To the Faculty of Washington State University:

The Members of the Committee appointed to examine the dissertation of JON W. MCKENZIE find it satisfactory and recommend that it be accepted.

_________________________________
Chair
ACKNOWLEDGEMENT

First, I would like to thank my wife Tamara for her unconditional support. Without her support I would not have completed this degree. She has always been unselfish with time and tasks, thereby allowing me to complete this degree.

Next I would like to thank my committee: Dr. Michael Trevisan, Chairman, Dr. Jennifer Beller, and Dr. Dennis Warner for their time and effort in this dissertation. Many thanks.
ASSESSMENT REQUIREMENTS FOR SCHOOL PERSONNEL

IN NCATE INSTITUTIONS

Abstract

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The purpose of this study was to investigate the extent of assessment training pre-service teachers, school counselors, and principals receive in National Council for Accreditation of Teacher Education (NCATE) institutions. Assessment standards developed by professional organizations and questions generated by the researcher were utilized in developing the three on line pre-service questionnaires.

One hundred and fifty-five institutions representing 46 states and the District of Columbia responded to the on line pre-service teacher’s survey. Four states (9%) reported that an assessment course was state mandated. Fifteen states (32%) reported that an assessment course was institutionally mandated. The remaining 28 states (59%) reported that assessment information was embedded within other required courses. Within the 14 assessment elements surveyed, 95% of institutions reported exceeding or meeting these assessment standards. Most respondents reported using Interstate New Teacher
Assessment and Support Consortium Standards established by the Council of Chief State School Officers.

Seventy-one institutions representing 33 states responded to the online survey pre-service school counselor’s survey. Twenty-four states (73%) reported an assessment course was state mandated. Nine states (27%) reported an assessment course was institutionally mandated. Within the 15 assessment elements surveyed, over 98% of institutions self-reported exceeding or meeting assessment standards while teaching pre-service school counselors. Most respondents used Council for Accreditation of Counseling and Related Educational Program standards.

Sixty-six institutions representing 30 states and the District of Columbia responded to the online pre-service principal’s survey. Nine states (30%) reported that an assessment course was state mandated. Three states (10%) reported an assessment course was institutionally mandated. Sixteen states (53%) reported that assessment information was embedded within other required coursework, and two states (7%) reported that an optional assessment course existed. Within the 15 assessment elements surveyed, 99% of institutions reported exceeding or meeting these assessment standards while instructing pre-service principals. Most respondents reported using Interstate School Leaders Consortium standards.
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DEDICATION

This dissertation is dedicated to my Aunt Dianna who valued God, family and education.

She was truly an exceptional person who gave unselfishly to everyone she knew. She is truly missed by family and friends alike.
CHAPTER ONE

Introduction

In today’s educational environment, proficiency in assessment is critical for school personnel and essential for student achievement (Banks, 2005; Popham, 2005; Stiggins, 2005; Taylor & Nolen, 2005; Trevisan, 1996, 2002). School personnel utilizing strong assessment skills can impact student achievement at all levels of the educational process and influence school reform (Trevisan, 1996). This reform is based in large part by active involvement of those closest to students (Smith & O’Day, 1990). School personnel in this study are specifically limited to pre-service teachers, pre-service school counselors, and pre-service principals, i.e. school personnel who can directly impact student achievement via quality assessment.

In the classroom, mastery of assessment skills empowers teachers to effectively engage in activities such as planning curriculum, test development, and enhanced instruction in hopes of increasing achievement. At the instructional support level, school counselors and principals use assessment skills to identify students with special needs and to increase teacher effectiveness respectively (Stiggins, 2005). Colleges and universities providing assessment training to pre-service teachers, school counselors and principals will enable these future school personnel in becoming the agents, initiators and catalyst of change, and having some influence on reform efforts (Smith & O’Day, 1990). Measured by student outcomes this reform effort considers the school building as the basic unit of change driven by school personnel’s accountability to increase student achievement; thus, the rationale to focus on pre-service teachers, school counselors and principals. (Smith & O’Day, 1990).
Black and Wiliam (1998) investigated three research questions by conducting an extensive review of the literature and concluded that the use of formative assessment in classrooms raised student achievement. Student achievement gains measured in effect sizes ranged from .4 to .7 for students from five years old to undergraduate students. Additionally, improved formative assessment helped low achieving students more than any other group of students thus, reducing the achievement gap.

