making during the mentoring or supervisory process. An instrument that provides data for the mentor or supervisor that accurately measures the conceptual level of the teacher through real time observation is needed. The proposed instrument, the CLTBOT, will improve potentially, the mentor and supervisor's capacity for creating and modifying a more favorable plan for reaching desired outcomes and for advancing the overall program goals for increasing teacher effectiveness, thus improving teacher retention.

CHAPTER II

REVIEW OF LITERATURE

Introduction

The purpose of this study was to develop and analyze the psychometric properties of an observation instrument, the Conceptual Level Teacher Behavior Observation Tool (CLTBOT) that would suggest a teacher's conceptual level. The potential use for this data is tied to mentoring and supervisory practices designed specifically for the teacher's current need for structure, as well as for showing evidence of growth resulting from program activities. The link between conceptual level and teacher behaviors is explained and the need for developmental mentoring programs, explored in this literature review.

This literature review examines current issues of teacher retention and effectiveness, as well as the theoretical framework for this study. This literature review is organized into these components: teacher retention and effectiveness, overview of cognitive development theory, conceptual systems theory, alternative perspectives of developmental theories, teacher supervision, supervision viewed through a post-structural lens, the Texas A&M University Mentoring Research Collaborative for Learning and Development, and assessment of conceptual levels. The summary to this chapter argues that there is a lack of studies that utilize instruments for assessing teacher classroom behaviors in cognitive domains, confirming the need to develop an instrument like the CLTBOT. The psychometric properties of the Conceptual Level Teacher

Behavior Observation Tool (CLTBOT) are evaluated by evidence collected answering the following research questions:

1. What is the reliability of the CLTBOT?
2. What is the content validity of the CLTBOT?
3. What is the concurrent validity of the CLTBOT when compared to the Paragraph Completion Method (PCM)?

Teacher Retention and Effectiveness

Relevant to the need for mentoring and supervision programs and tools that would increase program success, this section focuses on factors that contribute to teacher attrition and retention, as well as to teacher effectiveness in the classroom.

Developmental mentoring and supervision programs mediate the effects of many of the negative factors to improve teacher retention and increase teacher effectiveness.

The research literature is replete with information about the teacher shortage. Ingersoll and Smith (2003) argued that the primary cause of this shortage is teacher attrition. Kaplan and Owings (2004) noted that 9% of teachers leave before completing their first year of teaching and more than 20% leave within three years. More astonishing, other researchers reported that between a third and half of all teachers leave within the first 5 years (Darling-Hammond, 2003; Ingersoll & Smith, 2003, 2004; Minarik, Thornton, & Perrault, 2003). Herbert and Ramsay (2004) suggested that urban schools with high percentages of minority and economically disadvantaged students have high teacher turnover and attrition rates. Moreover, many minority and low-

income students in urban districts are subjected to ineffective teachers when urban districts' are unable to recruit and retain qualified teachers (Darling-Hammond, 2004).

Beginning teachers often feel overwhelmed, isolated, and inadequate (Brock & Grady, 1998; Pajak, 2001). Often times, they are given the worst teaching assignments, the most challenging students to teach, inadequate supplies, and the worst classrooms, if they get a classroom at all. Meister and Melnick (2003) and O'Neil (2004) found that a large majority of beginning teachers are not well prepared to deal with problem behaviors. Because they lack skills, comfort, and confidence in classroom management, O'Neil argued that about one-third of teachers quit during their first five years.

The expectations for new educators are high. "We expect brand-new, just-out-of-the-wrapper teachers to assume the same responsibilities and duties as our most seasoned professional, and we expect them to carry out those duties with the same level of expertise and within the same time constraints" (Renard, 2003, p.62). In reality, beginning teachers are developing competencies. They are learning to build positive relationships with students and parents (Reiman & Sprinthall, 1998). They are learning to be more skillful in lesson planning, instructional strategies, classroom management, and assessment. In addition to these learning needs, beginning teachers need basic information about rules, procedures, routines, and the culture of the school. They need help with time management and organization.

Beginning teachers take longer to perform all of the tasks expected of them, so it is not surprising that they feel overwhelmed and sometimes demoralized to the point of deciding that teaching is an impossible and unrewarding job (Renard, 2003). All

teachers need “preparation, support, adequate teaching conditions, and respect” (Scherer, 2003, p.5). Quality mentoring programs address the needs of beginning teachers (Brown, 2003; Smith & Ingersoll, 2004). A good developmental mentoring program supports and challenges new educators to grow and develop personally and professionally. Given this opportunity, novice teachers are more likely to gain awareness of their students and their students’ needs, increasing their effectiveness in the classroom and their satisfaction with teaching.

Teacher Preparation

In 2002, U.S. Secretary of Education Rod Paige’s answer to the teacher shortage crisis was to advocate that teacher preparation programs reduce the number of pedagogy courses needed by perspective teachers to accelerate the program for certification, arguing that teachers with solid content knowledge and high verbal ability have the greatest influence on student achievement (U.S. Department of Education, 2002). However, Laczko-Kerr and Berliner (2003) argued that pedagogical knowledge is essential and that research shows teachers having pedagogical training outperform those that do not. Laczdo-Kerr and Berliner suggested that some alternative teacher certification programs provide adequate training in subject matter and pedagogy, but some programs are very inadequate. Still, alternative programs certify a large number of teachers. In other research, Darling-Hammond (2003) reported that alternatively certified teachers lacking adequate initial preparation leave the profession at higher rates than their counterparts that are prepared in traditional teacher education programs. Alternative programs like the Massachusetts Institute for New Teachers program

recorded one-half of all recruits leaving within three years, while the Teach for America recruits in Houston left at a rate of 80% after two years, according to Darling-Hammond.

The Texas 1999-2003 beginning teacher data illustrated that teacher demographics have not changed significantly, but their preparation routes have (Herbert, 2004). Table 1 shows this distribution.

Table 1

Preparation Routes by Gender for Beginning Teachers in Texas

	1999			2003		
	Female	Male	% All beginning teachers	Female	Male	% All beginning teachers
Traditional undergraduate programs	69%	54%	66%	49%	34%	46%
Alternative certification programs	16%	23%	17%	33%	41%	35%
Post-baccalaureate programs	15%	23%	17%	18%	25%	19%

Note. From "Production and Retention of Beginning Teachers from 1999 to 2003: A comparison of preparation routes," by K. Herbert, State Board for Educator Certification: Austin, TX.

A large number of certified Texas teachers never step into a classroom. The percentage of post-baccalaureate teachers that did not teach during this time was 14-15%; for teachers prepared in traditional undergraduate programs, it was 10%, and for alternatively certified teachers, it was six percent, according to Herbert (2004). Herbert reported that after 5 years, the loss of Texas teachers in the 1998 cohort was 34% for the

alternatively certified group compared to 34% for the post-baccalaureate group, and 29% for the undergraduate group.

Teach for America, an alternative program known for drawing teaching candidates from top universities, reported high attrition rates (Laczko-Kerr & Berliner, 2003).

These college graduates are placed in the most challenging assignments lacking knowledge about classroom management and teaching strategies to guide their practice. Teachers entering the classroom without any student teaching are more likely to leave teaching than are their counterparts (Darling-Hammond, 2003). According to Darling-Hammond (2004), “in the context of today’s higher standards and the growing diversity of students in schools, the lack of adequate teacher preparation for so many teachers in urban and poor rural schools is troubling” (p.616).

Students from ethnic and minority cultures comprise the largest percentage of students in most urban school districts (Cohen & Lotan, 2004; Marshall, 1996). However, their teachers are most often from the majority (White) culture. This presents challenges for both teachers and students, noted Marshall. When teachers are unaware of their students’ cultures and how that influences the teaching/learning exchange, they rely on teaching practices that are congruent with their own culture. According to Marshall, this is a factor in the lack of achievement for many African American students. Darling-Hammond (2004) concluded, “much of the difference in school achievement found between African American students and others is due to the effects of substantially different school opportunities, in particular greatly disparate access to high-quality teachers and teaching” (p. 613).

Wenglinsky (2002) discovered that students whose teachers were skilled in using a variety of teaching strategies specific for meeting individual needs and the needs of different groups of students outperformed students whose teachers did not have training. Inadequate preparation affects teacher retention rates, as well as negatively influencing student outcomes. Teachers that are unaware of their students' needs and unprepared to meet those needs are more likely to leave the profession without interventions for assisting them to develop competencies. Despite current policies designed to increase the numbers of teachers by lowering barriers for individuals to become certified to teach, the effort to address the teacher shortage is thwarted when those individuals leave the profession at high rates because they were not prepared to teach the content to a diverse student population (Berry, Hoke, & Hirsch, 2004).

Certification

Studies showed teacher preparation and certification are most strongly related to student achievement when poverty status and language status are controlled for (Darling-Hammond, 2000). Darling-Hammond reported a negative correlation between uncertified teachers and student performance on skills tests and a positive correlation between certified teachers and student achievement. According to Laczko-Kerr and Berliner (2003), students with certified teachers scored higher than students with uncertified teachers, including the Teach for America recruits. Their research concluded, "students pay a 20 percent penalty in academic growth for each year of placement with uncertified teachers" (p.38). They found that in several New York schools serving poor students, less than half of the teachers were certified for the courses

they taught and in the worst performing Chicago schools, 22% of teachers were uncertified. Similarly, Berry, Hoke, and Hirsch (2004) noted that poor and minority students are more likely to be taught by unqualified teachers. Fuller (2002) reported that, in Texas, students taught by certified teachers were more likely to pass skills tests and Strayhorn (2004) found that in 2003, Texas high schools with the lowest percent of students passing the Texas Assessment of Knowledge and Skills (TAKS) tests were more likely to have educators teaching outside of their field. In addition to the negative impact that out of field teaching had on student performance in the 2002-2003 school year, the report concluded a similarly negative impact on student performance when associated with teacher turnover.

Experience

Darling-Hammond (2004) suggested that first year teachers are not as effective as their experienced counterparts are, and that their effectiveness increases only after a few years of teaching. Strayhorn (2004) indicated a link in 2003 between teacher experience and the percentage of students that passed the Texas Assessment of Knowledge and Skills (TAKS) exam, which measures the statewide curriculum. Teachers with at least five years experience produced better results. This lack of experience influences teacher retention, as well. According to Darling-Hammond (2003), new teachers leave the profession at rates of over 30% the first five years. Moreover, new teachers leave poor schools as much as 50% more than affluent schools.

Teacher shortages have implications for all stakeholders in education. Students fare poorly in classes taught by less effective instructors, the cost of managing the high

turnover rate is prohibitive, and the school climate suffers which contributes to increased teacher turnover. The current practice of lowering barriers to the teaching profession by awarding teaching certificates for subject mastery to the exclusion of pedagogical proficiency will not address teacher effectiveness and retention. To be effective, teachers should be knowledgeable about teaching strategies that have been demonstrated to improve the learning of diverse student populations, as well as having mastery of subject matter. There has been a tremendous growth of nontraditional preparations such as the post-baccalaureate and alternative certification programs. However, data has emerged indicating that teachers prepared by these alternative routes are leaving the profession in higher numbers compared with teachers prepared in traditional certification programs. Without support, these new teachers are likely to continue to leave the profession at high rates. Many teachers gain skills and effective strategies through experience. Many teachers, however, never gain competence, which may contribute to their decision to leave the profession within 5 years. Given the research suggesting that teacher retirement and the increasing numbers of students rank below attrition as the most important factor contributing to the teacher shortage, schools will benefit most by addressing the reasons teachers give for leaving the profession. The connection between teacher shortages and teacher classroom effectiveness with student achievement substantiates the need for interventions.

Research has identified the potential of developmental mentoring and supervision programs for increasing teacher effectiveness, teacher retention, and student achievement. This study seeks to increase the efficacy of such programs by developing

a teacher observation instrument that provides the mentor or supervisor with an understanding of the teacher's conceptual level. This data has the potential to contribute to the desired outcomes of mentoring and supervisory practices.

Overview of Cognitive Development Theory

This study views adult growth and development through the lens of Cognitive Developmental Theory. This section begins with an exploration of the history of adult development theories, followed by an overview of Cognitive Development Theory which posits that growth is qualitative and proceeds in stages. The subsequent information includes the educational views of Jean Piaget and Lev Vygotsky who influenced other developmental theorists. Cognitive Development Theory is the foundation for Conceptual Systems Theory, which provides the theoretical framework for this study.

The theoretical framework for developmental mentoring and supervision programs is located in adult growth and development theories (Glickman, Gordon, & Ross-Gordon, 2005; Reiman, 1993; Reiman & Sprinthall, 1998). Development theories that described quantitative changes in growth or how much and how quickly an individual could learn have been discarded in favor of theories conceptualizing qualitative stage changes in growth (Reiman & Thies-Sprinthall, 1998). Early theories of adult development suggested that from a growth stage perspective, adulthood represented a period of stability or gradual decline. In the early 1970's, Malcolm Knowles introduced the idea that children and adults learn differently (Knowles, Holton, & Swanson, 1998). At the same time, Jean Piaget (1972) argued that the work of developmental

psychologists was not complete with the study of adolescence and hypothesized further that cognitive structures in adults are “used differently by each person according to his particular activities” (p.11). Accordingly, cognitive development theorists proposed stage theories that changed the modern view of adult growth and development (Hunt & Joyce, 1967; Kohlberg & Hersh, 1977; Loevinger, 1966).

Jean Piaget’s work constructed the foundation for cognitive development theories (Reiman, 1993; Knowles, Holton, & Swanson, 1998). The notion that intelligence is not quantitative or based on a fixed amount of knowledge was proposed by Jean Piaget in the 1930’s but went largely unnoticed until the 1960’s (Sprinthall, Sprinthall, & Oja, 1998). His observations of children, including his own, in the JJ Rousseau Institute for Child Study in Geneva led to a new understanding of cognitive growth. That is, rather than being quantitative, intellectual growth takes place in developmental stages.

Piaget described thinking patterns for individuals interacting with the environment (Piaget, 1972). According to Piaget, each stage of cognitive growth represents a distinct pattern of thinking, qualitatively different from the other stages (Piaget, 1972; Sprinthall, Sprinthall, & Oja, 1998). Stage theory suggests that learners progress through a series of stages that are increasingly more complex (Glickman, Gordon, & Ross-Gordon, 2005). Cognitive development theory assumes that individuals construct and interpret meanings through experiences (Reiman & Thies-Sprinthall, 1998). In this view, education is not filling a passive student with information, but understanding the stage in which the learner is operating and providing appropriate experiences to nurture growth. Piaget noted that children must have sufficient experience in each stage and must move through

them sequentially.

Individuals function in cognitive stages according to their mental organization. They might occasionally employ thought processes characteristic of higher or lower stages, but the primary preference for problem solving indicates the stage of cognitive growth (Sprinthall, Sprinthall, & Oja, 1998). Interaction with the environment that stimulates cognitive growth is explained by Piaget's concept of accommodation. A learner developmentally ready for assimilating an experience from the environment is forced to accommodate or to internalize it, resulting in cognitive growth. A learner who is not cognitively ready for a certain experience will not fully assimilate and accommodate it. Reiman and Thies-Sprinthall (1998) describe assimilation and accommodation with a story of a small child who upon seeing a cow insisted that it was a dog. The child assimilated the experience into his current stage of thinking that included his understanding of dogs, but was unable to modify his preferred way of thinking to accommodate or make room for a new understanding.

Lev Vygotsky's work in Russia paralleled that of Piaget's in France. His views of cognition and of developmental stages were very similar to those of Piaget's. Contrary to Piaget's position that children construct their own development, Vygotsky conceptualized growth occurring in social interaction where discussions are essential (Sprinthall, Sprinthall, & Oja, 1998). However, Piaget's later writings acknowledged the importance of social interaction for its influence on the rate at which individuals develop (Piaget, 1972). Vygotsky's concept of zone of proximal development explains that learning is optimized by educational experiences that are slightly ahead of the

learner's present level of understanding (Reiman & Thies-Sprinthall, 1998; Sprinthall, Sprinthall, & Oja, 1998). Additionally, time is needed to practice new ways to solve problems. Both Piaget and Vygotsky suggested that cognitive growth and development are evidenced by improving thinking abilities and problem solving rather than by memorizing facts. Furthermore, they recognized that the learner benefits from support for the emotions that accompany the struggle to replace old ways of thinking with new ways. Assumptions about Cognitive Development Theory described by Foster (2003), Reiman and Thies-Sprinthall (1998), and Sprinthall, Sprinthall, and Oja, (1998), are summarized:

1. All persons process experiences through cognitive structures.
2. Cognitive development is represented in different domains.
3. Domains are independent, yet interdependent.
4. Cognitive structures are organized in a hierarchical sequence of stages or plateaus from less complex to more complex.
5. Each stage is qualitatively different.
6. The individual makes meaning from her/his experience based on current stages of development in multiple domains.
7. Each shift in stage represents a major transformation in how the person makes meaning from his/her experience.
8. Development is not automatic.
9. For growth to occur there must be action and interaction with people and the environment.

10. Without action and interaction, it is possible to remain at the same stage indefinitely.
11. There is not a reversal or regression in growth, unless there is trauma.
12. Growth can be nurtured and promoted.
13. Persons experience disequilibrium during shifts and movement.
14. New ways to view the world are assimilated and accommodated into the current mode of thinking.
15. Behaviors can be determined and predicted by a person's particular stage of development.
16. Individuals function in a primary stage and occasionally in one stage above or below the primary stage.

Conceptual Systems Theory

Regarded as the foundation for other developmental theories, cognitive development theory assumes that cognitive structures are composed of different components or substructures that are represented in developmental domains (Reiman & Thies-Sprinthall, 1998). Each developmental theory is useful for understanding differences in the states of growth evidenced by individuals. The developmental theory that guides this study is David Hunt and colleagues' Conceptual Systems Theory, which explains individuals according to the structure of concepts they utilize when organizing information about the world (Hunt & Joyce, 1967). A conceptual system is a structure that describes how an individual processes information (Hunt, 1971). Conceptual level (CL) is a characteristic illustrating cognitive complexity and interpersonal maturity.

Cognitive complexity encompasses the ability to differentiate, to discriminate, and to integrate, while interpersonal maturity relates to self-responsibility.

A framework of three stages characterizes three qualitatively different ways of solving problems on a continuum of complexity ranging from concrete to abstract (Hunt, 1971; Hunt & Joyce, 1967). Individuals functioning at a low conceptual level (CL) have difficulty defining problems and respond in a very concrete way, whereas individuals at higher conceptual levels are more abstract in their thinking. An individual functioning on a low CL is less cognitively complex, more dependent, and less able to generate concepts. Thinking is polarized according to what is right or wrong, good or bad (Hunt, Butler, Noy, & Rosser, 1978). At a moderate stage of CL development, an individual strives for independence, and is open to the ideas of others. There is an increased tolerance for differences of opinions and for uncertainty. An individual functioning on a high CL is more cognitively complex, more independent, and more capable of generating concepts (Tomlinson & Hunt, 1971). At higher CL, individuals tend to be “more flexible, more capable of using alternative solutions, [and are] more tolerant” (Hunt & Joyce, 1967, p.254). Table 2 summarizes the three levels of conceptual development according to Hunt, Butler, Noy, & Rosser’s (1978) manual.

Table 2

Characteristics for Levels of Conceptual Development

Low CL	Moderate CL	High CL
Concrete thinking	Thinking is becoming more abstract	Abstract thinking
Thinking is polarized or dichotomous	Aware of alternatives	Weighs alternatives
Does not consider others' thoughts	Concerned with own thoughts and striving for independence	Shows concern for others' ideas
Blames others	Open to other information and accepts some responsibility	Accepts full responsibility
Does not tolerate ambiguity	Increased tolerance for uncertainty and ambiguity	Tolerates ambiguity; evaluates and considers consequences
Does not question authority	Shows independence and questions authority	Evaluates all information but does not compromise values
Inflexible	Some flexibility	Flexible
No awareness of others	Awareness of self and some awareness of others	Secure in self and aware of others

Conceptual systems theory offers an approach to understanding teacher development and teaching behaviors. A number of studies have found that conceptual levels of teachers are suggestive of their behaviors in the classroom (Glickman, Gordon, & Ross-Gordon, 2005; Harrison, 1976; Hunt & Joyce, 1967; O'Keefe & Johnston, 1989; Miller, 1981; Reiman, 1993). When considering whether higher levels are preferred

over lower levels, the answer falls within the observable behaviors of the teacher who operate within either a high or low conceptual level. Teachers at lower levels are more punitive and do not vary instruction (Reiman & Thies-Sprinthall, 1998). Those at higher levels have higher problem solving abilities, vary teaching strategies, and are more flexible. Hunt and Joyce (1967) noted, “one skill important for the effective teacher is the capacity to utilize a variety of teaching patterns under appropriate circumstances” (p.253). In a review of numerous studies that focused on conceptual systems theory, Miller (1981) found support for the predictive validity of conceptual development. According to Miller, individuals depicted at a high conceptual level (CL) exhibited more empathy, a reduction in prejudice, nondirective and interdependent styles, and more autonomy. Further, they utilized an internal locus of control, longer decision latencies, better communication skills, and processed information at a higher level. Table 3 summarizes the CL characteristics of teachers revealed in the previously described studies.

Table 3

Characteristics of Teachers According to Conceptual Level

Low CL	Moderate CL	High CL
Concrete thinking	Thinking is becoming more abstract	Abstract thinking
Knowledge is fixed and true	Separates facts from theories	Knowledge is a process of successive approximations
Uses one tried and true method of teaching	Uses more than one teaching strategy	Uses a variety of teaching methods

Table 3 (Continued)

Low CL	Moderate CL	High CL
Expects compliance and is punitive toward students, often losing control of emotions	Some flexibility and tolerance for students	Flexible; high tolerance for frustration and shows tolerance and concern for students
Prefers teacher directed method such as lecture	Open to innovations and new teaching strategies	Employs student directed methods in addition to other teaching methods
Uses lower level of questioning techniques	Uses some upper level questioning techniques	Uses all levels of questioning techniques
Prefers structure and does not tolerate ambiguity	Tolerates some ambiguity and has some flexibility	Tolerates ambiguity, is flexible, and can adapt effectively to students' needs
Does not question authority	Awareness of values and strives for independence	Evaluates and makes decisions considering all data
Is not aware of students' feelings	More aware of personal feelings, but some awareness of students' feelings	Aware of students' feelings and values students' opinions
Blames students	Receptive to other information	Evaluates information, determines consequences, accepts responsibility
Does not verbalize own inadequacies	Open to criticism and aware of feelings	Evaluates criticism, shares thoughts and feelings
Does not reflect on experiences	Some reflection	Reflects on experiences, evaluates impact on students and makes changes

Table 3 (Continued)

Low CL	Moderate CL	High CL
Uses one method to assess learning; believes learning is responsibility of student	Uses more than one method to assess learning	Accepts responsibility for student learning and assesses learning using a variety of data

Researchers have linked conceptual development to behaviors in other professions. Similar to teachers, lower levels of conceptual complexity predicted less competent behavior in counselors in their capacity to provide a therapeutic environment for special needs students and a more authoritarian attitude towards patients on the part of doctors (Peace & Sprinthall, 1998).

Matching Model

Fundamental to conceptual systems theory is Hunt's (1971) matching model for constructing appropriate environments that are responsive to learners of varying conceptual levels. In the model, the environment refers to the degree of structure, or degree of organization needed by the learner (Hunt, 1971; McLachlan & Hunt, 1973; Tomlinson & Hunt, 1971). Highly structured environments provide little opportunity for learner responsibility, while low structured environments offer greater opportunities for learners to assume responsibility for the organization of the environment. The matching model proposes that low CL learners benefit from high structure, while high CL learners benefit more from low structure. In this learner-environment matching model, decisions about the environment are determined by the learner's present need for structure and

then adjusted with long-term objectives for growth and less need for structure. According to Hunt (1971), as the environment “match produces effects, the person...may change, and the match is therefore no longer appropriate” (p.8). Hunt’s concept of *reading and flexing* in this environment complements Vygotsky’s zone of proximal development as awareness of a learner’s needs and adjusting the environment by mismatching or shifting teaching strategies slightly ahead of the learner’s current level to encourage the learner to think in more complex ways. With adequate training in an ideal environment, an individual who is functioning on a low CL is expected to develop to a higher CL (Glickman, Gordon, & Ross-Gordon, 2005; Reiman, 1993; Reiman & Sprinthall, 1998).

This study seeks to add information and to strengthen the developmental approach to education, benefiting both students and teachers. It is not sufficient to know only the developmental level of students for the purpose of delivering instruction appropriately. It is essential to identify the developmental levels of educators so that mentors and supervisors have information that allows them to individualize more effectively professional development for teachers and to monitor changes in their growth.

Alternative Perspectives of Developmental Theories

Scrutiny of development theories, specifically the notion of stage theory, is situated in discourses of gender, race, and ethnicity. A number of researchers have argued that development theories do not account for gender differences suggesting that the feminine perspective is grounded in relationships and connections to others rather than in a need for autonomy (Caffarella & Olson, 1993; Gilligan, 1982; Gilligan, Ward,

Taylor, & Bardige, 1988; Noddings, 1998). Gilligan (1982) noted that women have a different point of view and moral understanding, specifically objecting to Kohlberg's moral development theory. Similarly, Hewitt (1972) questioned the applicability of conceptual systems theory for women, for which Hunt, Butler, Noy, and Rosser (1978) answered with numerous studies concluding that conceptual structures were adequate measures for both sexes. In addition to the feminine perspective, other critics found developmental stages problematic because of cultural assumptions about development, specifically that development is universal (Smagorinsky, 1995). Responding to this perspective, Nisan and Kohlberg (1982) reported that moral development is structurally universal confirmed by longitudinal and cross-sectional studies. Additionally, Rowe, Vazsonyi, & Flannery (1994) concluded that developmental processes were not specific to any U.S. racial or ethnic group.

Other scrutiny targets the claim that higher stages are optimal, when from some perspectives; they are not valued at all. Smagorinsky (1995) noted that some individuals regard their own cognitive state as advanced and others as less advanced. From this view, stage is considered an invention of the elite and educated upper class.

Acknowledging the legitimacy of developmental stages but judging higher stages in a negative way, a journal editor rejected Miller's manuscript on conceptual systems matching model suggesting that individuals with high conceptual levels promote "disagreeable social attitudes and beliefs" (Miller, 1981, p.79). Despite the many concerns raised by some researchers, numerous other researchers agree that teacher conceptual levels are predictive of teacher behaviors, that higher levels are associated

with effective teaching, and that effective teachers influence student achievement, positively (Gardiner & Schroder, 1972; Glickman, Gordon, & Ross-Gordon, 2005; Harrison, 1976; Hunt, 1971; Hunt & Joyce, 1967; Miller, 1981; O’Keefe & Johnston, 1989, Reiman & Thies-Sprinthall, 1998).

Teacher Supervision

In this section, I explore the objectives of developmental mentoring and supervision programs and their commitment to the personal and professional growth of teachers. I begin by describing both teacher and principal perceptions about traditional supervision, concluding that it functions to manage teacher performance, rather than to encourage teacher growth. I then present an alternative approach to traditional supervision, developmental mentoring and supervision, whose goal is to support teachers in their personal and professional growth. The Conceptual Level Teacher Behavior Observation Tool, the CLTBOT, was created for use in these programs for enhancing mentoring practices and outcomes.

Traditional Supervision

Ponticell and Zepeda’s (2004) study focused on teacher and principal perceptions about supervision. Results showed that the majority of teachers and principals perceived supervision and evaluation as the same process. Most principals believed that supervision consists of observing a single class, rating the teaching behaviors, and completing the observation paperwork according to district and state policies. It is followed by a postconference in which the principal explains to the teacher the teaching behaviors he/she will need to change. Principals perceived their role to be “judge of

teacher performance” and simply to make “suggestions for improvement” (p.49).

Similarly, teachers perceived the supervisory role of principals to include duties such as observing, documenting, and suggesting changes in teaching practices. Few principals described supervision as a process for supporting teachers and collaborating with them to improve their practice.

Principals perceived their supervisory responsibility to monitor and manage teachers according to accountability based teacher evaluation policies. They rate the teacher’s performance on a checklist and then inform the educator of the teaching behaviors that are targeted for improvement. Consequently, supervision is focused on managing teachers, rather than on meaningful teacher professional development. When the emphasis is on complying with directives, this type of supervision rarely encourages new learning (Ponticell & Zepeda, 2004). Meaningful adult learning does not occur by complying with rules and regulations. Adult learning is about developing new skills and knowledge and is self-directed and self-motivated (Knowles, Holton, & Swanson, 1998; Ponticell & Zepeda, 2004).

The traditional model of supervision and its evaluation component continues to be practiced, widely (Ponticell & Zepeda, 2004). Developmental theories suggest that this delivery of supervision is not effective and that meaningful change will not occur by rating teaching behaviors, alone. Supervision that enhances teacher professional development and improves classroom teaching is achieved through activities that promote teacher discussion and reflection and that provide opportunities for practice (Reiman, 1999; Reiman & Peace, 2002; Reiman & Thies-Sprinthall, 1998).

Developmental Supervision and Mentoring

The connection between stage development and teaching behaviors is important to recognize, as this knowledge differentiates the goals of developmental supervision from those of traditional supervision. For traditional supervision, the purpose is to observe teachers and inform them of behaviors targeted for improvement. For developmental supervision, the goal is to support and challenge teachers through meaningful activities that encourage ongoing growth and development. The professional growth of teachers is desired as it is directly related to student achievement (Glickman, Gordon, & Ross-Gordon, 2005; Harrison, 1976; Hunt, 1971; O'Keefe & Johnston, 1989; Miller, 1981). However, growth and development does not occur during ordinary teacher training programs or because of maturation (Joyce & Showers, 2002; Peace & Sprinthall, 1998; Reiman & Thies-Sprinthall, 1998). Purposeful activities are required to affect meaningful change and must be individualized according to the teacher's developmental level and needs. Those activities must engage both the environment and the teacher. Interaction between the two is essential. Three groups of educators benefit from activities that encourage developmental change. Novice teachers whose identified needs were described earlier and who are supported by mentors in a developmental mentoring program are less likely to leave the profession (Ingersoll & Smith, 2004; Odell & Huling, 2000; Smith & Ingersoll, 2004). Equally as critical, experienced teachers who have demonstrated a lack of effectiveness in the classroom benefit from developmental supervisory activities intended to improve their instruction and to promote growth in critical areas of decision-making. Group three includes the mentor or supervisor.

Evidence of mentor growth as a result of mentoring behaviors has been regularly documented (Johnson, 2004; Reiman, 1993; Thies-Sprinthall, 1984). The proposed observation instrument, the CLTBOT created to assess teacher conceptual level during classroom observations, has the potential to be useful in both mentoring and supervision by providing essential data that enhances the mentor or supervisor's ability to work with the teacher.

Clinical Supervision

Developmental supervision has its roots in the early work in clinical supervision, attributed to Morris Cogan and Robert Goldhammer who conducted research at Harvard University in the 1960's (Pajak, 2002; Reiman & Thies-Sprinthall, 1998). It is important to distinguish between clinical supervision and the traditional supervision described earlier in this paper. Clinical supervision differs from the traditional supervision that makes judgments about teaching behaviors by providing nonjudgmental assistance for improving instruction (Glickman, Gordon, & Ross-Gordon, 2005). Described by Reiman and Thies-Sprinthall (1998), Cogan's clinical supervision is a cycle of assistance consisting of eight phases:

1. Establishing a helping and trusting relationship – This is a getting acquainted phase where learning styles are discussed and roles and expectations established.
2. Planning lessons and units with teacher – Objectives and student outcomes are discussed, in addition to special circumstances and teaching strategies.
3. Planning for the observation – A preconference that determines the purpose for the observation and how data will be collected.

4. Observing the instruction – Data is collected.
5. Analyzing the data for important patterns in the teaching process – Both teacher and supervisor have opportunities to analyze the instruction.
6. Planning for the conference – Both teacher and supervisor develop plans to focus the postconference on the data collected during the observation.
7. Conferencing to review the classroom lesson – The postconference involving both the teacher and supervisor.
8. Renewed planning – Planning for professional and personal development in the next cycle of supervision completes this cycle of supervision.

Current developmental mentoring and supervision programs have adapted and incorporated many practices such as the clinical cycle of assistance and the collegial relationship between supervisor and teacher.

Framework for Developmental Mentoring and Supervision

The framework for developmental mentoring and supervision models such as the program delivered through the Texas A&M University Mentoring Research Collaborative for Learning and Development consists of components grounded in adult developmental theories. Components that are described in this section, such as the matching model, the underlying theory described previously in this paper, the teaching/learning framework, and the supervisory approach contribute to the goals of developmental mentoring and supervision programs.

Matching Model for Educators

Hunt (1987) proposed that the conceptual systems theory and later, the conceptual level matching model, offered to educators theories they could apply to practice. The matching model legitimized the teaching practices of effective educators who recognized from experience that a variety of teaching approaches were necessary to reach all students. According to Hunt (1971), “a theoretical model should serve as a guide in setting long-term goals, it should specify short-term goals, and suggest procedures for attempting to reach these goals” (p. 17). The purpose of Hunt’s conceptual systems matching model is to match each learner with the most effective environment. It is determining the most effective approach for reaching the goals set for each learner. The objective is not general improvement, but rather specific enough to describe the “desired state toward which the intervention is aimed” (p. 18).

The type of environment or the amount of structure that mentors or supervisors provide new educators during the supervision process are important for supporting them and for promoting their personal and professional development. Highly structured environments present little opportunity for teacher responsibility, while low structured environments offer greater opportunities for teachers to assume responsibility. Teachers with high conceptual development require low structure from their supervisors or mentors. Conversely, teachers identified with low conceptual development require a high amount of structure and direction from their mentor or supervisor (Reiman & Sprinthall, 1998). However, simply matching a learner with an environment will not accomplish long term goals. Interventions designed to gradually introduce autonomous

activities provide the mismatch needed to encourage conceptual development.

Throughout the process, the mentor or supervisor adapts the supervisory approach to the educator's changing level of development and needs.

Utilizing the matching model in developmental mentoring and supervision programs assumes that teachers vary in cognitive characteristics, warranting aligning the mentoring or supervisory approach to these differences. An analysis of the teacher's current developmental level supplies data to the mentor for designing interventions that will promote change, as growth will not occur only because of regular instruction or maturation (Hunt, 1971; Reiman, 1993; Reiman & Thies-Sprinthall, 1998). The new instrument, the CLTBOT, contributes to this component of developmental mentoring and supervision by analyzing observable teacher classroom behaviors and suggesting the teacher's conceptual level.

Teaching/Learning Framework

A developmental explanation for the ability of educators to respond and adapt to situations in the classroom and to the claim that developmental growth is possible maintains, also, that this growth is optimized under certain environments (Reiman, 1993). The assumption that teachers' conceptual levels predict their behaviors in the classroom and that higher levels are associated with the capacity to respond and to adapt provides mentors and supervisors with a theoretical base to create plans in practice that nurture this growth. To promote higher stages of cognitive development in adults, training under certain conditions is necessary (Reiman, 1993; Reiman, 1999; Reiman & Peace, 2002; Reiman & Thies-Sprinthall, 1998). Sprinthall and Thies-Sprinthall's five

conditions support a mentor or supervisor's efforts to promote teacher development (Reiman & Thies-Sprinthall, 1998). Studies conducted by these researchers have revealed, also, that mentors experience developmental growth, as well, by virtue of their participation in mentoring practices under these conditions. *Role Taking* is participation in a complex, educative activity such as teaching, counseling, and mentoring that challenges an individual to construct new meanings and learn new skills. This action precedes the reflection that grows out of it. *Reflection* enables the individual to make meaning of new experiences and to self assess, leading to changes in behavior. Readings, discussions, and journaling with other individuals are examples of reflective activities. The importance of this social experience was proposed by Vygotsky as a condition for growth and later recognized by Reiman and colleagues who discovered that new experiences without reflection have no impact on the developmental level of the adult learner. Because reflecting is a sophisticated activity, it cannot be assumed that educators can engage adequately in this activity. As a component of a developmental program, mentors and supervisors must guide novice teachers and other educators in reflection. Mentors and supervisors guide teachers in reflecting on more than curriculum and lessons, but also on their feelings, student feelings, philosophy of teaching and learning, as well as all aspects of teacher decision-making. *Balance* refers to the premise that action and reflection should be balanced to increase success. Guided reflection that occurs soon after accepting a new role enhances the growth process. *Continuity* refers to continuous cycles of action and reflection over a long period of time for promoting development. Addressed by both Piaget and Vygotsky and confirmed by Reiman and

colleagues, learning is optimized when the learning activities are sustained over longer periods. *Support and Challenge* suggest that when an individual is constructing new meanings and behaviors, support is needed to help the person let go of the old.

Vygotsky noted in his concept of Zone of Proximal Development that individuals need encouragement during new learning. Applied to adult learning, creating expectations that are a slight mismatch for the learner appropriate to the developmental level are necessary to induce growth, as well.

In addition to these conditions, an instructional model of coaching is needed to assist the adult learner in transferring learning to professional settings (Joyce & Showers, 2002). Providing an advantage over the typical one-day workshops imposed upon teachers, a plan that is sustained over time assists teachers to acquire control of new skills. Joyce and Showers recommend training components that increase the success of skill building as follows: (1) theory/rationale, (2) demonstrations, (3) practice with feedback, and (4) opportunities to adapt and generalize through coaching. Mentors and supervisors assist teachers to acquire new skills through coaching plans that incorporate practices through this framework.

Supervisory Approach

Glickman, Gordon, and Ross-Gordon's (2005) developmental supervision model presents a framework for supervisors and mentors to assist teachers. Due to variability in teacher developmental levels, the supervisor must assume behaviors specifically aligned to each supervisee. These behaviors are characterized by three distinct approaches that correspond to Hunt's (1971) matching model. A *directive approach* is

highly structured and does not provide choice for the supervisee. A *collaborative approach* allows some teacher choice, and a *nondirective approach* provides maximum teacher choice. After aligning the approach to the teacher's developmental level, the "supervisory behaviors are gradually modified to promote and accommodate long-range teacher development toward higher levels of reflection and problem solving ability" (Glickman, Gordon, & Ross-Gordon, 2005, p.116).

Assisting "reflective, autonomous teachers facilitated by nondirective supervision" (Glickman, Gordon, & Ross-Gordon, 2005, p.114) is the supervisor's long range goal. However, many teachers are not functioning at high developmental levels, warranting a more directive approach to meet their needs. When teachers exhibit anxiety and high personal and management concerns along with low conceptual development, a higher structured supervision facilitated by the directive approach is required to support the teacher (Pajak, 2001). The supervisor or mentor who possesses knowledge about the teacher's developmental level has an improved capacity for successfully aligning the supervisory approach to the teacher's current level of development. The proposed CLBTOT has the potential to identify a teacher's conceptual level during an observation of a teacher's classroom lesson, providing the mentor or supervisor with data to establish a plan for producing desired outcomes.

However, having an awareness of a teacher's developmental level does not assure that a supervisor's ability to perform the supervisory tasks will be enhanced, as evidenced in studies that discovered these abilities vary according to the supervisor's own developmental level (Thies-Sprinthall 1980, 1984). Supervisors identified at high

cognitive levels more accurately evaluated their student teachers. Conversely, supervisors functioning at low cognitive levels inaccurately and negatively evaluated their student teachers who were functioning at higher cognitive levels. Furthermore, they offered their beginning teachers fewer opportunities to collaborate and preferred that they utilize one tried and true teaching method.

Teachers have individual learning styles, characteristics, and cognitive abilities (Glickman, Gordon, & Ross-Gordon, 2005; Nolan & Hoover, 2005). “A one-size-fits-all approach to teacher supervision and evaluation makes no more sense than does a one-size-fits-all approach to teaching children and adolescents” (Nolan & Hoover, 2005, p.7). Glickman and Gordon (1987) recognized the developmental differences in teachers, and suggested that because of these different levels of thought, ability, and effectiveness, they have different supervisory needs. According to Pajak (2002), “supervisors should strive to work with teachers in ways that are consistent with how teachers are expected to work with students” (p.205).

A review of studies on teacher effectiveness conducted by O’Keefe and Johnston (1989) concluded that teacher adaptability and “responsiveness is positively correlated with teacher behaviors and student outcomes” (p.24). This research in addition to Hunt’s (1971) suggests a developmental explanation for a teacher’s ability to respond to cues during the teaching and learning exchange and to adapt the environment, accordingly, to meet students’ needs. It confirms a developmental explanation for differences in teacher thinking and problem solving abilities. From this point of view, these abilities are considered as developmentally acquired, and as such, may be

promoted in teachers. Further, this perspective argues for programs that would promote and increase these capabilities in teachers. Hunt (1971, 1976) demonstrated with his matching model that one approach to teaching is not adequate or justified. However, research showed that teachers who function at a low conceptual level employ only a single teaching method (Glickman, Gordon, & Ross-Gordon, 2005; Harrison, 1976; Hunt & Joyce, 1967; O'Keefe & Johnston, 1989; Miller, 1981; Reiman, 1993). Therefore, students benefit when mentors assist teachers to become more aware of their students' needs and feelings, to increase their decision-making abilities, and to become more confident and skilled at utilizing a variety of teaching strategies. Additionally, teachers profit from their improved abilities and skills with an enhanced satisfaction with teaching. This rationale for developmental mentoring and supervision programs has implications for all stakeholders in education.