At all levels and in a variety of ways, the additional impact that school personnel can have on student achievement via effective assessment may help achieve imposed local, state and federal standards. For example, teachers assess student achievement. Counselors assess student needs. Principals assess teacher and counselor effectiveness, as well as student achievement. In addition, there are many other ways school personnel utilize their assessment skills in hopes of increasing student achievement and meeting imposed standards. Using assessment as a motivator, helping low achieving students reach their academic potential, and increasing and/or rekindling student confidence and renewing student faith in themselves as learners are a few of the ways assessment skills can be utilized (Stiggins, 2005).

School personnel’s effectiveness in increasing student achievement is directly impacted by the amount and quality of formal training received at colleges and universities (Stiggins, 1988). At a minimum, assessment literate school staff are vital in increasing student achievement (Trevisan, 2000). Thus, the purpose of this study was to determine the degree to which educational institutions offer or require assessment courses for pre-service school personnel, to determine assessment course content and to what
extent National Council for Accreditation of Teacher Education (NCATE) institutions have aligned their courses with existing standards.

Over the last six decades, researchers and professional organizations have promoted the position that colleges and universities have not thoroughly trained school personnel in assessment. Noll, (1955), Mayo (1964), Goslin (1967), Roeder (1972), Farr & Griffin, (1973), Yeh, (1978), Loesch (1984), Schafer & Lissitz (1987), Stiggins (1991a), Elmore, Ekstrom & Diamond (1993), Arter, Stiggins, Duke, & Sagor (1993), Trevisan, (1999) and Thorn & Mulvenon (2002) have all concluded that pre-service school personnel receive inadequate assessment training. Researchers have also written about the positive effects of assessment training when such training is received (Cizek, 2000; Gullickson, 1982). However, given the fact that the time spent on assessment related activities has increased from 10% in 1987 (Schaffer & Lissitz) to 33% in 2005 (Stiggins) the concerns listed above are valid. School districts suffer the results of this inadequacy by incurring costs of in-service assessment training, which continues to grow (Stiggins, 1999). Individual researchers’ concerns on this issue are shared by professional organizations within the educational community as well.

Professional educational organizations have established assessment standards for pre-service school personnel. For example, the American Federation of Teachers (AFT), the National Council of Measurement in Education (NCME), and the National Education Association (NEA) have all set standards for teachers. Additionally, the Interstate New Teacher Association and Support Consortium (INTASC) standards established by the Council of Chief State School Officers (CCSSO), have written assessment standards for pre-service teachers.
Organizations setting assessment standards for pre-service school counselors include the combined standards of the Association for Assessment in Counseling (AAC), the American School Counselor Association (ASCA), and the National Council on Measurement in Education (NCME). Additionally, standards developed by the Council for Accreditation of Counseling and Related Educational Programs (CACREP) have been written for pre-service school counselors. The Association for Assessment in Counseling and Education (AACE) has also developed pre-service school counselor assessment standards as well. Finally, the American Educational Research Association (AERA), the American Psychological Association (APA), and the National Council on Measurement in Education (NCME) jointly developed standards for pre-service school counselors.

Organizations have also set assessment standards for pre-service principals. The combined standards of the American Association of School Administrators (AASA), the National Association of Elementary School Principals (NAESP), the National Association of Secondary Principals (NASSP), and the National Council on Measurement in Education (NCME) represent one such standard. Standards developed by the Interstate School Leaders Licensure Consortium (ISLLC) have been written for principals as well. Finally, the National Policy Board for Educational Administration (NPBEA) standard contains assessment competencies for principals. All these organizations argue that in order for pre-service school personnel to maximize student achievement, adequate assessment training must be provided.