Supervision Viewed through a Post-Structural Lens

The goal of supervision is to guide teaching practice through professional development, accomplished historically through different models including the traditional managerial evaluations and the democratic-participative models (Pinar, Reynolds, Slattery, & Taubman, 2002). Pinar et al. note the fragile relationships between supervisors and teachers situated in the practices intended to improve teacher instruction. In traditional supervision, supervisors manage teachers through evaluations that result in teacher compliance but not in meaningful growth. Despite the intent of reflective practices and others for promoting growth and professional autonomy, these strategies practiced in developmental supervision programs have come under the

scrutiny of some researchers. Critics claim that the power structures and the normalization of teachers inherent in traditional supervision are present in clinical supervision, also, although not as clearly discernable (Fenwick, 2001, 2003).

According to Foucault (1979), “the judges of normality are present everywhere” (p.304), including in education where supervisory practices such as observation function as tools of the normalizing power. In this view, discourses of power positioned in observations and in conferences regulate and control teachers, but result as well in teachers’ unknowing participation in their own objectification. Thus, teachers are controlled through self regulation resulting from this visibility. Chan (2005) believes, as does Foucault (1979) that power is located in everyday ordinary relations, occurring often in a lack awareness of it and accepted as normal. Subtly, it is developed and maintained in many relationships, simply with a gaze. By reflecting upon their teaching practices and revealing weaknesses or areas targeted for improvement, teachers make themselves visible, thereby participating in their own normalization and control (Fenwick, 2001).

This self regulation or pastoral power (Foucault, 1980) explains teachers’ participation in their own objectification. Pastoral power describes how teachers self-police and “become objects of their own critical gaze of measurement and control” (Fenwick, 2003, p.340). Teachers are encouraged to participate through self regulation, thereby surrendering their authentic choice and freedom, according to Fenwick. In addition to observations and conferences, other developmental supervision practices

such as reflection, journal writing, and self-evaluation are viewed as contributing to subjecting teachers through assessments and judgments.

Erlandson (2005) suggests that Schön's (1987) reflection-in-action and reflection-on-action, practices promoted in developmental supervision, are tools for controlling teachers. As a consequence of reflection, the teacher becomes more efficient, and it is this efficiency that Erlandson believes leads the teacher to self-discipline. The "teacher reinterprets herself as an object for control" (p.667) in the act of becoming more professional, more beneficial to the organization, and at the same time becoming more docile. The act of reflecting on their teaching practices legitimizes their teaching behaviors, rendering teachers capable of being compared to other teachers and to a norm. As a result, the teacher becomes more efficient, and at the same time, less powerful.

Finally, Grogan (2004) argues that teacher professional development is located in the conservative discourse that homogenizes education and educates students for economic ends, rather than for cultural ends. This neo-liberal attitude of viewing educators in terms of their value to the organization is consistent with supervisory practices (Tobias, 1999; Fenwick, 2003). Tobias (1999) points to a lack of individual choice and freedom in supervisory practices as teachers are encouraged to construct themselves according to approved notions of teaching. Alternate notions of teaching are not acknowledged (Fenwick, 2003). As a result, the teacher's ability to serve in a neo-liberal society is improved. According to Fenwick, a teacher's preoccupation with personal improvement diverts attention away from other important issues that affect teaching and learning.

Despite the concerns raised by some researchers, Glickman, Gordon, & Ross-Gordon (2005) believe that developmental supervision offers a solution in an environment restricted by new legislative standards. A standards based approach to education coupled with high stakes testing runs the risk of teachers adopting a mechanistic approach to teaching (Pajak, 2001). Clinical supervisory practices such as conferencing have the potential to affect positive change when it embraces issues of equity and social justice in addition to improving teaching behaviors. From this perspective, reflective practice does not encourage the objectification of teachers, but rather frees them to consider important issues that impact students, as well as themselves. Pajak cautions, however, against allowing clinical supervision to become a vehicle for quality control in this standards based environment. The commitment of developmental supervision programs for encouraging personal and professional growth in teachers is identified with the potential for meaningful change for all stakeholders in education.

Texas A&M University Mentoring Research Collaborative for Learning and Development

Hunt (1971), Miller (1981), and others concluded that higher stages of conceptual level are preferred and are not an automatic result of maturation. Accordingly, interventions such as those practiced in developmental mentoring and supervision programs are required to promote growth to higher stages. This section clarifies how adult developmental theories and the practices emanating from them are incorporated into the framework of one developmental mentoring model, the Texas A&M University

Mentoring Research Collaborative for Learning and Development. The Texas A&M University mentoring model proposes a developmental approach to mentoring and provides the background for this study (Foster, 2003; Foster & Raulerson, 2004). The implications for the new observation instrument, the CLTBOT, are located in this program; as well as, potentially in other developmental mentoring and supervision programs. This section concludes with a description of the Classroom Observation & Performance Assessment for Teachers (COPAT) as it relates to the development of the proposed instrument, the Conceptual Level Teacher Observation Tool (CLTBOT).

Coaching Sequence

One of the program's services is the developmental Mentor Training Institute where mentors develop skills and strategies to support and challenge novice educators (Foster, 2003; Foster & Raulerson (2004). Based on Cogan's cycle of assistance and Reiman and Thies-Sprinthall's (1998) framework, both described earlier, the Coaching Sequence used by mentors in the institute structures the assistance that mentors provide to new teachers (see Appendix A). The coaching sequence begins with a Get Acquainted Conference in which the mentor acquires information about the novice teacher while disclosing personal feelings about new relationships (see Appendix B). The Nitty Gritty Conference affords the mentor and novice the opportunity to discuss information relevant to the particular school campus. Additionally, the mentor discusses the journaling and reflection activities and asks the beginning teacher to participate in the process by proposing professional development goals (see Appendix C).

The framework for the Texas A&M University Mentoring Research Collaborative for Learning and Development program is grounded in developmental theory. Mentors individualize a coaching plan based on the novice teacher's present developmental level within specific domains, learning style, and needs. The mentor obtains this information for determining the amount of structure that the novice requires prior to beginning the observation cycle. The mentor records this information with the supporting evidence on the Mentee Profile (see Appendix D). While learning and teaching styles are ascertained easily through preference inventories, the conceptual and concerns levels are most often identified by the mentor in conferences and through Journal Stems for Reflections (see Appendix E).

The Paragraph Completion Method (PCM) is the recognized means for assessing conceptual level (Hunt, Butler, Noy, & Rosser, 1978). As a sentence completion assessment, it requires training for the rater to score the results within a specific degree of accuracy. The intention of the proposed instrument, the CLTBOT, is to permit the mentor during an observation to survey teacher behaviors and to identify accurately the teacher's conceptual level. It offers the mentor an alternative to the PCM requiring no information from the teacher other than that which is gained from a routine classroom observation.

Once the mentee profile is completed and the mentoring approach established, the support and challenge sequence begins. The cycle consists of a pre-observation conference, the observation, and the post-observation conference. While the other conferences may occur, such as a re-connect or instructional conference, the observation

cycle of conferences is fairly predictable. Prior to the pre-observation conference, the novice educator completes the Mentee Planning Form and the mentor utilizes the Pre-Observation Conference-Elements of the Conference Form for reflection and to focus the conference (see Appendixes F and G). Next, the mentor observes the teacher's classroom lesson using the Classroom Observation & Performance Assessment for Teachers (COPAT) (Foster, 2003) (see Appendix H). The proposed new instrument, the CLTBOT, is aligned with the COPAT so that behaviors surveyed in the classroom observation using the COPAT can be assessed at the same time, identifying teacher conceptual level as well as the teaching skills and competencies measured by the COPAT. When the classroom lesson and observation concludes, the new teacher completes the Self-Evaluation of a Lesson form and the mentor uses the Post-Observation Conference-Elements of the Conference form to focus the post-observation conference (see Appendixes I and J). Following the post-conference, a coaching plan dedicated to acquiring new teaching behaviors or for improving teaching skills is created, leading into another observation and assistance cycle.

The coaching sequence that includes the observation and assistance cycle supports and challenges the novice educator with an individualized professional development plan. The potential use for the CLTBOT is for assessing the new teacher's conceptual level during the prescribed observation activity, supplying the mentor with data to mentor more effectively. The mentor uses this knowledge for aligning the mentoring approach in the initial stages of the coaching sequence, for modifying mentoring practices as the needs of the novice teacher changes, for evaluating teacher growth as the

desired outcome of mentoring practices, and finally, for evaluating the program components. This is not a scripted or prescribed approach to mentoring, but rather a more intimate way of providing relevant information and direction so that the novice can best integrate it.

Classroom Observation & Performance Assessment for Teachers (COPAT)

Relevant to the development of the CLTBOT, this section focuses on the COPAT, the instrument that provides the outline for the CLTBOT. The CLTBOT was created and aligned according to the dimensions of effective teaching identified in the COPAT. The CLTBOT can be utilized in conjunction with the COPAT during the same classroom observation, providing an assessment of teacher conceptual level at the same time teaching competencies are evaluated.

Foster developed the COPAT (see Appendix H) in 2000 using the INTASC standards, the North Carolina Teacher Performance Appraisal Instrument (TPAI), and Charlotte Danielson's framework as guides (Foster, 2003; Foster & Raulerson, 2004). The Interstate New Teacher Assessment and Support Consortium (INTASC), created in 1987 represents national and state education organizations with goals for preparing, licensing, and developing teachers ("Interstate New Teacher", n.d.). The ten INTASC standards include the knowledge, skills, and dispositions that all teachers should possess, illustrated in the following ten areas: (1) content pedagogy, (2) student development, (3) diverse learners, (4) multiple instructional strategies, (5) motivation and management, (6) communication and technology, (7) planning, (8) assessment, (9) reflective practice: professional growth, and (10) school and community involvement. Danielson's (1996)

framework for teaching is based upon classroom performance criteria established by the Educational Testing Service (ETS). Like the INTASC standards for teaching, the criteria developed by the ETS describe skills essential for effective teaching. Skills are organized into four domains: planning and preparation, classroom environment, instruction, and professional responsibilities. Danielson's assessment tool encourages beginning and experienced teachers to examine their teaching practice in collaboration with mentors or supervisors.

The COPAT is designed with five domains: (1) Instructional Preparedness, (2) Instructional Organization and Management, (3) Instructional Lesson, (4) Instructional Monitoring, and (5) Instructional Motivation and Feedback (Foster, 2003; Foster & Raulerson, 2004). Developed as an instrument that reflects instructional behaviors during teaching, the COPAT does not deal with issues or topics such as professionalism or parent communication that are outside of the teaching realm. While other aspects of the educator's world are important, this instrument is designed only to provide insight and assessment of teaching behaviors within the classroom. The five domains each include sub-topics that represent very specific behaviors which when reviewed within each domain, provide a thorough picture of the teaching behaviors and teacher-student interaction during an instructional lesson. When analyzing the quality of the teaching behaviors, the observer utilizes a coding system for each behavior, indicating the extent to which the teacher has mastered or effectively exhibited critical teaching behaviors and engaged students in meaningful learning.

The COPAT has been demonstrated to be effective as an observation instrument

for mentors working with novice teachers, as well as for supervisors working with career teachers (Foster & Raulerson, 2004). This instrument successfully discriminates between types of lesson models such as Cooperative Learning, Constructivist Learning, Problem Based Learning, Teacher Directed Learning and other types. The COPAT is an observation instrument that incorporates both the INTASC standards and those described by Danielson and is intended for use as a tool for improving teaching skills by providing data for the teacher and mentor to reflect upon and for setting goals.

Assessment of Conceptual Levels

Miller's (1981) summary of research on conceptual systems theory concluded that teachers' conceptual levels predicted their teaching styles. Assuming the reverse is true, it follows that observable teaching behaviors suggest a teacher's conceptual level. The purpose of this study was to develop and analyze the psychometric properties of a teacher classroom observation instrument, the CLTBOT, which analyzes teaching behaviors in the conceptual domain. Given that higher conceptual levels are associated with effective teaching, the rationale for enhancing a mentor or supervisor's awareness of a teacher's conceptual level is connected to mentoring and supervisory practices and how they are differentiated to each teacher. Having knowledge of a teacher's conceptual level affords the mentor or supervisor information to mentor or supervise more effectively.

Differentiated Supervisory Approach

Hunt's (1971) matching model demonstrates that one approach to teaching students is not adequate. Because adults process information and learn differently from

each other, one approach to mentoring or supervising teachers is also not sufficient. Information about a teacher's conceptual level improves a mentor or supervisor's capacity for decision-making related to the supervisory approach. For example, a teacher functioning at a low conceptual level (CL) benefits more from a directive approach while a teacher functioning at a higher CL benefits more from a nondirective approach.

Differentiated Guided Reflection

It is useful, as well, for a mentor or supervisor to have an awareness of the teacher's conceptual level when facilitating other conditions for adult growth, such as reflection. An essential component of the teaching/learning framework described earlier, reflection stimulates new learning. Without it, an adult cannot make meaning of new experiences and growth will not be evidenced (Reiman, 1999). As an example, the mentor or supervisor engages in guided reflection by responding to the teacher's journal. A teacher's identified conceptual level provides the mentor or supervisor a reference point for considering the type of feedback required by the teacher in the journal. Referring to Piaget's cognitive theory and Vygotsky's zone of proximal development, the mentor or supervisor initially matches feedback to the educator's current preference for problem solving and gradually responds with a mismatch that encourages deeper reflection to challenge the teacher to advance beyond one level to the next. Since reflecting is not an automatic activity, Reiman and Thies-Sprinthall (1998) recommend using a structured approach early in the process for encouraging the teacher to reflect on particular events, thoughts, and feelings. A structured approach includes journal stems

such as: The main learnings I got from teaching this week were..., When I think about being a teacher I am concerned about..., I feel..., I agree/disagree with..., Questions I have after working this week are..., I rate my experiences this week as..., and Elaborate on one particularly significant event that occurred this week.

This structured approach is particularly appropriate for teachers who are functioning at a low conceptual level (CL) (Reiman & Thies-Sprinthall, 1998). They tend to struggle with written reflection, preferring to write about concrete facts. They may be unable to share their own feelings, and because they are unaware of their students' feelings, they require structured guidance from the mentor or supervisor. The mentor or supervisor offers feedback that is aligned to or matches the teacher's current level of development. For a teacher operating at a low CL, feedback that is encouraging and accepting is appropriate in the beginning, and later, responses that are a mismatch such as encouraging the teacher to think about various solutions to a problem promotes the teacher to think in alternate ways. A teacher at a higher CL characteristically shares feelings more willingly in a journal, and a mentor or supervisor differentiates feedback appropriate to this developmental level. A teacher functioning at a higher CL acknowledges students' feelings and through the mentor's guidance, discusses how the students might choose to solve a problem. The mentor raises questions with the high CL teacher that are more complex and might discuss ideas that are abstract as strategies for stimulating growth.

Paragraph Completion Method

Appraising a teacher's current development affords a mentor or supervisor an opportunity to create an individualized plan for promoting growth. Several instruments exist for assisting mentors and supervisors in this important function. The recognized means for assessing conceptual development is Hunt, Butler, Noy, and Rosser's (1978) Paragraph Completion Method (PCM). The paragraph completion test is a measure of conceptual level (CL), assessing an individual's preference for thinking and solving problems. It is a self-report test requiring written responses to six stems: (1) What I think about rules..., (2) When I am criticized..., (3) What I think about parents..., (4) When someone disagrees with me..., (5) When I am not sure..., and (6) When I am told what to do.... The respondent is allowed three minutes for each stem, reacting generally to each subject. According to Hunt et al., a subjective test such as this is required to assess how a person thinks. A scoring manual provides sample responses for each stem and instructions for coding. Raters judge the answers to each stem, assign a score from zero to three, and consequently determine the individual's current level of thinking on a continuum from low to high. The score suggests the individual's conceptual level, thereby indicating the need for structure in the learner's environment. Individuals at a low CL require a high structure of assistance, and individuals at high CL are comfortable with less structure.

Many studies utilizing the PCM have reported evidence of its psychometric properties (Gardiner & Schroder, 1972; Hunt, 1971; Miller, 1981). The PCM has an inter-rater reliability of between .80 and .85 (Hunt, 1971). Hunt found that, generally,

CL is not significantly related to academic achievement. While studies showed that individuals with low ability/achievement scores obtained low conceptual level scores, individuals with high ability/achievement scores varied from low to high on the CL dimension (Hunt, Butler, Noy, & Rosser, 1978). Correlation coefficients for conceptual development and achievement for high school and university samples were not significant. Hunt (1971) summarized several studies that found no significant correlation between CL and SAT scores in heterogeneous groups of individuals of similar intelligence. However, homogeneous groups showed stronger relationships. A negative correlation between CL and achievement in engineering students was explained by their stereotypic preference for concrete thinking. A positive correlation was found between CL and achievement for students in the social sciences who were characterized by their abstract thinking and common interest in analysis. Miller (1981) noted that conceptual systems theory is concerned with an individual's ability to cope with conflict and ambiguity, and factors such as achievement are not explained by the theory. In addition to achievement, Hunt reported that gender was not significantly correlated with CL. Although females were discovered to have slightly higher CL in younger ages, this difference disappeared by high school. In summary, conceptual development was found to be independent of characteristics such as intelligence, achievement, and gender, generally for adults.

According to Litwin (1995), construct validity is a measure of how meaningful the instrument is in practice and is the most difficult to report. It is determined only after years of experience with the instrument in practice. The PCM has been demonstrated in

numerous studies to be a good measure of conceptual development. It was selected as the standard against which to judge the proposed instrument, the CLTBOT for evaluating concurrent validity. Litwin explained the importance of selecting a good measure of the construct that has demonstrated psychometric properties. Comparison of the focal instrument to a well known and established instrument of the same construct like the PCM is a fundamental requirement of concurrent validity and is needed to answer the second research question of this study.

Measures of Teacher Behaviors

According to Hunt, Butler, Noy, & Rosser (1978), the advantage of the PCM is located in the written responses required to complete the stems that explain how a person thinks. Hunt et al. argued that objective tests measure content rather than thinking patterns that are revealed by completion tests and are, therefore, not useful for assessing conceptual level. However, Narvaez and Bock (2002) and Rest, Narvaez, Thoma, and Bebeau (2000) argued that self-reported explanations for cognitive thinking are inadequate for some individuals who are unable to articulate their thought processes. Furthermore, Narvaez and Bock noted that objective tests are needed as behavior is often guided by knowledge that is not known to the individual. As an alternative to a completion test for assessing cognitive levels, Narvaez and Bock utilize the Defining Issues Test (DIT), an objective test for judging moral reasoning. It was developed to measure tacit knowledge. Yet, Berliner (2005) contends that there are elements of teaching that cannot be assessed with objective tests. Behaviors that reveal

psychological dimensions of teacher quality are more difficult to evaluate and are assessed more effectively during classroom observations, according to Berliner.

Teacher Observation Instruments

The Flanders Interaction Analysis System is a teacher observation instrument that examines the communication between teachers and students (Flanders, 1976). The Flanders instrument describes seven teacher behaviors, two student behaviors, and one that signifies silence or confusion (Flanders, 1970; Reiman & Thies-Sprinthall, 1998). Utilized in many studies for evaluating teacher behaviors, it is a measure of teacher and student talk yielding a ratio of direct/indirect teaching (Harrison, 1976; Reiman & Watson, 1999). The Guided Inquiry Analysis System (GIAS), an adapted version of the Flanders created by Alan Reiman, subdivides the original Flanders categories to determine, more specifically, the type of teacher talk (Johnson, 2004; Reiman, 1999). The Flanders instrument and the GIAS are recognized tools for examining teacher behaviors and for assessing teacher growth. However, a review of the research literature reveals a lack of teacher observation instruments that analyze behaviors in cognitive domains. Moreover, no observation instruments exist for analyzing teacher classroom behaviors in the conceptual domain.

Research suggests that conceptual development assessment can provide practical information about teacher classroom behaviors. Assuming the reverse is also true, this study seeks to develop a teacher observation instrument that examines teacher behaviors and provides information about teacher conceptual levels. Supervisory activities are enhanced when teacher instruction is “analyzed with techniques that provide new

insights, embedded in the context of a gradually developing change environment” (Flanders, 1976, p. 49). Explained by conceptual systems theory, teacher adaptation is defined as a change in teacher behavior in response to student behavior (Hunt, 1976). It is observed best when the teacher is presented with obstacles. Observation of teacher classroom behaviors offers a more complete picture of teacher ability and quality than do self-report tests, according to Berliner (2005). Observation tools required to analyze teaching behaviors in cognitive domains are lacking in the literature. The proposed new observation instrument, the CLTBOT, captures behaviors in several instructional categories, revealing the teacher’s conceptual level.

Development of Observation Instruments

The need for a classroom observation instrument that evaluates teaching behaviors in the conceptual domain defines the purpose for this study. Relevant to the purpose of developing a new teacher observation instrument is a survey of the research literature for information about instrument development, in general. This section examines the purposes for observation instruments, categories of assessments, and steps in developing an observation instrument and analyzing it for its psychometric properties.

According to Glickman, Gordon, and Ross-Gordon (2005), “if the goal of supervision is to enhance teachers’ thought and commitment about improving classroom (and school) practice, observations should be used as a base of information to create an instructional dialogue between supervisor and teacher” (p.191). Observation instruments are useful for recording events or behaviors. However, not all observation instruments

are suitable for every classroom and for every purpose. When the focus of an observation cannot be adequately measured by existing tools, opportunities for new observation instruments emerge for collecting the data (Baker, Gersten, Haager, Dingle, & Golden, 2005; Glickman, Gordon, & Ross-Gordon, 2005; Piburn & Sawada, 2000). As an example, Piburn and Sawada's (2000) study sought to evaluate the reform efforts of a science and math teacher preparation program. While observation instruments that measure effective teaching were available, none was suitable for assessing the reform components that the program focused on. Consequently, a new observation tool aligned with the behaviors associated with the reform components of the program was created to collect the data. The purpose of the observation dictates the type of instrument required. Observation instruments yield either quantitative or qualitative data. Categories of observation instruments described by Glickman, Gordon, and Ross-Gordon (2005) are illustrated in Table 4.

Table 4

Categories of Observation Instruments

Type	Data	Purpose
Categorical-frequency	Quantitative	Counting, totaling behaviors
Performance-indicator	Quantitative	Records evidence of behavior
Visual diagramming	Quantitative	Depicts verbal interaction
Human space utilization	Quantitative	Depicts length & pattern of physical movement
Verbatim	Qualitative	Records all verbal interaction
Detached open-ended narrative	Qualitative	Records events as they unfold
Participant open-ended	Qualitative	Records how people & events unfold to a participant in classroom
Focused questionnaire	Qualitative	Gathers evidence with questions about classroom topics

Teacher behavior assessments can be categorized as low-inference observation instruments and high inference observation instruments (Hartsough, Perez, & Swain, 1998). Low inference tools count the number of times a behavior occurs in specific intervals rather than assessing quality as do high-inference ratings that rely on observer judgment of behaviors. As an example, Baker, Gersten, Haager, Dingle, & Golden, (2005) adopted a high inference scale over a low inference measure for judging the

quality of early reading instruction for English learners. However, Hartsough, Perez, and Swain (1998) noted that high inference ratings are subject to observer bias. That is, multiple understandings of what behaviors the test items intend to measure are possible, resulting in inconsistent assessments. Additionally, the halo effect explains how a rater is influenced to score the teacher high on all items when the rater generally approves of the teacher. Finally, logical error refers to rating one item similar to another item regardless of performance when both test items are judged by the rater to be related. Recognizing and minimizing potential bias is critical for improving an instrument's validity and reliability.

Creating and developing a new observation instrument requires several steps. Item selection begins by searching the research literature for information about the construct to be represented in the instrument (Lee et al., 2003). Examples of the behaviors that suggest the construct are then assembled into statements according to the researcher's categories and format. Pilot testing is important so that new instruments can undergo revisions (Baker, Gersten, Haager, Dingle, & Golden, 2005; Lee et al., 2003). Validity and reliability data collected in the pilot study provide information that test items are adequately measuring what they intend to measure consistently, and if not, an opportunity to improve them before conducting the research study. The instrument's validity properties are enhanced when experts in the field examine the test items for clarity and relevance, also essential for minimizing the potential for observer bias and for improving consistency in the assessment. Additionally, it is important to establish construct validity of an observation instrument (Piburn & Sawada, 2000). Reliability

evidence may be gathered by two observers rating the same classroom lesson or with videotaped lessons that are evaluated by two or more raters. Developing a useful observation instrument that yields valid and reliable scores and that generates confidence in the interpretation of scores, as well as in decisions made based on the scores is accomplished with deliberate examination of research literature, with pilot testing, and with a research study. However, characteristics of educational settings vary, and as such, validity and reliability studies should be conducted in a variety of research settings as a continuous process.

Summary

I began this literature review with an examination of issues surrounding the teacher shortage crisis, dispelling the myth that it is a result of an increasing student population and an increasing number of teacher retirements. It is clear from the literature that adequate numbers of teachers are certified each year to meet the demand for educators. However, teacher attrition, most notably in the first five years, contributes significantly to the current teacher shortage. Moreover, alternative teacher certification, a solution proposed by politicians, has demonstrated that a lack of teacher preparation creates a disadvantage in the classroom for the new educator that is difficult to overcome, contributing to the teacher attrition problem.

Numerous studies reported a connection between the teacher shortage crisis and teacher effectiveness in the classroom. The combination of teacher attrition and turnover, the lack of experience in the classroom, as well as the practice of placing uncertified teachers in the classroom have all proven to influence student achievement,

negatively. Less effective teachers who function at a low conceptual level are unaware of the needs of their students and lack the abilities to meet those needs. Some researchers argue that instead of increasing the numbers of beginning teachers by lowering the barriers to certification, educational organizations would be more successful in meeting the demand for educators by addressing the reasons teachers leave the profession. Moreover, they suggest that deliberate and meaningful assistance for teachers provides support, but also promotes their growth to higher levels of development. Teachers at higher conceptual levels are more effective at determining student needs and better able to provide experiences that will lead to student growth. A commitment to teachers is a commitment to students.

In the next two sections of this literature review, I discussed the theoretical framework guiding this study. Cognitive development theory acknowledges stages of growth corresponding to distinct patterns of thinking, each qualitatively different from the others. Cognitive structures are located in various domains such as the conceptual domain, the focus of this study. A conceptual system is a dimension that explains how an individual processes information. Conceptual development, characterized by cognitive complexity and interpersonal maturity is differentiated in a series of stages through which a learner may progress under certain conditions. Related to teaching behaviors, conceptual level is concerned with the teacher's ability to adapt effectively to the changing environment in the classroom. At a low conceptual level, teachers are less cognitively complex, more punitive, and do not vary instruction. At higher conceptual levels, teachers have higher problem solving abilities, are more flexible, and are more

capable of using various teaching strategies and alternative solutions. Hunt's matching model applied to the practice of mentoring and supervising teachers lays a foundation for constructing a plan that individualizes the amount of structure the mentor or supervisor provides based upon the educator's suggested conceptual level, optimizing the learning opportunities for each teacher.

In the fourth section of this literature review, I explored alternative perspectives of developmental theories. The scrutiny of development theory, and stage theory in particular, led researchers to question its relevance to women, some races, ethnicities, and cultures. Others simply raised the question: is higher, better?

In the next section I presented studies that answered this question with a rationale for developmental mentoring and supervision programs based on research concluding that teacher conceptual levels are related to differences in teaching styles. Research has demonstrated that higher stages of development are preferred, that changes in conceptual complexity do not occur simply because of maturation or by regular instruction, and that deliberate interventions are required to promote development to higher stages. Developmental mentoring and supervision programs promote professional growth and development more powerfully than traditional supervision. As a primary activity in traditional supervision, evaluation is not an effective method for encouraging meaningful changes in teaching behaviors. Conversely, developmental mentoring and supervision programs support teacher discussion and reflection and provide opportunities for practice, both considered essential in developmental theory for promoting meaningful change.

Experienced teachers, whose teaching performance is clearly ineffective, in addition to the novice teachers who are overwhelmed and struggling to survive their first teaching experience require interventions that will address both their teaching abilities and retention. Studies showed that traditional supervision is no longer an adequate model for supervision, and that developmental mentoring and supervision has been found to increase teacher effectiveness and retention. The developmental model assists teachers to progress to higher stages of development, capable of higher levels of thinking and decision-making. Developmental mentoring and supervision programs recognize that “teachers who have themselves reached high stages of cognitive, conceptual, moral, and ego development are more likely to foster their own students’ growth in those areas” (Glickman, Gordon, & Ross-Gordon., 2005, p.156). In other words, the most effective way to increase problem-solving abilities in students and to improve their achievement is by assuring students that they will have effective teachers.

Although the goals of developmental mentoring and supervision are intended to improve teaching practices and increase teacher effectiveness, some researchers through critical analyses raised concerns on behalf of the teachers being supervised. The power relations embedded in supervisory practices have the potential for disregarding alternative notions of teaching in favor of certain approved teaching behaviors and teacher identities creating, according to some critics, a danger of supervision to be repressive. Alternative perspectives of supervision provide mentors and supervisors with an awareness of potential social injustices that should be acknowledged and addressed when engaged in supervisory practices aimed at teacher assistance.

The next section focused on the developmental model of the Texas A&M University Mentoring Research Collaborative for Learning and Development, which inspired this study. Developmental mentoring activities such as the coaching cycle include assessing teacher cognitive levels, conferencing, observing, and generating opportunities for the new teacher to reflect and participate in the professional development plan. Additionally, I included in this section information about the COPAT, an observation instrument utilized in the Texas A&M University mentoring program for its role in the development of the proposed new instrument, the CLTBOT.

In the final section of this chapter, I explored the importance of assessing teacher conceptual levels. Assessment of a teacher's conceptual level supports the mentor or supervisor's efforts to assist the teacher more effectively by providing a reference point for establishing activities and practices that are aligned to the teacher's needs, and later for changes to those practices. Knowledge about the teacher's conceptual level improves the mentor or supervisor's capacity for decision-making related to the supervisory approach and the type of feedback to offer in journaling, as examples. Additionally, in this section I described the currently preferred method for measuring conceptual level, the Paragraph Completion Method (PCM). As a completion test, it requires a respondent to articulate thinking patterns in written responses to stems and necessitates a trained rater to score the responses. Some researchers suggested that completion tests were inadequate measures for individuals who lack the ability to express themselves in written responses. Other researchers argued that there are elements of teaching that can be evaluated only through observations and that

supervision activities are enhanced by analyzing teacher instruction. However, few studies described the use of instruments that measure developmental levels by observing teacher behaviors. Furthermore, an observation instrument that examines teacher behaviors for identifying a teacher's conceptual level was not located in the research literature. "Various means of measuring teacher effectiveness in the classroom (via qualitative and quantitative means) combined with the measurements of cognitive growth through developmental clinical assistance are needed" (Johnson, 2004, p.72). Accordingly, the need for a teacher behavior observation tool that analyzes teacher behaviors in cognitive domains, specifically behavior that defines conceptual development levels drives the purpose of this study and is required to answer the research questions. Such an instrument proposes to increase the success of the professional development plan tailored specifically to the individual teacher's needs. In turn, this improved individualized plan has the potential for increasing teacher effectiveness and improving teacher retention.

CHAPTER III

METHODOLOGY

Chapter III describes the methodology for this study. The purpose of this study was to develop an observation instrument for examining teacher classroom behaviors in the conceptual domain and to analyze its psychometric properties. The Conceptual Level Teacher Behavior Observation Tool (CLTBOT) is proposed to identify a teacher's conceptual level by observing classroom behaviors and is intended for use in developmental mentoring and supervision programs. The methodology for this study included these steps:

1. Step one involved the development of the CLTBOT.
2. Step two required conducting a pilot study.
3. Step three focused on the study designed to answer the research questions.

The processes and methods included in these steps are discussed in the following sections: instrument development, pilot study, and the research study.

Step One - Instrument Development

The acknowledgement by Hunt (1971) and Miller (1981) that teacher conceptual level is associated with differences in teaching styles provided the rationale grounded in research, in addition to theory, for developing a teacher observation instrument that would suggest the conceptual level of a teacher. The CLTBOT (see Appendix K) was designed to fill a need revealed in the research literature. An instrument for measuring conceptual level during classroom observations has potential value early in the

mentoring and supervision process, as well as for assessing change in teacher development during and as an outcome of the program activities.

An observation instrument is created and developed according to its need and purpose. The purpose of the CLTBOT is to observe teacher behaviors in the conceptual domain. Rather than counting the behaviors as a low inference scale is designed to do, a high inference observation scale was adopted for judging quality of the teaching behaviors intended for identifying conceptual level. Lee et al. (2003) suggested that it is critical to review the research literature for information about the construct to be represented in the test items. Accordingly, the CLTBOT was created by selecting teaching behaviors associated with high and low conceptual levels as they are predicted and reported in the research literature. The format was organized with dichotomous behaviors arranged in twenty one behavior sets. These teaching behaviors were aligned with the Classroom Observation and Performance Assessment for Teachers (COPAT), the observation instrument used by mentors in the Texas A&M University Mentoring Research Collaborative for Learning and Development for evaluating teaching competencies (see Appendix H). Table 5 represents the CLTBOT in its present form along with corresponding references to the COPAT and to theoretical and research sources. This process contributed to the evidence collected to answer research question two for establishing content validity for the CLTBOT.

Table 5

**CLTBOT Behavior Sets with Corresponding Alignment to the COPAT and
Theoretical References**

COPAT DOMAIN I. Instructional Preparedness	
1. a. Teacher monitors high level of student time on task. (1.6)	High CL
b. Teacher monitors a low level of student time on task.	Low CL
Theoretical/Research Source: Hunt (1971, p.65) defined teacher effectiveness as the ability to provide an environment that produces a particular behavioral outcome. Low CL teachers lack awareness of the extent to which lesson objectives are being met and/or the capacity to adapt the environment to increase outcomes, while high CL teachers utilize an ability to discriminate and to adapt the environment to increase outcomes.	
2. a. Teacher facilitates productive student engagement. (1.7)	High CL
b. Teacher facilitates non-productive student engagement.	Low CL
Theoretical/Research Source: Low CL teachers lack skills to adapt the environment to enhance student engagement (Hunt, 1971, p.64). When student engagement is non-productive, the low CL teacher might respond by ignoring student behavior or by reacting in a negative way, contributing to the lack of the objectives being met (Hunt, Butler, Noy, & Rosser, 1978, p.4). A high CL teacher is described as one who understands when to use a specific environment for engaging students, as well as demonstrating concern that students meet the lesson objectives (Hunt, 1971, p.65; Hunt, Butler, Noy, & Rosser, 1978, p.5).	
COPAT DOMAIN II. Instructional Environment/ Management	
3. a. Teacher is appropriately flexible when enforcing class rules. (2.7)	High CL
b. Teacher is inflexible when enforcing class rules.	Low CL
Theoretical/Research Source: Hunt, Butler, Noy, & Rosser (1978, p.4) described a low CL individual as one who considers rules necessary for order and control as opposed to a high CL individual who evaluates the situation, reaching a decision about the importance of the rule, and consequently, its applicability to the situation.	
4. a. Student seating supports student interaction. (2.3)	High CL
b. Student seating interferes with student interaction.	Low CL
Theoretical/Research Source: Hunt (1971, p.64) found that a low CL individual is more controlling and more comfortable with a highly structured environment. Conversely, a high CL individual is comfortable with a wide variety of environments meant for increasing behavioral outcomes.	

Table 5 (Continued)

5. a. Teacher manages student misbehavior effectively. (2.6)	High CL
b. Teacher manages student misbehavior ineffectively.	Low CL
Theoretical/Research Source: According to Hunt, Butler, Noy, & Rosser (1978, p.4), a low CL individual reacts by ignoring the situation, or by rejecting the person in a manner that does not consider the person's thoughts or feelings. The high CL individual has the capacity to discriminate, to understand, and to adapt the environment when necessary to achieve the behavioral outcomes (Hunt, 1971, p.64).	
6. a. Teacher's emotional response to student behavior is appropriate. (2.6)	High CL
b. Teacher's emotional response to student behavior is inappropriate.	Low CL
Theoretical/Research Source: A low CL individual reacts to situations impulsively, responding in a negative manner, and possibly losing his/her temper (Hunt, Butler, Noy, & Rosser, 1978, p.4). A high CL teacher exhibits a greater internal locus of control (Miller, 1981), having an awareness of self and showing concern for others (Hunt, Butler, Noy, & Rosser, 1978, p.4).	
COPAT DOMAIN III. Instructional Lesson	
7. a. Teacher employs student-directed teaching methods as a primary mode of delivery. (3.6)	High CL
b. Teacher employs teacher-directed methods as a primary mode of delivery.	Low CL
Theoretical/Research Source: Miller (1981) concluded that high CL teachers exhibited nondirective teaching styles, opposed to the directive styles of low CL teachers.	
8. a. Teacher asks questions of varied levels. (3.12)	High CL
b. Teacher asks lower-level questions, only.	Low CL
Theoretical/Research Source: Research that linked conceptual levels to teacher behaviors revealed that low CL teachers ask lower-level questions about knowledge, recall, and comprehension, whereas high CL teachers ask higher level questions related to analysis, evaluation, and synthesis, in addition to questions in the lower categories (Reiman & Thies-Sprinthall, 1998).	
9. a. Teacher's lesson includes a variety of activities. (3.4)	High CL
b. Teacher's lesson does not include a variety of activities.	Low CL
Theoretical/Research Source: "Teacher effectiveness is defined as the capacity to present the same lesson in a variety of instructional forms" (Hunt, 1971, p.52). Researchers found that low CL teachers resort to one tried and true method, while high CL teachers utilize a variety of teaching methods (Miller, 1981; Reiman & Thies-Sprinthall, 1998).	

Table 5 (Continued)

10. a. Teacher modifies lesson for individual students, as needed. (3.24)	High CL
b. Teacher does not modify lesson for individual students, as needed.	Low CL
Theoretical/Research Source: A high CL teacher has the ability to select a strategy “most appropriate to produce a desired outcome with a particular group of students and to shift to a new form when necessary” (Hunt, 1971, 52). Research confirmed that low CL teachers lack the awareness and the ability to adapt the lesson, while high CL teachers show the capacity to read and flex, adapting when necessary to achieve the objectives (Hunt, 1976; Miller, 1981; Reiman & Thies-Sprinthall, 1998).	
11. a. Teacher links the lesson with other learning. (3.3)	High CL
b. Teacher does not link the lesson with other learning.	Low CL
Theoretical/Research Source: Hunt (1971, p.65) described an effective teacher as one who has the capacity to select and use a strategy that is most appropriate for producing a desired outcome. Miller (1981) and Reiman and Thies-Sprinthall (1998) concluded that low CL teachers lack higher order thinking abilities and the skills to employ various strategies, whereas high CL teachers are associated with high information processing skills and utilize a variety of teaching strategies.	
12. a. Teacher connects the lesson with students’ interests. (3.2)	High CL
b. Teacher does not connect the lesson with students’ interests.	Low CL
Theoretical/Research Source: Low CL teachers lack an awareness of students’ interests and feelings, while high CL teachers are more empathic, consider students’ perspectives, and organize teaching around those perspectives (Miller, 1981).	
13. a. Teacher is responsive to student questions or comments during lesson. (3.13)	High CL
b. Teacher is not responsive to student questions or comments during lesson.	Low CL
Theoretical/Research Source: Hunt, Butler, Noy, & Rosser (1978, p. 17) described the low CL person as one who is not sensitive to the thoughts and feelings of others and the high CL person who is empathic to others’ thoughts and feelings.	
14. a. Teacher provides opportunities for student reflection. (3.18)	High CL
b. Teacher does not provide opportunity for student reflection.	Low CL
Theoretical/Research Source: A low CL person has no tolerance for ambiguity and lacks information processing skills, whereas a high CL person evaluates and weighs all information (Hunt, Butler, Noy, & Rosser, 1978, p.26). Other studies found that high CL teachers understand the value of reflection for self and students (Miller, 1981; Reiman & Thies-Sprinthall, 1998).	

Table 5 (Continued)

COPAT DOMAIN IV. Instructional Monitoring	
15. a. Teacher checks student progress regularly during the lesson. (4.4)	High CL
b. Teacher does not check student progress regularly during the lesson.	Low CL
Theoretical/Research Source: Low CL teachers employ a structured approach to teaching and are either unaware or have negative attitudes about other approaches, while high CL teachers show concern for students and utilize strategies to produce a desired outcome (Hunt, 1971, pp.52 & 79; Hunt, Butler, Noy, & Rosser, 1978).	
16. a. Teacher uses both oral and written data to check student progress. (4.3)	High CL
b. Teacher uses only one source of data to check student progress.	Low CL
Theoretical/Research Source: The low CL teacher prefers one structured approach to teaching, while the high CL teacher has the ability to use a variety of instructional strategies for increasing behavioral outcomes (Hunt, 1971, p.64 & 79).	
17. a. Teacher guides students through practice(s) and/or understanding of key concepts in the lesson. (4.6)	High CL
b. Teacher does not guide students through practice(s) and/or understanding of key concepts in the lesson.	Low CL
Theoretical/Research Source: The low CL teacher employs one method of teaching that is highly structured and controlling, in contrast to the high CL teacher who demonstrates skill for introducing strategies that increase behavioral outcomes (Hunt, 1971, pp.64-65).	
COPAT DOMAIN V. Instructional Motivation/Feedback	
18. a. Teacher's verbal feedback affirms student responses. (5.3)	High CL
b. Teacher's verbal feedback lacks affirmation of student responses.	Low CL
Theoretical/Research Source: A low CL person does not demonstrate concern for others' feelings, while the high CL person demonstrates concern and is empathic towards others (Hunt, Butler, Noy, & Rosser, 1978, p.5; Miller, 1981).	
19. a. Teacher is responsive to student opinions. (5.6)	High CL
b. Teacher is not responsive to student opinions.	Low CL
Theoretical/Research Source: The low CL individual is "closed to differences of opinion" (Hunt, Butler, Noy, & Rosser, 1978, p. 21) and may react by rejecting or ignoring the person. The low CL individual may "display hostility by being mentally abusive" towards the other person or resort to "convinc[ing] the other of the argument" (p.21). The high CL person is sensitive to the thoughts and feelings of others (p.17).	

Table 5 (Continued)

20. a. Teacher supports multiple viewpoints. (5.6)	High CL
b. Teacher does not support multiple viewpoints.	Low CL
Theoretical/Research Source: The low CL person lacks the ability to evaluate and weigh information, does not tolerate ambiguity, and thus, has no tolerance for multiple viewpoints (Hunt, Butler, Noy, & Rosser, 1978, p. 22 & 26). The high CL individual not only tolerates different points of view, but perceives them as “potential sources of information”. This attitude corresponds to an awareness of self and for the feelings of others (Hunt, Butler, Noy, & Rosser, 1978, p. 22).	
21. a. Teacher sustains feedback when incorrect answers are given. (5.4)	High CL
b. Teacher does not sustain feedback when incorrect answers are given.	Low CL
Theoretical/Research Source: Hunt (1971, p.64) described the low CL teacher as being comfortable with a highly structured and controlled environment and lacking skills to vary strategies. Conversely, the high CL teacher has superior information processing skills and communication skills, and can employ a variety of teaching strategies including questioning techniques (Miller, 1981).	

Step Two - Pilot Study

According to Baker, Gersten, Haager, Dingle, & Golden (2005), it is essential that an instrument undergo pilot testing so that revisions can be performed if warranted before the research study. It is important that its psychometric properties are evaluated to determine if test items are adequately measuring what they are intended to measure. In addition to accumulating concurrent validity evidence by investigating the relationship between the CLTBOT and the Paragraph Completion Method (PCM), an informal examination of the test items of the CLTBOT for clarity and relevance to the construct was conducted by an expert in the field.

The pilot study consisted of teachers selected from a population of convenience in one Texas high school. The participants' characteristics are summarized in Table 6.

Table 6

Characteristics of Teachers in Pilot Study

	Frequencies					
Gender	3 Male	6 Female				
Ethnicity	1 African American	7 Anglo	1 Hispanic			
H.Degree	7 Bachelors	2 Masters				
Subject	1 English	2 Math	1 Science	3 Soc. St.	1 SPED	1 Elective
Experience	6 (0-5)	1 (6-10)	1 (21-30)	1 (30+)		

Note. n=9

The participants' written responses for the six stems on an adapted version of the PCM (see Appendix L) were collected and scored. According to the method Hunt (1971) established for representing an accurate referent of an individual's underlying structure, the conceptual level (CL) index for each teacher in this study was calculated by averaging the highest three scores for the stems on the PCM. CL groups in this study were defined in absolute terms as Hunt, Butler, Noy, & Rosser (1978) suggested, rather than relative to the group of teachers sampled as found in many research studies (Miller, 1981). The low CL group was defined with mean scores of 1.0 or less and the high CL group with mean scores of 2.0 or above. The moderate group was defined with mean scores greater than 1.0 and less than 2.0. Hunt (1971) reported an inter-rater reliability of between .80 and .85 with trained scorers, but argued that the training manual would render the need for two judges unnecessary. The PCM training manual provides theory,

rationale, and extensive practice for scorers (Hunt, Butler, Noy, & Rosser, 1978). As such, the researcher who is a trained scorer rated the teachers' responses on the adapted PCM in this pilot study. Participants were grouped into levels A=low, B=moderate, and C=high according to the criteria previously discussed which were then converted to numbers, 1, 2, and 3, respectively, for the purpose of analyzing the data. The PCM tests were coded to prevent identification of the participants. The researcher conducted the observations for this pilot study using the first draft of the CLTBOT and scored them according to the proposed instructions. Teachers were assigned to three CL levels corresponding to the three levels of the PCM. The observation forms were coded to minimize both identification of subjects and researcher bias.

Data obtained from the CLTBOT and the PCM were analyzed with SPSS 12.0 for establishing concurrent validity. The statistical analysis to determine the association between both instruments was conducted yielding a Cramer's V coefficient. Results indicated what Aron and Aron (2003) consider a moderate relationship between the PCM and the CLTBOT at .32 [$V(9) = .32, p = .34$]. Crosstabulation of the teachers' scores on the CLTBOT and the PCM is shown in Table 7. While the PCM and the CLTBOT both yield three levels, the teachers in this sample fell in either the B or C groups. Of the nine teachers, two were assigned to the B group and four to the C group on both the PCM and the CLTBOT, one was assigned to the B group on the PCM and the C group on the CLTBOT, and two were assigned to the C group on the PCM and the B group on the CLTBOT.

*Table 7***Crosstabulation of CLTBOT and PCM Levels of Teachers in Pilot Study**

		PCM level of teacher		Total
		B	C	
CLTBOT level of teacher	B	2	2	4
	C	1	4	5
Total		3	6	9

The purpose of developing a new observation instrument, the CLTBOT, was for evaluating teacher behaviors in the conceptual domain as other observation instruments were inadequate for this function. Item selection for this instrument was based on information in the research literature that described conceptual development and its connection to teacher behaviors. While not significant, the results of the pilot study revealed a moderate association between the CLTBOT and the PCM. The pilot study functioned as an opportunity to improve the new instrument in an effort to enhance its psychometric properties before conducting the research study. Revisions to the CLTBOT were indicated as a result of the statistical analysis and after an examination by an expert knowledgeable about conceptual development and about teacher observation instruments. In addition to revising the CLTBOT, another concern emerged from the pilot study, warranting attention. Hartsough, Perez, & Swain (1998) suggested that high inference observation instruments are subject to observer bias. To minimize observer bias and increase consistency of scoring among observers, a list of descriptors explaining the behaviors for each behavior set was developed to accompany the

CLTBOT. The CLTBOT Behavior Descriptors Guide (see Appendix M) was created as a reference to improve the ability of observers to discriminate among behaviors that suggest the two different conceptual levels depicted on the instrument.

Step Three - Research Study

Setting and Participants

Participants for this study were volunteers from five public schools in one Texas school district: two elementary schools, and three middle schools. It is assumed that this sample of teachers would be similar to samples of teachers in other schools. These participants were treated according to the Institutional Review Board's standards for the protection of human subjects. Confidentiality was achieved through a coding process designed to decrease the probability for identification of participants. No incentives or rewards were offered and participation was strictly voluntary.

Procedures and Measures

Research Question One

Five videotaped teaching lessons routinely used in one Texas school district for training were utilized for collecting reliability evidence for the CLTBOT. The tapes were independently viewed and rated with the CLTBOT by both the researcher and a central office administrator from a second Texas school district. The administrator holds a doctorate, is an expert in this field of study, is familiar with the CLTBOT, and has extensive experience with teacher observations. The coded data were entered by an individual outside of the research study into SPSS 12.0 for obtaining inter-rater agreement with Cohen's kappa coefficients.

Research Question Two

The CLTBOT was evaluated by this researcher's committee chair, an expert in the field of mentoring and supervision, and by the central office administrator who also participated in collecting data for answering research question one. The Content Validity document designed by the researcher appraises each of the 21 behavior sets on the CLTBOT with a Likert scale (see Appendix N). It was created to assess the intent to follow Johnson and Christensen's (2004) recommendation that an instrument's items should represent the construct and be worded and formatted appropriately. The experts were asked to judge each item according to its relevance, or its use as a behavior that would suggest a conceptual level and according to its clarity, or its ability to be understood or rated by an observer.

Research Question Three

A second public school administrator familiar with the area of study and with teacher observations collected the data for the research study. Another individual outside of the research study coded the results to protect the confidentiality of the participants. The observer reviewed the CLTBOT Behavior Descriptors Guide prior to the observations (see Appendix M). For collecting concurrent validity evidence, Litwin (1995) recommends using a standard that has demonstrated psychometric properties. The psychometric properties of the Paragraph Completion Method (PCM) were described in chapter II of this study. Numerous studies have confirmed its reliability and validity as an assessment of conceptual development. The observer administered the adaptation of the PCM (see Appendix L) on the same day as conducting the observations

with the CLTBOT (see Appendix K), a timeline appropriate for collecting concurrent validity evidence (Johnson and Christensen, 2004). The completed PCM tests were scored by the researcher who is trained and has experience in rating the written responses of this instrument. All coded data were entered into SPSS 12.0 for obtaining a Cramer's V coefficient, determining the relationship between the CLTBOT and the PCM.

Data Analysis

For discovering the psychometric properties of the CLTBOT, validity and reliability evidence was accumulated by analyzing the data obtained from both the CLTBOT and the PCM utilizing SPSS version 12.0. Investigating the reliability and validity for the CLTBOT is essential to determine its usefulness in a mentoring or supervision program. The research questions were:

1. What is the reliability of the CLTBOT?
2. What is the content validity of the CLTBOT?
3. What is the concurrent validity of the CLTBOT when compared to the Paragraph Completion Method (PCM)?

Research Question One

Reliability is important to establish when creating a new measure (Aron & Aron, 2003). To answer the first research question, inter-rater reliability was chosen to assess the reliability of the CLTBOT. Inter-rater reliability is the degree of similarity of the scores between two raters. Cohen's kappa coefficient was computed to check the inter-rater reliability between the raters' scores on the five videotaped lessons using the

CLTBOT. Cohen's kappa is suitable for categorical variables and is superior to percentage agreement as a measure for reliability as it corrects for the probability that the raters' agreement is due to chance alone (Leech, Barrett, & Morgan, 2005).

Research Question Two

Content validity refers to the extent that the items on the instrument adequately match the behaviors they are intended to measure (Merriam & Simpson, 2000). It is a subjective measure of the appropriateness of the test items by reviewers who have knowledge about the subject. According to Johnson and Christensen (2004), judges should understand the construct the instrument is measuring, assess the content domains on the instrument, and determine whether the items represent the content domains. "Content validity is not quantified with statistics", but is "presented as an overall opinion of a group of trained judges" (Litwin, 1995, p.35). Two experts in the field of mentoring and supervision, having conducted research previously in cognitive development, and experienced with observation instruments performed a critical assessment of the items on the CLTBOT using the Content Validity document (see Appendix N). Criteria for content validity established by this researcher using Wongchai's (2003) study as a guide were that the items should be rated at least an A (strongly agree) or B (agree) on both clarity and relevance by both experts.

Research Question Three

Concurrent evidence was collected to answer research question three by administering both the CLTBOT and the adapted PCM at about the same point in time, or concurrently, and then determining the association between the two instruments. This

type of validity evidence is important to determine if the focal test is related to other measures of the same construct (Johnson & Christensen, 2004). Although the CLTBOT is an observation measure scored by an observer and the PCM is a paper-and-pencil test completed by a participant, the different modes of data collection are satisfactory for this type of evidence as both are independent measures of the same construct, according to Johnson and Christensen. The relationship between the CLTBOT, the focal instrument, and the PCM, a recognized instrument for assessing the construct, conceptual development, and whose validity and reliability has been established, was examined using the Cramer's V analysis. The Cramer's V coefficient was chosen as an indicator for the relationship between the two instruments for its usefulness as an associational measure for categorical or nominal variables, and thus, is more appropriate than the Pearson r coefficient, an indicator for interval data. It is an extension of the phi coefficient which is a "mathematically simplified version[s] of the Pearson's r formula" (Chen & Popovich, 2002). The phi coefficient is useful for determining the relationship between dichotomous variables, while the Cramer's V coefficient indicates the relationship between multichotomous variables. Both the CLTBOT and the PCM yield variables with three categories each.

CHAPTER IV

RESULTS

The purpose of this study was to develop a classroom observation instrument for evaluating teaching behaviors in the conceptual domain and to analyze its psychometric properties. Reliability and validity evidence was collected for determining the usefulness of the Conceptual Level Teacher Behavior Observation Tool (CLTBOT) in developmental mentoring and supervision programs. Inter-rater reliability is crucial for an observation instrument given that the behaviors observed require some degree of judgment (Leech, Barrett, & Morgan, 2005). Validity is also essential for a new instrument. According to Chen and Popovich (2002), “Validity is not about the test, itself. Instead, the validity of a test is concerned with how reasonable an inference is” (p.53). The instrument should measure what it was designed to measure and yield accurate information for any subsequent interpretations and decisions made based on the results. The psychometric properties of the CLTBOT were determined by answering the following research questions:

1. What is the reliability of the CLTBOT?
2. What is the content validity of the CLTBOT?
3. What is the concurrent validity of the CLTBOT when compared to the Paragraph Completion Method (PCM)?

Questions one and three are associational questions and required associational inferential statistics, while question two necessitated the critical analysis of the content and format of the CLTBOT. The results are presented in the order of the research questions.

Research Question One

Given the variability that is possible when scoring an observation instrument, it is important to verify the consistency of the evaluations. To answer research question one, inter-rater reliability was chosen as an indicator of this consistency. Two raters independently observed five videotaped classroom lessons, evaluating the teaching behaviors with the CLTBOT. The two raters were in 100 percent agreement overall in identifying the conceptual levels of the five teachers observed in the videotaped lessons. A stronger indicator of reliability was conducted with an item by item analysis of the observation instruments completed by the two raters. Inter-rater reliability for the CLTBOT was established by analyzing the agreement between the raters for each of the 21 items for each of the five observations, calculating Cohen's kappa coefficients. The results are depicted in Table 8.

Table 8

Cohen's Kappa Coefficients for Five Observations Using the CLTBOT

Observation	Value	Significance
1	.867	.000
2	.781	.000
3	.829	.000
4	.699	.000
5	.759	.000

Leech, Barrett, and Morgan (2005) explain that in addition to being significant, a Cohen's kappa value should be equal to or greater than .70. Inter-rater agreement for the 21 items on the CLTBOT in each of the five observations resulted in significant values ranging from .70 to .87 or an average of .79.

Research Question Two

Content related evidence was obtained from expert judgments that determined the extent to which the items on the CLTBOT adequately represented the content in the conceptual domain. Similar to the process of developing the CLTBOT, the process of content validation is a deductive one, determining the content domain to be represented by the behaviors and then determining whether the items represented the content domain adequately. The CLTBOT was critiqued and analyzed for relevance and clarity by two experts with extensive supervisory experience and knowledge about conceptual development. The criteria were met for all 21 items as judged by the two experts who either strongly agreed or agreed, coded as an A or B, respectively. The judges' analyses are portrayed in Table 9. Although content validity is not quantified with statistics, it contributes to the evidence obtained by the methodologically rigorous assessment of the CLTBOT. The results support the other evidence confirming that the CLTBOT measures conceptual development and that the items represent the specific content domains for conceptual levels, adequately.

Table 9

Content Validity of the CLTBOT

Question	Expert 1		Expert 2	
	Relevance	Clarity	Relevance	Clarity
1	A	B	A	A
2	A	B	A	A
3	A	A	A	B
4	A	A	A	A
5	A	A	A	A
6	A	A	A	B
7	A	A	A	A
8	A	A	A	A
9	A	A	A	B
10	A	A	A	A
11	A	A	A	A
12	A	A	A	A
13	A	B	A	A
14	A	A	A	A
15	A	A	A	A
16	A	A	A	A
17	A	A	B	B
18	A	B	A	A
19	A	A	A	A
20	A	A	A	A
21	A	B	A	A

Research Question Three

The answer to research question three demonstrated that the Conceptual Level Teacher Behavior Observation Tool (CLTBOT) and the Paragraph Completion Method (PCM) are measures of the same construct. Thirty teachers from five different schools completed the PCM instrument and permitted an observer to analyze their teaching behaviors using the CLTBOT. Table 10 describes the characteristics of the teachers who participated in this study. Concurrent validity requires that the focal instrument be judged against another instrument “acknowledged as a ‘gold standard’ for assessing the same variable” (Litwin, 1995, p.37). It refers to the strength of the relationship between the new instrument, the CLTBOT, and the PCM, a recognized measure of conceptual development. Cramer’s V was calculated as an index of concurrent validity and was significant at $.56[V(30) = .56, p = .009]$. The coefficient of $.56$ is considered large, according to Aron and Aron (2003), suggesting that the CLTBOT and the PCM are strongly related. As such, it follows that the CLTBOT is measure of conceptual development. Crosstabulation of the teachers’ scores on the CLTBOT and the PCM is shown in Table 11. Although both the PCM and the CLTBOT yield levels of A, B, and C, in this sample, all teachers scored either a B or C on the PCM. Four teachers were assigned to the B group and seventeen teachers were assigned to the C group on both the PCM and the CLTBOT, three were assigned to the B group on the PCM and the A group on the CLTBOT, one to the C group on the PCM and the A group on the CLTBOT, one on the C group on the PCM and the B group on the CLTBOT, and finally, four teachers were assigned to the B group on the PCM and the C group on the CLTBOT.

Table 10

Characteristics of Teachers in the Research Study

Frequencies						
Gender	9 Male	21 Female				
Ethnicity	3 African American	20 Anglo	7 Hispanic			
H.Degree	24 Bachelors	6 Masters				
Subject	8 English	11 Math	1 Science	2 Social Studies	1 Special Education	3 Elective
	2 Bilingual	2 General Elementary				
Experience	14 (0-5)	8 (6-10)	5 (21-30)	3 (30+)		

Note. n=30

Table 11

Crosstabulation of Teachers' Levels in the Research Study

		PCM level of teacher		Total
		B	C	
CLTBOT level of teacher	A	3	1	4
	B	4	1	5
	C	4	17	21
Total		11	19	30

The data collection and subsequent analyses completed step three of this study. The results of each analysis demonstrated significance, lending reliability and validity evidence for the use of the CLTBOT. While step three of this study was the research study, itself, the painstaking efforts taken in step one, the development of the CLTBOT and in step two, the pilot study which included the revision to the instrument, both contributed to the success realized in step three.

CHAPTER V

CONCLUSION

Chapter V is the conclusion to this study. Sections presented in this chapter are purpose of the study, summary of results, limitations of the study, recommendations for further research, discussion, and final thoughts.

Purpose of the Study

The purpose of this study was to develop a teacher observation instrument for identifying teaching behaviors in the conceptual domain. Additionally, this study analyzed the psychometric properties of the new instrument, the Conceptual Level Teacher Behavior Observation Tool (CLTBOT). Validity and reliability evidence was obtained by answering three research questions. The first research question addressed the reliability of the CLTBOT, while the second and third research questions focused on the validity evidence for the instrument. The research questions for this study were:

1. What is the reliability of the CLTBOT?
2. What is the content validity of the CLTBOT?
3. What is the concurrent validity of the CLTBOT when compared to the Paragraph Completion Method (PCM)?

Summary of Results

This study was organized into three steps. Step one focused on the development of the CLTBOT. The behavior sets in the new observation instrument were aligned to the Classroom Observation & Performance Assessment for Teachers (COPAT), the observation instrument currently used by mentors in the Texas A&M Mentoring

Research Collaborative for Learning and Development for assessing their novice educators' teaching competencies. The COPAT evaluates teaching behaviors according to nationally recognized standards, while the function of the CLTBOT is to assess teaching behaviors in the conceptual domain, identifying a teacher's ability to think and process information. The CLTBOT is comprised of items grounded in the theory and research that describe teaching behaviors predicted by conceptual levels. Developing the instrument by this methodology ensured that each item on the CLTBOT represents the content it is intended to measure, adding to the content validity evidence for the instrument.

Step two of this study explored the validity of the first draft of the CLTBOT. The pilot study indicated a moderate, but insignificant association between the PCM, the established measure for conceptual development, and the CLTBOT, the focal instrument of this study. The pilot study proved an essential step in the overall process of developing and analyzing the CLTBOT. The results of the pilot study initiated a subsequent revision of the instrument, also accompanied by a newly created CLTBOT Behavior Descriptors Guide. The Behavior Descriptors Guide is intended to improve an observer's ability to discriminate among behaviors and to increase the consistency in scoring between raters, both contributing to the instrument's reliability and validity.

Step three was the research study designed to answer the research questions. Research question one addressed the reliability of the CLTBOT. Results indicated 100 percent agreement between the raters for determining teachers' conceptual levels overall. Additionally, the agreement between the two raters for the 21 items on the CLTBOT

completed for each teacher was analyzed, yielding Cohen's kappa coefficients of between .70-.87. Moreover the results were significant, demonstrating that the two raters' scores were largely consistent. Research question two was answered by two experts, each conducting a critical analysis of the CLTBOT and who assigned high ratings for the 21 items according to relevance and clarity. A Cramer's *V* analysis for determining concurrent validity answered research question three with a coefficient of .56, indicating a strong and significant relationship between the CLTBOT and the PCM.

The results offer preliminary validity and reliability evidence for the use of the Conceptual Level Teacher Behavior Observation Tool (CLTBOT). As a reliability index, the Cohen's kappa coefficients supplied evidence that the scores obtained from the CLTBOT are reliable. There was perfect agreement between the two raters for determining the teachers' conceptual levels. An item by item analysis of the CLTBOT provided a more rigorous test of reliability, resulting in a significant level of agreement, as well. This successful outcome might be explained by the observers' utilization of the Behavior Descriptors Guide. Created after the pilot study, the Behavior Descriptors Guide was designed to reduce observer error by enhancing the rater's ability to understand and discriminate among the behaviors represented in the items on the CLTBOT.

The method for establishing content validity began in the development process in step one when the behaviors in each item on the instrument were linked with the corresponding theoretical sources. In step three during the research study, experts analyzed the CLTBOT for its representation of conceptual development, for its content

depicted in the test items, and for its format and wording, verifying the worthiness of each item. The evidence obtained for establishing content validity and in the Cramer's V analysis for determining concurrent validity supports the score interpretations and inferences for the CLTBOT. However, while the psychometric properties of the CLTBOT were examined in this study, "validation is never fully attained" and "therefore should be viewed as a never-ending process", according to Johnson and Christensen (2004, p.141). Correspondingly, Lee et al. (2003) suggest that collecting validity evidence of a new instrument should be an ongoing process. To increase confidence in interpreting the results of the CLTBOT and in the actions taken based on the results, further studies in a variety of educational settings are needed.

Limitations of the Study

The answers to the research questions are located in the validity and reliability evidence collected for the CLTBOT. However, limitations of the study became apparent during the data collection and should be considered when examining the results. A discussion of these limitations follows:

1. This study was conducted in five different school settings with participants representing diversity of characteristics and with varying amounts of teaching experience. While it is assumed that these participants would be similar to teachers in other school settings, caution should be given to generalizing the results. Validity and reliability should be determined when using this instrument in other settings.

2. The Cohen's kappa coefficients were significant in this study, indicating inter-rater reliability. The CLTBOT Behavior Descriptors Guide seemed to improve the observers' capacity for understanding and discriminating among the behaviors listed on the instrument, enhancing its reliability properties. Still, the potential for observer bias exists in addition to the possibility of raters obtaining inconsistent scores in other research studies.
3. The Cramer's *V* coefficient revealed a significant relationship between the CLTBOT and the PCM. Nevertheless, a comparison of individual teachers' results for both tests uncovered an instance of an unexpected discrepancy of two levels in the scores for one teacher. The teacher's written responses on the PCM suggested that she was functioning at a high conceptual level, while the results of the observation instrument, the CLTBOT, identified teaching behaviors at a low conceptual level. The written comments made by the observer on the CLTBOT substantiated the observer's low rating for the teacher. Given the congruency of most of the teachers' scores on both tests, one observation seems sufficient for the majority of teachers. Yet, although it was not warranted overall in this study, the accuracy of results for the CLTBOT for some teachers might be improved with an average of scores based on two classroom observations. However, because developmental change is expected to occur over time with deliberate interventions such as those provided in developmental mentoring and supervision programs, the two

observations should be conducted in close proximity to each other to assess the current level of conceptual development.

Recommendations for Further Research

A need for an observation instrument that would analyze teacher behaviors for their underlying cognitive structures in the conceptual domain was fundamental for conducting this study. While the research questions were answered, contributing preliminary evidence for the use of the CLTBOT, other questions and implications emerged from this study. Accordingly, recommendations for further research follow:

1. Further research should focus on examining the psychometric properties of the CLTBOT in other educational settings to enhance the potential for the application of the new instrument in mentoring and supervision programs. Construct validity is established after years of obtaining evidence in numerous settings and with a multitude of populations (Litwin, 1995). It should be estimated with convergent and divergent evidence by a number of investigators using various methods to determine the relationship of the CLTBOT with instruments measuring the same construct and with instruments assessing other constructs or traits. Documentation that the CLTBOT is reliable and measures conceptual development consistently in other settings is critical for demonstrating its practical use.
2. A manual is needed that would extend the CLTBOT Behavior Descriptors Guide by providing examples of behaviors for each test item to minimize observer bias and increase uniformity and consistency of scores among

different raters. Additionally, the manual should include a review of conceptual development theory, scoring instructions, and a report of the preliminary validity and reliability evidence for the instrument.

3. Future studies should explore how the mentor or supervisor's ability to effectively mentor or supervise is improved when the teacher's conceptual level is identified by the CLTBOT during the initial classroom observation. To this end, decision making about the supervisory approach and practices such as conferencing and journaling should be examined. In addition to assessing current levels of conceptual development, the CLTBOT provides a picture of change. Studies should verify the role of the CLTBOT in advancing the overall goals of developmental mentoring and supervision programs by assessing changes in teacher conceptual development.

Discussion

The purpose of this study was important because the development of the CLTBOT filled a void in the literature for an observation tool that would suggest a teacher's conceptual level. The Paragraph Completion Method (PCM) has been regarded for over three decades as the standard for assessing conceptual development. However, a number of researchers have emphasized the shortcomings of self-report tests. Some have suggested that completion tests such as the PCM are not suitable for individuals who are unable to articulate their thinking in written responses (Narvaez & Bock, 2002). Others raised the concern that there are elements of teaching that cannot be assessed by paper and pencil tests and are discernable only by observing teaching behaviors

(Berliner, 2005; Flanders, 1976). An alternative to self report tests, the CLTBOT analyzes teaching behaviors for their underlying thought structures during a classroom observation. As a completion test, the PCM requires some practice or training for a scorer to accurately evaluate the thought structures revealed by the written responses on the test. The CLTBOT is an observation instrument and requires only that the observer identify teaching behaviors accurately. As an attribute of the instrument, the behaviors in each item are linked to the corresponding conceptual levels, relieving the observer from the responsibility of having to assess the teacher's underlying thought processes. While both tools identify a teacher's conceptual level, an advantage of the CLTBOT is its evaluative properties as an inherent feature of the instrument, in addition to its capacity for identifying effective teaching during a classroom observation.

The teaching behaviors observed during classroom lessons in this study were found to be indicative of the teacher's conceptual level, resulting in data that is potentially useful to educators and their mentors or supervisors for initiating dialogue about professional goals and supervisory strategies. The CLTBOT assists supervisors and mentors with identifying a teacher's conceptual level for the purpose of individualizing the professional development plan, and later, for assessing change in the teacher's conceptual development resulting from the mentoring or supervisory activities. An individualized plan enhances the goals of a developmental mentoring and supervision program for supporting educators in reaching higher levels of development.

Higher developmental levels are desired. Teachers at higher stages of conceptual development are more empathic to students, are more effective with discipline strategies,

employ a variety of teaching strategies, and can read and flex to meet students needs (Hunt, 1976; Miller, 1981; Reiman & Thies-Sprinthall, 1998). More than three decades of research literature have linked teacher effectiveness to student achievement (Harrison, 1976; Hunt, 1971; Miller, 1981; Percy, 1990; Darling-Hammond, 2004). Thus, the connection between conceptual development and teaching behaviors as well as the connection between teacher effectiveness and student outcomes substantiates the argument that higher conceptual levels are preferred, also consistent with the rationale for developmental mentoring and supervision programs.

In 2002, U.S. Secretary of Education Rod Paige noted that teachers with solid content knowledge and high verbal ability had the greatest influence on student achievement, and his message was clear that states should lower barriers for prospective teachers by reducing the number of pedagogy courses and by easing the certification requirements (U.S. Department of Education, 2002). However, researchers have argued that this course of action is the wrong answer to the teacher shortage crisis (Ingersoll & Smith, 2003). Beginning teachers who are unprepared to meet the challenges of today's classrooms are at a disadvantage compared to others who have been traditionally prepared. As a result, they are more likely to join the ranks of the teachers leaving the profession at rates of between one third and one half during their first five years. Equally as important, Berliner (2005) argued that teacher quality cannot be judged on content knowledge, alone. Because teaching is a complex activity, assessing cognitive structures that reveal thinking and reasoning skills provides a more appropriate evaluation of teacher quality and effectiveness. Moreover, according to Berliner,

assessment of these dimensions of teacher quality is accomplished more effectively through observations. Andrew, Cobb, and Giampietro's (2005) study on GRE scores and teaching behaviors concluded no significant relationship between verbal ability determined by the GRE and teacher effectiveness as determined by supervisors' evaluations. They found, however, a correlation between the analytical portion of the GRE and teaching ability across all subjects and grade levels. "This test measures analytical and logical thinking, the ability to sort relevant from irrelevant details in a problem situation, and the ability to make reasonable choices given a wide range of inputs" (p. 353). These two recent studies legitimized claims reported in research that higher thinking skills and problem solving abilities are needed for effective teaching.

In 2005, U.S. Secretary of Education Margaret Spellings recognized that in addition to content knowledge, teacher preparation programs should assure that teachers have critical teaching skills that include teaching strategies appropriate for diverse learners (U.S. Department of Education, 2005). However, Joyce and Showers (2002) reported that the most common method of teaching is the question and answer exchange about subject content and that it accounts for about 90 percent of the teaching/learning exchange in the classroom. This tried and true teaching method does not inspire students to problem solve or improve their thinking abilities. "Teachers' adaptation to students is the heart of the teaching-learning process, yet it remains poorly understood" (Hunt, 1976, p.268). Today, this concept still eludes some politicians and educators who are making decisions on behalf of students. Research linking cognitive development to teaching behaviors contradicts the notion that a full proof curriculum exists that can be

delivered successfully by all educators regardless of their own developmental levels. Content is easily delivered through teacher directed methods, but teachers who are functioning at higher cognitive levels are more likely to encourage higher order thinking skills and problem solving in their students (Glickman, Gordon, & Ross-Gordon, 2005; Peace & Sprinthall, 1998). Still, while the need for high stage teachers is acknowledged, teachers are not supported in traditional supervision to improve their thinking, to be flexible, and to become autonomous. According to Glickman et al., teachers who are not promoted to increase their problem solving skills resort to making the environment less complex by establishing routines and disregarding student differences.

Cognitive development is not a result of maturation; consequently, deliberate interventions are necessary to assist teachers to progress to higher stages. Like students, teachers function at various stages of development, have different needs and require different types of assistance, necessitating individualized approaches. The traditional model of supervision manages teachers and has not been demonstrated to encourage their growth. Developmental mentoring and supervision programs have been found to support teachers to improve their problem solving skills and decision-making about their students. Conceptual systems theory and its corresponding matching model provide the foundation and the framework for practices aimed at improving cognitive abilities. The implications for teacher preparation institutions are at the heart of programs acknowledging that teacher cognitive development is as important as content knowledge and technical expertise (Berliner, 2005; O'Keefe & Johnston, 1989). The implications

for schools exist in the type of professional development they will offer their educators for encouraging growth and development.

Final Thoughts

This study sought to enhance components of mentoring and supervisory practices by developing an observation instrument that provides information about the conceptual development level of the teacher for the long range goal of assisting teachers to progress to higher levels and improve their teaching abilities. Albeit a laudable purpose, some researchers would caution us to be aware that human interaction in supervision is complicated with the potential for social injustices, and therefore, should be undertaken upon a critical analysis of all supervisory activities. Foucault and others would ask us to take an ethical stance and be mindful of the power structures that inherently exist in educational processes like supervision so that we may resist activities that would exert power over individual teachers. We are obliged to do so. Developmental mentoring and supervision programs present supervisors and teachers with opportunities to collaborate in making decisions about supervisory activities and common goals and work toward democracy and social justice. Accordingly, these efforts offer the potential for addressing teacher retention, teacher effectiveness, and ultimately, student achievement.

Life is the waterfall as it proceeds from start to finish. The water is the individual learners as they try out different routes and seek to grow in awareness of themselves and truth. The spirit of the rocks is the teacher, taking various shapes and forms, sometimes creating tremendous visible impact and sometimes a more subtle effect. The spirit of the rock accepts all the water that comes its way and attempts to make it the most beautiful that it can be in its own way – sometimes spectacular and sometimes simple and ponderous but always contributing to the flow of life. This has become my metaphor for teaching.

Hunt, 1987

It is this awareness of student differences and appreciation of diversity in conjunction with the ability to make decisions about curriculum and teaching methods that is the essence of the teacher. Recognizing the differences among teachers, it is the goal of developmental mentoring and supervision to support and promote them to reach higher levels of development for increasing their effectiveness with students and for improving their satisfaction with the art of teaching. The Conceptual Level Teacher Behavior Observation Tool (CLTBOT) contributes to this effort.

REFERENCES

- Andrew, M., Cobb, C., & Giampietro, P. (2005). Verbal ability and teacher effectiveness. *Journal of Teacher Education*, 56(4), 343-354.
- Aron, A., & Aron, E. (2003). *Statistics for psychology*. Upper Saddle River, NJ: Pearson Education.
- Baker, S., Gersten, R., Haager, D., Dingle, M., & Golden, C. (2005). *Assessing the relationship between observed teaching practice and reading growth in first grade English learners: A validation study*. (ERIC Document Reproduction Service No. ED486282)
- Berliner, D. (2005). The near impossibility of testing for teacher quality. *Journal of Teacher Education*, 56(3), 205-213.
- Berry, B., Hoke, M., & Hirsch, E. (2004). The search for highly qualified teachers. *Phi Delta Kappan*, 684-689.
- Brock, B. L., & Grady, M. L. (1998). Beginning teacher induction programs: The role of the principal. *The Clearing House*, 71(3), 179-183.
- Brown, S. (2003). Working models: Why mentoring programs may be the key to teacher retention. *Techniques*, 18-22.
- Caffarella, R. S., & Olson, S. K. (1993). Psychosocial development of women: A critical review of the literature. *Adult Education Quarterly*, 43(3), 125-151.
- Chan, A. (2005). Policy discourses and changing practice: Diversity and the university-college. *Higher Education*, 50, 129-157.
- Chen, P., & Popovich, P. (2002). *Correlation: Parametric and nonparametric measures*.

Thousand Oaks, CA: Sage Publications.

Cohen, E., & Lotan, R. (2004). Equity in heterogeneous classrooms. In J. Banks & C.

McGee Banks (Eds.), *Handbook of research on multicultural education* (pp.736-752). San Francisco, CA: Jossey Bass.

Danielson, C. (1996). *Enhancing professional practice: A framework for teaching*.

Alexandria, VA: ASCD.

Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives*, 8(1).

Darling-Hammond, L. (2003). Keeping good teachers. *Educational Leadership*, 60(8), 6-14.

Darling-Hammond, L. (2004). What happens to a dream deferred? The continuing quest for equal educational opportunity. In J. A. Banks & C. A. McGee Banks (Eds.), *Handbook of research on multicultural education* (pp.607-630). San Francisco, CA: Jossey Bass.

Erlanson, P. (2005). The body disciplined: Rewriting teacher competence and the doctrine of reflection. *Journal of Philosophy of Education*, 39(4), 661-670.

Fenwick, T. (2001). Teacher supervision through professional growth plans: Balancing contradictions and opening possibilities. *Educational Administration Quarterly*, 37(3), 401-424.

Fenwick, T. (2003). The 'good' teacher in a neo-liberal risk society: A Foucaultian analysis of professional growth plans. *Journal of Curriculum Studies*, 35(3), 335-354.

- Flanders, N. (1970). *Analyzing teacher behavior*. Reading, MA: Addison-Wesley.
- Flanders, N. (1976). Interaction analysis and clinical supervision. *Journal of Research and Development in Education*, 9(2), 47-57.
- Foster, E. (2003). *Mentoring the novice teacher*. Unpublished workbook, Texas A&M University. College Station, TX.
- Foster, E., & Raulerson, T. (2004, October). *Developmental mentoring: A preparation model that works!* 2004 Fall Teacher Education Conference sponsored by CSOTTE-Consortium of State Organizations for Texas Teacher Education. Galveston, TX.
- Foucault, M. (1979). *Discipline & punishment: The birth of a prison*. New York: Vintage Books.
- Foucault, M. (1980). *Power/knowledge: Selected interviews & other writings 1972-1977*. New York: Pantheon Books.
- Fuller, E. (2002). *Elements of the demand for Texas public school teachers*. State Board for Educator Certification: Austin, TX.
- Gardiner, G.S., & Schroder, H.M. (1972). Reliability and validity of the paragraph completion test: Theoretical and empirical notes. *Psychological Reports*, 31, 959-962.
- Gilligan, C. (1982). *In a different voice: Psychological theory and women's development*. Cambridge, MA: Harvard University Press.
- Gilligan, C., Ward, J., Taylor, J., & Bardige, B. (1988). (Eds). *Mapping the moral*

domain: A contribution of women's thinking to psychological theory and education. Cambridge, MA: Harvard University Press.

Glickman, C., & Gordon, S. (1987). Clarifying developmental supervision. *Educational Leadership*, 44(8), 64-68.

Glickman, C., Gordon, S., & Ross-Gordon, J. (2005). *SuperVision and instructional leadership.* Boston, MA: Allyn and Bacon.

Grogan, M. (2004). Keeping a critical, postmodern eye on educational leadership in the United States: In appreciation of Bill Foster. *Educational Administration Quarterly*, 40(2), 222-239.

Harrison, M. (1976). Class achievement and the background and behavior of teachers. *The Elementary School Journal*, 77(1), 63-70.

Hartsough, C., Perez, & Swain, C. (1998). Development and scaling of a preservice teacher rating instrument. *Journal of Teacher Education*, 49(2), 132-139.

Herbert, K. S. (2004). *Production and retention of beginning teachers from 1999 to 2003: A comparison of preparation routes.* State Board for Educator Certification: Austin, TX.

Herbert, K. S., & Ramsay, M. C. (2004). *Teacher turnover and shortages of qualified teachers in Texas public school districts 2001-2004.* State Board for Educator Certification: Austin, TX.

Hewett, D. (1972). Conceptual complexity, environmental complexity, communication salience, and attitude change. *European Journal of Social Psychology*, 2(3), 285-306.

Hunt, D., & Joyce, B. (1967). Teacher trainee personality and initial teaching style.

American Educational Research Journal, 4(3), 253-259.

Hunt, D. E. (1971). *Matching models in education*. Ontario, Canada: The Ontario

Institute for Studies in Education.

Hunt, D. E. (1976). Teachers' adaptation: Reading and flexing to students. *Journal of*

Teacher Education, 27, 268-275.

Hunt, D. E. (1987). *Beginning with ourselves: In practice, theory, and human affair*.

Cambridge, MA: Brookline Books.

Hunt, D., Butler, L., Noy, J., & Rosser, M. (1978). *Assessing conceptual level by the*

paragraph completion method. Toronto, Ontario: Ontario Institute for Studies in

Education.

Ingersoll, R., & Smith, T. (2003). The wrong solution to the teacher shortage.

Educational Leadership, 60(8), 30-34.

Ingersoll, R., & Smith, T. (2004). Do teacher induction and mentoring matter? *NASSP*

Bulletin, 88(638), 28-40.

Interstate New Teacher Assessment and Support Consortium. (n.d.). *INTASC standards*.

Retrieved June 15, 2006, from <http://www.ccss.org.html>

Johnson, B., & Christensen, L. (2004). *Educational research: Quantitative, qualitative,*

and mixed approaches. (2nd ed.). Boston, MA: Pearson Education.

Johnson, L. E. (2004). Congruence between professional judgment and professional

action as disposition: A case study of mentors and beginning teachers. *Dissertation*

Abstracts International. (No. AAT3120234)

- Joyce, B., & Showers, B. (2002). *Student achievement through staff development*. (3rd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.
- Kaplan, L., Owings, W. (2004). Introduction to special issue: Teacher effectiveness. *NASSP Bulletin*, 88(638).
- Knowles, M. S., Holton III, E. F., & Swanson, R. A. (1998). *The adult learner*. (5th ed.). Woburn, MA: Butterworth-Heinemann.
- Kohlberg, L., & Hersh, R. (1977). Moral development: A review of the theory. *Theory in Practice*, 16(2), 53-59.
- Laczko-Kerr, I., & Berliner, D. C. (2003). In harm's way. *Educational Leadership*, 60(8), 34-40.
- Lee, G., Kwon, J., Park, S., Kim, J., Kwon, H., & Park, H. (2003). Development of an instrument for measuring cognitive conflict in secondary-level science classes. *Journal of Research in Science Education*, 40(6), 585-603.
- Leech, N., Barrett, K., & Morgan, G. (2005). *SPSS for intermediate statistics: Use and interpretation*. (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Litwin, M. (1995). *How to measure survey reliability and validity*. Thousand Oaks, CA: Sage Publications.
- Loevinger, J. (1966). The meaning and measurement of ego development. *The American Psychologist*, 21(3), 195-206.
- Loevinger, J. (1998). *Technical foundations for measuring ego development: LEA series in personality and clinical psychology*. Mahwah, N.J: Lawrence Erlbaum Associates.

- Marshall, P. (1996). Multicultural teaching concerns: New dimensions in the area of teacher concerns research? *The Journal of Educational Research*, 89(6), 371-379.
- McLachlan, J., & Hunt, D. (1973). Differential effects of discovery learning as a function of student conceptual level. *Canadian Journal of Behavioural Science*, 5(2), 152-160.
- Meister, D. G., & Melnick, S. A. (2003). National new teacher study: Beginning teachers' concerns. *Action in Teacher Education*, 24(4), 87-94.
- Merriam, S., & Simpson, E. (2000). *A guide to research for educators and trainers of adults*. (2nd ed.). Malabar, FL: Krieger Publishing.
- Miller, A. (1981). Conceptual matching models and interactional research in education. *Review of Educational Research*, 51(1), 33-34.
- Minarik, M., Thornton, G., & Perreault, G. (2003). Systems thinking can improve teacher retention. *The Clearing House*, 76(5), 230-235.
- Narvaez, D., & Bock, T. (2002). Moral schemas and tacit judgement or how the defining issues test is supported by cognitive science. *Journal of Moral Education*, 31(3), 297-314.
- Nisan, M., & Kohlberg, L. (1982). Universality and variation to moral judgment: A longitudinal and cross-sectional study in Turkey. *Child Development*, 53(4), 865-876.
- Noddings, N. (1998). *Philosophy of education*. New York: Westview.
- Nolan, J., & Hoover, L. (2005). *Teacher supervision and evaluation*. Hoboken, NJ: John Wiley & Sons.

- Odell, S., & Huling, L. (Eds.). (2000). *Quality Mentoring for Novice Teachers*. Indianapolis, IN: Kappa Delta Pi.
- O'Keefe, P., & Johnston, M. (1989). Perspective taking and teacher effectiveness: A connecting thread through three developmental literatures. *Journal of Teacher Education, 40*, 14-20.
- Olson, L. (2004). Tennessee reconsiders value-added assessment system. *Education Week, 23*(25), p.9.
- O'Neil, J. (2004). Discipline zingers. *NEA Today, 24*-33.
- Pajak, E. (2001). Clinical supervision in a standards-based environment. *Journal of Teacher Education, 52*(3), 233-243.
- Pajak, E. (2002). Clinical supervision and psychological functions: A new direction for theory and practice. *Journal of Curriculum and Supervision, 17*(3), 189-205.
- Peace, S., & Sprinthall, N. (1998). Training school counselors to supervise beginning counselors: Theory, research, and practice. *Professional School Counseling, 1*(5), 2-8.
- Percy, R. L. (1990). The effects of teacher effectiveness training on the attitudes and behaviors of classroom teachers. *Educational Research Quarterly, 14*(1), 15-20.
- Piaget, J. (1972). Intellectual evolution from adolescence to adulthood. *Human Development, 15*, 1-12.
- Piburn, M., & Sawada, D. (2000). *Reformed teaching observation protocol (RTOP) reference manual* (Report No. ACEPT-TR-IN00-32). Arlington, VA: National Science Foundation. (ERIC Document Reproduction Service No. ED447205)

- Pinar, W., Reynolds, W., Slattery, P., & Taubman, P. (2002). *Understanding curriculum*. New York: Peter Lang.
- Ponticell, J., & Zepeda, S. (2004). Confronting well-learned lessons in supervision and evaluation. *NASSP Bulletin*, 88(639), 43-59.
- Reiman, A. J. (1993). Promoting the development of mentor teachers: Theory and research programs using guided reflection. *Journal of Research and Development in Education*, 26, 179-185.
- Reiman, A. J. (1999). The evolution of the social roletaking and guided reflection framework in teacher education: Recent theory and quantitative synthesis of research. *Teaching and Teacher Education*, 15, 597-612.
- Reiman, A. J., & Peace, S. D. (2002). Promoting teachers' moral reasoning and collaborative inquiry performance: A developmental role-taking and guided inquiry study. *Journal of Moral Education*, 31(1), 51-66.
- Reiman, A. J., & Thies-Sprinthall, L. (1998). *Mentoring and supervision for teacher development*. New York: Addison Wesley.
- Reiman, S.J. & Watson, B. (1999). Beginning teacher development: A cognitive developmental approach. *Journal of Research in Education*, 9(1), 56-65.
- Renard, L. (2003). Setting new teachers up for failure...or success. *Educational Leadership*, 60(8), 62-65.
- Rest, J., Narvaez, D., Bebeau, M., & Thoma, S. (1999). *Postconventional moral thinking: A neo-Kohlbergian approach*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Rest, J., Narvaez, D., Thoma, S., & Bebeau, M. (2000). A neo-Kohlbergian approach to

- morality research. *Journal of Moral Education*, 29(4), 382-395.
- Rowe, D., Vazsonyi, A., & Flannery, D. (1994). No more than skin deep: Ethnic and racial similarity in developmental process. *Psychological Review*, 101(3), 396-413.
- Scherer, M. (2003). The ex-teacher. *Educational Leadership*, 60(8), 5.
- Schön, D. (1987). *Educating the reflective practitioner*. San Francisco, CA: Jossey-Bass.
- Schwandt, T. (2001). *Dictionary of qualitative inquiry*. Thousand Oaks, CA: Sage Publications.
- Smagorinsky, P. (1995). The social construction of data: Methodological problems of investigating learning in the zone of proximal development. *Review of Educational Research*, 65(3), 191-212.
- Smith, T., & Ingersoll, R. (2004). What are the effects of induction and mentoring on beginning teacher turnover? *American Educational Research Journal*, 41(3), 681-714.
- Sprinthall, R. C., Sprinthall, N.A., & Oja, S. N. (1998). *Educational psychology: A developmental approach*. (7th ed.). Boston, MA: McGraw-Hill.
- Strayhorn, C. K. (2004). *The cost of underpaying Texas teachers*. Retrieved February 21, 2005, from www.window.state.tx.us/specialrpt/teachersalary04.html
- Texas Center for Educational Research. (2000). *The cost of teacher turnover*. Austin, TX: Texas State Board for Teacher Certification.
- Thies-Sprinthall, L. (1980). Supervision: An educative or miseducative process? *Journal of Teacher Education*, 31(2), 17-30.
- Thies-Sprinthall, L. (1984). Promoting the developmental growth of supervising

- teachers: Theory, research programmes, and implications. *Journal of Teacher Education*, 35, 53-60.
- Tobias, R. (1999). Lifelong learning under a comprehensive national qualifications framework – rhetoric and reality. *International Journal of Lifelong Education*, 18(2), 110-118.
- Tomlinson, P., & Hunt, D. (1971). Differential effects of rule-example order as a function of learner conceptual level. *Canadian Journal of Behavioural Science*, 3(3), 236-245.
- U.S. Department of Education. (2002). *Meeting the highly qualified teachers challenge: The secretary's annual report on teacher quality*. Washington, DC: Educational Publication Center.
- U.S. Department of Education. (2005). *The secretary's fourth annual report on teacher quality: A highly qualified teacher in every classroom*. Washington, DC: Educational Publication Center.
- Wenglinsky, H. (2002). How schools matter: The link between teacher classroom practices and student academic performance. *Education Policy Analysis Archives*, 10(12).
- Wong, H. K. (2004). Induction programs that keep new teachers teaching and improving. *NASSP Bulletin*, 88(638), 41-52.
- Wongchai, S. (2003). The ability of the Kolbe A Index Action Modes to predict learners' attitudes and achievements within a web-based training context. *Dissertations Abstracts International*. (No. AAT3117468)

APPENDIX A
COACHING SEQUENCE

Outline of Support and Challenge: Cycle of
Assistance



COACHING Sequence

1. **Hold:** "Get Acquainted Conference"
 - Refer to Suggestions and Protocol Sheet: Elements of the Conference
2. **Complete:** "Analysis of Listening & Reflections on a Getting Acquainted Conference" (Form #2). (Mentor or Colleague completes for practice and assessment)
3. **Record** Meetings: Refer to Conference Schedule Form and Conference Notes Data Form (Form #1 - for your records #4)
4. **Hold:** Nitty Gritty Conference
 - Discuss Journaling & give your Mentee the Journal Stem Page and set a date for first entry (Form #R1-6)
 - Give your Mentee the form: Professional Development Plan-My Goals Novice Teacher. Form #6 (Ask Mentee to Complete and a date-placed at the top, when it is due back to you)
 - Discuss all the "Nitty Gritty" information about the school, the schedule, the protocols, schedules, calendar, maps, routines, grading, etc. This may require more than one meeting to assure the Novice Teacher's understanding. (Form #5)
5. **Acquire** Information for Mentee Profile (Form # 7)
 - Mentoring Assessment Profile (NCR form-duplicate for mentee copy and mentor copy)
 - "Professional Development Plan" (Form #6)
6. **Complete:** Mentee Profile (Form #7)
7. **Prepare for:** Pre-Observation Conference
 - Mentee completes: "Mentee Planning Form" (Form # 8) **before** the conference

- Ask Mentee to bring to the Pre-Conference the (a) Mentee Planning Form & (b) Copy of Lesson Plan
 - Mentor uses: "Pre-Observation Conference-Elements of the Conference" sheet to focus the conference & reflect
 - Mentor or colleague use "Pre-Observation Conference Observation of Mentor" (Form #9) to reflect and assess the effectiveness of the conference.
8. **Observe:** in the Classroom: Using the COPAT: "Classroom Observation & Performance Assessment for Teachers" (Form #10) Complete written assessment from scripting. USE NCR form.
9. **Prepare for:** Post Observation Conference
- Mentee completes: "Self-Evaluation of a Lesson" (Form # 11) **before** the conference and brings it to the conference
 - Mentor uses: "Post Observation Conference-Elements of the Conference" to focus the conference along with the COPAT
 - Mentor or colleague use "Post-Observation Conference Observation of Mentor" (Form # 12) to reflect and assess
 - Ask the Mentee to bring to the conference the "Self-Evaluation of a Lesson" (Form #11) and any questions to the conference.
10. **Hold:** Reconnect Conference
- Focus on Interactive/Response Journal
11. **Complete:** 2 page Coaching Plan (Form # 13a and b and/or c) This is to guide your work with your Mentee through the next Observation and Assistance Cycle.
12. **Consider Holding** an Instructional Conference
- Use if there is instruction or demonstration that you would like to do
 - Use if there is going to be a COPAT in use by the Mentee
13. **Begin:** another Observation and Assistance Cycle, (Plan to video tape the second classroom observation to share with Mentee) (CRITICAL to the growth of the novice teacher)
14. **PLAN** for a Formative Assessment meeting
- This is a meeting to look at the progress of the Novice Teacher through the first semester.
 - This process is repeated in the second semester.

APPENDIX B

GET ACQUAINTED CONFERENCE

Protocol for the "Getting Acquainted" Conference

For Mentor's Use



1. Introduction

- A. Talk about feelings you have had when you begin new relationships.
- B. Ask your Novice about his/her feelings
- C. Actively listen and acknowledge feelings in the Novice

2. Roles and Expectations

- A. Ask how your Novice learns best.
- B. Actively listen by restating or summarizing the preferred way of learning for the novice.
- C. As a model of effective teaching, ask the Novice, "What areas of instruction are you most concerned about?"
- D. Ask the Novice what is his/her preferred way of receiving feedback? (following observations, conferences, meetings--written, verbal, both.)

3. Closing

- A. Discuss your goal of being a mentor.
- B. Set the norms for a working relationship. For example, review the importance of confidentiality and how to keep it.
- C. Discuss the place and time for the next meeting.
- D. Discuss the schedule of events that will be taking place during the year.
 1. Weekly seminars, planning sessions, post-conferences
 2. Written reflections
 3. Coaching cycles and classroom observations
- E. Ask for feedback, clarification, elaboration
- F. Close with a restatement of your interest in having this person as a colleague
- G. Invite your Novice to summarize the meaning/purpose of the conference

APPENDIX C

NITTY GRITTY CONFERENCE



"Nitty Gritty" Conference

Analysis of Process

-Observer or Mentor Completes Form-

- I Introduction: Mentor**
- Stated purpose.
 - Asked Novice about his/her feelings
 - Actively listened and acknowledged feelings in the Novice
- II. Discussion of Needs: Mentor**
- Asked how the Novice thinks progress is moving.
 - Actively listened by restating or summarizing the information
 - Asked "What things or information that you know about, do you need?"
 - Provided concrete responses to the items novice presented
- III. Review of the Information Gathering Process: Mentor**
- Discussed how information can flow between the two.
 - Set up procedure for novice to obtain needed information, quickly
- IV Request and Receipt of Information**
- Provided a calendar or listing of events (if needed)
 - Provided information or location of information, as requested
- V. Planning for Follow-Up**
- Discussed the place and time for the next meeting.
 - Discussed the schedule of events that will be taking place during the year.
 - Weekly seminars, planning sessions, post-conferences
 - Written reflections
 - Coaching cycles and classroom observations
 - Asked for feedback, clarification, elaboration
 - Closed with a restatement of interest in having the novice as a colleague
 - Invited Novice to summarize the meaning/purpose of the conference

APPENDIX D



MENTEE PROFILE

Used to Develop Coaching Plan

Name _____ Yrs. Of Tchg. _____ Yrs. With a Mentor _____
Date _____

Areas of Personal Development :

Areas of Professional Development:

Instructional Skill Development Area:

Jungian Typology: _____ **Kiersey**

Temperment _____

Preferred Teaching Styles:

Index

(Felder) _____

Dunn &

Dunn _____

Preferred Learning Styles: (Kolb) _____ **(Other)**

Conceptual Level: ___ **Low** (date: _____) ___ **Moderate** (date: _____)

___ **High** (date: _____)

Amount of Structure _____

Level of Concern: ___ **1** ___ **2** ___ **3** ___ **4** ___ **5** ___ **6** (date _____)

___ **1** ___ **2** ___ **3** ___ **4** ___ **5** ___ **6** (date _____)

Reflective Practices: Type and Level:

APPENDIX E

Journal Stems for Reflection : Novice

Elaborate on one particularly significant event that occurred this week:

The main learnings I got from teaching this week were:

When I think about being a teacher I am concerned about...

I feel...

I agree/disagree with:

Questions I have after working this week are:

I rate my experiences this week as:

___Inadequate ___Marginal ___ Satisfactory___Excellent

APPENDIX F**MENTEE PLANNING FORM****Pre-Observation Conference**

Mentee Planning Form
-Mentee Completes Form-

1. What are my learning objectives?
2. How do I plan to achieve these objectives?
3. What will be my teaching behavior focus?
4. What classroom management techniques will I use to support reaching the learning outcomes?
5. What information about the students/class would be helpful to know while observing this lesson?

APPENDIX G

**Pre-Observation Conference**

Elements of the Conference

1. Statement of the purpose
2. Discussion of feelings
3. Review of the learning outcomes
4. Discussion of the teaching behavior focus
5. Clarification of information gathering
6. Review of ground rules
7. Planning for follow-up

APPENDIX H

Classroom Observation and Performance Assessment for Teachers

(COPAT)

College of Education & Human Development

Texas A & M University

Teacher _____ Date _____ Grade Level _____ # of Students _____

School _____

Lesson Subject _____ Learning _____

Objective: _____

Lesson: ___ Stand alone ___ Part of a unit ___ Part of a Review Obs 1 2 3 4 5

Observer: _____

Observation Focus: ___ 1. ___ 2. ___ 3. ___ 4. ___ 5. ___ All ___ Formal ___ Lesson Began: _____ Ended: _____ Length of lesson _____

(Domain)

Type of Lesson: ___ Direct Instruction ___ Small Group ___ Discovery ___ Inquiry ___ Coop. Lrng ___ PBL ___ Multit-model ___ Other: _____

Time _____

1. Instructional Preparedness

- ___ 1-materials ready
- ___ 2-system for materials distribution
- ___ 3-necessary items available
- ___ 4-learning plan ready
- ___ 5-students on task quickly
- ___ 6-high level of time on task
- ___ 7-students engaged productively
- ___ 8-selects instructional goals (TEKS)

Comments: _____

Preparedness: 1 2 3 4 5 6 7 8 9 10
 RATING Inadequate Acceptable Commandable Outstanding
 Eg. Designs coherent instruction. INTASC.I Meaningful learning experiences. INTASC.VII Plans instruction based on knowledge of subject matter, students, the community, and curriculum goals.


2. Instructional Environment/ Management

- ___ 1-routines are identified/evident
- ___ 2-monitoring occurs
- ___ 3-student seating supports lesson
- ___ 4-stands/sits to see all students
- ___ 5-frequent visual scanning
- ___ 6-inappropriate behavior handled effectively
- ___ 7-consistent application of rules
- ___ 8-minimal disruptions to class
- ___ 9-prevention techniques used

Comments: _____

Management: 1 2 3 4 5 6 7 8 9 10
 RATING Inadequate Acceptable Commandable Outstanding
 2d Creates an environment of respect and rapport; 2b Establishes a culture for learning; 2c Manages classroom procedures; 2d manages student behavior; 2e Organizes physical space; INTASC.V Creates a learning environment that encourages positive social interaction, active engagement in learning and self-motivation; INTASC.VI Uses knowledge of communication techniques to foster active inquiry, collaboration and supportive interaction.

<p>Time</p>	<p>3. Instructional Lesson</p> <ul style="list-style-type: none"> ___ 1-objective, purpose and intent clearly presented ___ 2-lesson initiation: interesting, compelling ___ 3-prior knowledge point of reflection ___ 4-strategies, varied (appropriate) ___ 5-strategies, developmental (age appropriate) ___ 6-strategies, adjusted as needed ___ 7-examples, relevant ___ 8-speech, fluent and clear ___ 9-directions clear and precise ___ 10-transitions, smooth ___ 11-interactive ___ 12-questions (open, varied levels) ___ 13-responsive to student questions ___ 14-motivational ___ 15-all parts of lesson tie together ___ 16-lesson has core integration ___ 17-lively/appropriate pace ___ 18-student reflection included ___ 19-student centered ___ 20-critical thinking encouraged ___ 21-engagement, equitable ___ 22-closure, included ___ 23-all critical lesson components evident ___ 24-lesson modifications made, if needed ___ 25-content information accurate ___ 26-lesson, culturally responsive ___ 27-objective(s) achieved 	<p>Comments:</p> <p>1b Demonstrates knowledge of students; 3b Uses questioning and discussion techniques; 3c Engages students in learning; INTASC II- Provides learning opportunities that support student development; INTASC III- Creates instructional opportunities adapted to diverse learners; INTASC IV- Understands and uses variety of instructional strategies</p> <p>Lesson Delivery:</p> <table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> </tr> <tr> <td colspan="3">Inadequate</td> <td colspan="3">Acceptable</td> <td colspan="3">Commendable</td> <td>Outstanding</td> </tr> </table>	1	2	3	4	5	6	7	8	9	10	Inadequate			Acceptable			Commendable			Outstanding
1	2	3	4	5	6	7	8	9	10													
Inadequate			Acceptable			Commendable			Outstanding													
<p>4. Instructional Monitoring</p> <ul style="list-style-type: none"> ___ 1-sets reasonable work standards ___ 2-circulates to check performance ___ 3-receives oral/written data ___ 4-checks progress frequently ___ 5-checks both whole class and individual ___ 6-provides guided practice ___ 7-assigns independent practice 	<p>Comments:</p> <p>If Assesses student learning</p>	<p>Monitoring:</p> <table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> </tr> <tr> <td colspan="3">Inadequate</td> <td colspan="3">Acceptable</td> <td colspan="3">Commendable</td> <td>Outstanding</td> </tr> </table>	1	2	3	4	5	6	7	8	9	10	Inadequate			Acceptable			Commendable			Outstanding
1	2	3	4	5	6	7	8	9	10													
Inadequate			Acceptable			Commendable			Outstanding													
<p>5. Instructional Motivation and Feedback</p> <ul style="list-style-type: none"> ___ 1-effective motivation techniques used ___ 2-immediate feedback on work or answers ___ 3-affirms correct answers ___ 4-sustains feedback with incorrect answers ___ 5-appears enthusiastic ___ 6-respectful and valued responses ___ 7-positive climate in classroom ___ 8-students appear motivated ___ 9-uses informal and formal assessment 	<p>Comments:</p> <p>2a Creates an environment of respect and rapport; INTASC V- Creates a learning environment that encourages positive social interaction, active engagement in learning and self-motivation; INTASC VIII- Understands and uses formal and informal assessment strategies</p>	<p>Motivation:</p> <table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> </tr> <tr> <td colspan="3">Inadequate</td> <td colspan="3">Acceptable</td> <td colspan="3">Commendable</td> <td>Outstanding</td> </tr> </table>	1	2	3	4	5	6	7	8	9	10	Inadequate			Acceptable			Commendable			Outstanding
1	2	3	4	5	6	7	8	9	10													
Inadequate			Acceptable			Commendable			Outstanding													

RATING		Inadequate	Acceptable	Commendable	Outstanding
Evidence of Reflection: Teacher & Student <small>INTASC IX Reflects on teaching</small>		Evidence of Student Assessment: <small>INTASC VIII Understands and uses formal and informal assessment strategies</small>		Evidence of Differentiation/Modification	
Evidence of Culturally Responsive Teaching 		Evidence of Achievement of Objectives <small>INTASC VIII Understands and uses formal and informal assessment strategies</small>		<small>1b demonstrates knowledge of students, 3e Demonstrates flexibility and responsiveness, INTASC III Understands how students differ in their approaches to learning, creates instructional opportunities adapted to diverse learners</small>	

Classroom Environment: 2a Creates an environment of respect and rapport (physical space accommodates and motivates learners)

Strengths:

Pay Attention To:

+ Areas of Growth:

Classroom Teacher (signature) _____ **Observer/Mentor (signature)** _____ **Date** _____
Key: ✓ Present or occurred + Positive; — Negative; n/o not observed; K Keep Working; M Mixed; W Worked hard; I Improvement noted

APPENDIX I

SELF-EVALUATION OF A LESSON

Post Observation Conference

Self-Evaluation of a Lesson

-Mentee Completion-

1. **Objectives:** Evaluation of student's achievement of stated objectives:

2. **Concern:** My concern about the lesson was...

3. **Classroom Management:** Interfered with or Supported Lesson?

Place an X on the scale (0-10):

0-1 2 3 4 5 6 7 8 9-10

Interfered-----Supported

Evidence:

4. Teaching Behavior Focused on:

List behaviors you included in your lesson to show competence in the above teaching behavior:

1
2
3

List those behaviors you could have included:

1
2
3

5. Summary: Check one:

Competency achieved. New teaching behavior focus: _____

Competency not achieved. Continue same teaching behavior focus.

APPENDIX J

**Post Observation Conference**

Elements of the Conference

1. Discussion of feelings
2. Review of the learning outcomes
3. Discussion of classroom management
4. Review of the teaching behavior focus
5. Identification of problem and mastered areas
6. Focus for the next coaching cycle
7. Summary

APPENDIX K

CONCEPTUAL LEVEL TEACHER BEHAVIOR OBSERVATION TOOL

(CLTBOT)

Instructions: Check either **a** or **b** for any behavior set observed. Write comments as needed on back of form.

COPAT DOMAIN	TEACHING BEHAVIORS
I.	Instructional Preparedness
_____	1. a. Teacher monitors high level of student time on task. (1.6)
a b	b. Teacher monitors a low level of student time on task.
_____	2. a. Teacher facilitates productive student engagement. (1.7)
a b	b. Teacher facilitates non-productive student engagement.
II.	Instructional Environment/ Management
_____	3. a. Teacher is appropriately flexible when enforcing class rules. (2.7)
a b	b. Teacher is inflexible when enforcing class rules.
_____	4. a. Student seating supports student interaction. (2.3)
a b	b. Student seating interferes with student interaction.
_____	5. a. Teacher manages student misbehavior effectively. (2.6)
a b	b. Teacher manages student misbehavior ineffectively.
_____	6. a. Teacher's emotional response to student behavior is appropriate. (2,6)
a b	b. Teacher's emotional response to student behavior is inappropriate.
III.	Instructional Lesson
_____	7. a. Teacher employs student-directed teaching methods as a primary mode of delivery. (3.6)
a b	b. Teacher employs teacher-directed methods as a primary mode of delivery.
_____	8. a. Teacher asks questions of varied levels. (3.12)
a b	b. Teacher asks lower-level questions, only.
_____	9. a. Teacher's lesson includes a variety of activities. (3.4)
a b	b. Teacher's lesson does not include a variety of activities.
_____	10. a. Teacher modifies lesson for individual students, as needed. (3.24)
a b	b. Teacher does not modify lesson for individual students, as needed.
_____	11. a. Teacher links the lesson with other learning. (3.3)
a b	b. Teacher does not link the lesson with other learning.
_____	12. a. Teacher connects the lesson with students' interests. (3.2)
a b	b. Teacher does not connect the lesson with students' interests.
_____	13. a. Teacher is responsive to student questions or comments during lesson. (3.13)
a b	b. Teacher is not responsive to student questions or comments during

		lesson.
		14. a. Teacher provides opportunities for student reflection. (3.18)
a	b	b. Teacher does not provide opportunity for student reflection.
IV.		Instructional Monitoring
		15. a. Teacher checks student progress regularly during the lesson. (4.4)
a	b	b. Teacher does not check student progress regularly during the lesson.
		16. a. Teacher uses both oral and written data to check student progress. (4.3)
a	b	b. Teacher uses only one source of data to check student progress.
		17. a. Teacher guides students through practice(s) and/or understanding of key concepts in the lesson. (4.6)
a	b	b. Teacher does not guide students through practice(s) and/or understanding of key concepts in the lesson.
V.		Instructional Motivation/ Feedback
		18. a. Teacher's verbal feedback affirms student responses. (5.3)
a	b	b. Teacher's verbal feedback lacks affirmation of student responses.
		19. a. Teacher is responsive to student opinions. (5.6)
a	b	b. Teacher is not responsive to student opinions.
		20. a. Teacher supports multiple viewpoints. (5.6)
a	b	b. Teacher does not support multiple viewpoints.
		21. a. Teacher sustains feedback when incorrect answers are given. (5.4)
a	b	b. Teacher does not sustain feedback when incorrect answers are given.

Summary

Sum a =	Sum b =	Sum a + b =
Sum a/Sum a+b (100)= %	Sum b/Sum a+b (100)= %	

Conceptual Level

Low Conceptual Level: $a < 40\%$
 $b > 60\%$

Moderate Conceptual Level: $40\% \leq a \leq 60\%$
 $40\% \leq b \leq 60\%$

High Conceptual Level: $a > 60\%$
 $b < 40\%$

Conceptual Level is _____.

APPENDIX M

CLTBOT BEHAVIOR DESCRIPTORS GUIDE

I. Instructional Preparedness

1. Monitors – Teacher observes student (on task) behaviors as indicators that objectives are being met. (This could relate to performance, group behavior, involvement, engagement, discussion or other behaviors) These objectives should result in either *high* time on task or *low* time on task.

- a. **High Level** – 80% of the time or higher
- b. **Low Level** – 79% of the time or below

2a. **Facilitates productive student engagement**- Appropriate behaviors related to the lesson which when engaged in, result in student time directed to reaching objectives of the lesson and most likely resulting in meeting the objectives. High level of engagement: 80% of the time or higher.

2b. **Non-productive student engagement**– Behaviors of the students that distract or detract from the purposes and objectives of the lesson, which when engaged in, result in a lack of meeting lesson objectives. Low level of engagement: 79% or lower.

II. Instructional Environment/Management

3a. **Appropriately flexible** – Teacher uses judgment about consequences of different class rules, making decisions in the best interest of the student when applying those rules. This does not mean simply ignoring the rules, but rather consciously choosing to adjust the rule for a specific purpose.

3b. **Inflexible** – Teacher does not vary from the rules. This goes beyond consistency; teacher is unable to discern when a rule may not be in the best interest of the students.

4a. **Seating supports** – Desks are arranged to encourage student interaction in pairs, in groups or for participation in class discussions, for examples.

4b. **Seating interferes** – Desks are not arranged to promote student interaction. An example would be desks that are arranged in straight rows, thus discouraging student interaction.

5a. **Manages effectively** – Teacher responds and redirects student misbehavior with minimal loss of time and distraction from lesson objectives.

5b. **Manages ineffectively** – Teacher either does not respond to student misbehavior that detracts or distracts from lesson objectives or responds in a manner that increases or prolongs the distraction.

6a. **Emotional response is appropriate** – Teacher’s emotions are under control and the demeanor is calm. The teacher responds consistently and appropriately when dealing with highly charged situations.

- 6b. **Emotional response is inappropriate** – Teacher demonstrates either an impulsive reaction or one that detracts from classroom stability. Examples might include anger, using criticism, showing frustration, using sarcasm or by yelling at student.

III. Instructional Lesson

7. Teaching Methods

- a. **Student Directed** – Lesson and/or strategy focuses on learning needs and interests of students: Some examples include discovery, inquiry, cooperative groups, Socratic methods, open-ended questioning, problem-based learning, project based learning.
- b. **Teacher Directed** – Lesson and/or strategy focuses on the teacher as dispenser of information. Some examples are teacher presentations, teacher lectures, teacher demonstrations, teacher's use of worksheets (Tried and true method), teacher modeling (science experiment), teacher directed board, overhead or computer directions.

8. Questioning (Bloom or other Taxonomy)

- a. **Varied levels** – Includes *knowledge, recall, comprehension, application, analysis, synthesis, evaluation, judgment, assessment.*
- b. **Lower levels** – *Recall, knowledge & comprehension, only.*

9. Variety of Activities

- a. 3 or more
- b. 1 or 2

10a. **Teacher Modifies Lesson** - Teacher is sensitive to students' needs and/or lack of understanding and responds by reteaching or using a different teaching strategy. (reads and flexes)

10b. **Teacher Does not modify** – Teacher either ignores student cues or is not aware of student needs and/or lack of understanding and continues with lesson without any adaptations.

11a. **Links the lesson** – Teacher makes connections for the student by summarizing, making comparisons, categorizing, integrating, discriminating, or reorganizing prior lessons to reinforce and support the learning objectives of the present lesson.

11b. **Does not link** - Teacher treats the present lesson as a stand alone with no connection to previous lessons.

12a. **Connects with student interests** – Teacher is concerned with motivating students by relating learning to student interest. Teacher establishes relevancy in the lesson.

12b. **Does not connect** – Teacher does not establish a relevant connection between learning and the students' interests.

- 13a. **Responsive to student questions** – Teacher responds to student questions and comments, including both content and feeling questions.
- 13b. **Is not responsive to student questions** – Teacher is concerned only with completing the lesson as planned and does not respond to students. May demonstrate an inconsistency in this area, such as responding to some, but not others.

14a. **Opportunities for Student Reflection:** Teacher understands and demonstrates that reflection is needed to make meaning of new learning. Opportunities are provided either during class or as part of a homework/out of class assignment. Examples could include: electronic journaling, handwritten journals, oral questioning in class, written assignment, group discussion, pair discussion.

14b. **Lack of Opportunities for Student Reflection:** Teacher is either not aware of the need for students to reflect on new learning or does not employ methods of teaching other than teacher directed methods.

IV. Instructional Monitoring

15a. **Teacher checks student progress regularly**– Teacher shows concern for student learning and checks progress at least 3 or more times during the lesson.

15b. **Teacher does not check student progress regularly**– Teacher does not take responsibility for student learning and may check progress 0-2 times.

16a. **Checks student progress with oral and written data** – Teacher employs varied methods, including questioning or other oral forms, plus writing for checking student progress.

16b. **Checks student progress with one source of data** – Teacher relies on one tried and true method.

17a. **Guided Practice: Guides Students** – Teacher deliberately (purposely) designs instructional lesson with opportunities for students to engage in practice while teacher guides (assists when requested or needed) the students in class. It can be observed in the classroom.

17b. **Guided Practice: Does not guide students** –Teacher relies on students to be responsible for their own learning – their own practice. Teacher does not assist when requested or needed. No overt evidence of practice observed during the lesson.

V. Instructional Motivation/Feedback

18a. **Feedback Affirms Student Responses** – Teacher values students' contributions and validates verbal responses.

18b. **Feedback Lacks affirmation** – Students are not aware of teacher's acceptance or concern for their contributions resulting in student's lack of motivation to respond.

19a. **Responsive to Student Opinions:** Teacher responds (invitingly) when students voice their opinions.

19b. **Non-responsive to Student Opinions:** Teacher either ignores students when they voice their opinions or disregards the opinion. Students could be confronted by the teacher, thus (potentially) creating a debilitating effect on the student.

20a. **Supports Multiple Viewpoints** – Teacher is open to other viewpoints, evidenced through engagement with students.

20b. **Does Not Support Multiple Viewpoints** – Teacher appears closed and unopen to multiple perspectives on the topic. Seems unwilling to consider alternatives.

21a. **Feedback for Incorrect Answers-Sustains Feedback-** Teacher is able to employ strategies to encourage student thinking and problem solving abilities that assist student to answer correctly. Teacher does not redirect the question and may provide hints or clues.

21b. **Does not sustain feedback** – Teacher either answers the question or asks another student for the answer rather than assisting student to answer question correctly.

APPENDIX N
CONTENT VALIDITY

Please rate the following items on the CLTBOT according to its **relevance** - its application for use as a behavior that you think would suggest conceptual level, and its **clarity** - its ability to be understood and scored by an observer. Rate each pair of items according to the following scale:

- A – Strongly Agree
- B – Agree
- C – No opinion
- D – Disagree
- E – Strongly Disagree

Conceptual Level Teacher Behavior Observation Tool (CLTBOT)

COPAT DOMAIN	TEACHING BEHAVIORS
I.	Instructional Preparedness
____ ____ a b	1. a. Teacher monitors high level of student time on task. (1.6)
	b. Teacher monitors a low level of student time on task.
	Relevance A B C D E
	Clarity A B C D E
____ ____ a b	2. a. Teacher facilitates productive student engagement. (1.7)
	b. Teacher facilitates non-productive student engagement.
	Relevance A B C D E
	Clarity A B C D E
II.	Instructional Environment/ Management
____ ____ a b	3. a. Teacher is appropriately flexible when enforcing class rules. (2.7)
	b. Teacher is inflexible when enforcing class rules.
	Relevance A B C D E
	Clarity A B C D E
____ ____ a b	4. a. Student seating supports student interaction. (2.3)
	b. Student seating interferes with student interaction.
	Relevance A B C D E
	Clarity A B C D E
____ ____ a b	5. a. Teacher manages student misbehavior effectively. (2.6)
	b. Teacher manages student misbehavior ineffectively.
	Relevance A B C D E
	Clarity A B C D E
____ ____ a b	6. a. Teacher's emotional response to student behavior is appropriate. (2.6)
	b. Teacher's emotional response to student behavior is inappropriate.
	Relevance A B C D E

		Clarity	A	B	C	D	E
III.		Instructional Lesson					
		7. a. Teacher employs student-directed teaching methods as a primary mode of delivery. (3.6)					
a	b	b. Teacher employs teacher-directed methods as a primary mode of delivery.					
		Relevance	A	B	C	D	E
		Clarity	A	B	C	D	E
		8. a. Teacher asks questions of varied levels. (3.12)					
a	b	b. Teacher asks lower-level questions, only.					
		Relevance	A	B	C	D	E
		Clarity	A	B	C	D	E
		9. a. Teacher's lesson includes a variety of activities. (3.4)					
a	b	b. Teacher's lesson does not include a variety of activities.					
		Relevance	A	B	C	D	E
		Clarity	A	B	C	D	E
		10. a. Teacher modifies lesson for individual students, as needed. (3.24)					
a	b	b. Teacher does not modify lesson for individual students, as needed.					
		Relevance	A	B	C	D	E
		Clarity	A	B	C	D	E
		11. a. Teacher links the lesson with other learning. (3.3)					
a	b	b. Teacher does not link the lesson with other learning.					
		Relevance	A	B	C	D	E
		Clarity	A	B	C	D	E
		12. a. Teacher connects the lesson with students' interests. (3.2)					
a	b	b. Teacher does not connect the lesson with students' interests.					
		Relevance	A	B	C	D	E
		Clarity	A	B	C	D	E
		13. a. Teacher is responsive to student questions or comments during lesson. (3.13)					
a	b	b. Teacher is not responsive to student questions or comments during lesson.					
		Relevance	A	B	C	D	E
		Clarity	A	B	C	D	E
		14. a. Teacher provides opportunities for student reflection. (3.18)					
a	b	b. Teacher does not provide opportunity for student reflection.					
		Relevance	A	B	C	D	E
		Clarity	A	B	C	D	E
IV.		Instructional Monitoring					
		15. a. Teacher checks student progress regularly during the lesson. (4.4)					
a	b	b. Teacher does not check student progress regularly during the lesson.					
		Relevance	A	B	C	D	E

		Clarity A B C D E
—	—	16. a. Teacher uses both oral and written data to check student progress. (4.3)
a	b	b. Teacher uses only one source of data to check student progress.
		Relevance A B C D E
		Clarity A B C D E
—	—	17. a. Teacher guides students through practice(s) and/or understanding of key concepts in the lesson. (4.6)
a	b	b. Teacher does not guide students through practice(s) and/or understanding of key concepts in the lesson.
		Relevance A B C D E
		Clarity A B C D E
V.		Instructional Motivation/ Feedback
—	—	18. a. Teacher’s verbal feedback affirms student responses. (5.3)
a	b	b. Teacher’s verbal feedback lacks affirmation of student responses.
		Relevance A B C D E
		Clarity A B C D E
—	—	19. a. Teacher is responsive to student opinions. (5.6)
a	b	b. Teacher is not responsive to student opinions.
		Relevance A B C D E
		Clarity A B C D E
—	—	20. a. Teacher supports multiple viewpoints. (5.6)
a	b	b. Teacher does not support multiple viewpoints.
		Relevance A B C D E
		Clarity A B C D E
—	—	21. a. Teacher sustains feedback when incorrect answers are given. (5.4)
a	b	b. Teacher does not sustain feedback when incorrect answers are given.
		Relevance A B C D E
		Clarity A B C D E

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Recent Conference Presentations:

Hollingshead, B. (2005, April). *Teaching and learning in rural and urban schools*. Paper presented at the fourth annual Texas Chapter of the National Association for Multicultural Education (NAME), Houston, TX.

Hollingshead, B., Foster, E., & Larrison, L. (2006, October). *Addressing teacher retention and effectiveness on democratic campuses with developmental mentoring and supervision*. Paper presented at the seventh annual Curriculum and Pedagogy Conference, Marble Falls, TX.