Since Schafer and Lissitz’s (1987) study, no researcher has conducted a large-scale descriptive investigation into the amount and content of assessment training school personnel currently receive within institutions that certify educators. States and schools of
education have previously mentioned standards to form assessment courses and specific content for pre-service school personnel. Such standard based courses, whether state or institutionally mandated, if implemented could help drive reform within colleges and universities that educate school personnel.

The National Council for Accreditation of Teacher Education (NCATE) is officially recognized by the U.S. Secretary of Education as the organization that accredits colleges and universities that prepare pre-service school personnel. Additionally, the Council for Higher Education Accreditation also recognizes NCATE. Colleges and universities belonging to NCATE voluntarily request and pay for a vigorous peer review process to ensure that their pre-service school personnel have met specific standards (National Council for Accreditation of Teacher Education, 2001).

Accountability and improvement are critical for a college’s and university’s status with NCATE, whether an institution’s status is initial, pertaining to teacher preparation, or advanced graduate programs, such as master level teachers, school counselors or principal certificates. Alignment of instruction and curriculum with professional, state and institutional standards, field experiences, efficacy of courses, and programs, and, finally, attainment of content knowledge and demonstration of teaching that leads to student learning by candidates is important to institutions affiliated with NCATE (National Council for Accreditation of Teacher Education, 2001).

Given the dearth of assessment training documented in the literature, and the creation of assessment standards for school personnel, since Schafer and Lissitz’s (1987) study, it seemed timely to investigate whether assessment training requirements for pre-service teachers, pre-service school counselors and pre-service principals have changed.
The information gleaned from this survey has provided insight into whether current training requirements are in line with the importance placed on assessment by researchers and professional organizations, given current state and federal mandates.

Need for the Study

Historically, colleges and universities across the country have lacked assessment courses in their curriculums for pre-service school personnel (Arter, Stiggins, Duke, & Sagor, 1993; Goslin, 1967; Gullickson, 1986a; Noll, 1955; Roeder, 1972; Schafer & Lissitz, 1987; Stiggins, 1991a; Thorn & Mulvenon, 2002). Researchers have investigated and written about the importance of providing pre-service school personnel with adequate assessment training. Professional organizations have developed standards relating to assessment for pre-service school personnel. Despite the importance of assessment in the P-12 educational system, it is unknown if colleges and universities have responded to these calls by offering or requiring assessment courses for pre-service school personnel within NCATE colleges and universities.

The focus of this study was to determine the extent to which assessment coursework is offered for pre-service school personnel at NCATE colleges and universities. Required and optional assessment coursework for pre-service teachers, school counselors and principals was investigated to determine if colleges and universities have kept pace with recommendations from researchers and professional organizations. Thus, three research questions have been written in order to investigate this theme.
Research Questions

1. Are assessment courses for pre-service school personnel offered by NCATE institutions?

2. If assessment courses are offered by NCATE institutions are they required for pre-service school personnel?

3. Are assessment courses for pre-service school personnel offered by NCATE institutions aligned with existing standards?

Assumptions

Colleges and universities affiliated with NCATE are representative of all colleges and universities that certify school personnel across the United States. By sampling higher education institutions within NCATE, an adequate representation of NCATE colleges and universities that certify pre-service school personnel would be obtained.

Limitations

Pre-service school personnel could choose to do further reading and/or research on assessment outside the possible required university assessment courses. The study would not be able to account for this type of additional training.

Significance of the Study

The results of this study are theoretically significant in that they contribute to the current body of literature in school personnel’s preparation requirements associated with assessment training.
CHAPTER TWO

Review of Literature

Historically, assessment courses at colleges and universities for pre-service school personnel have been limited both by the number of institutions offering such courses, and by these courses being listed as optional in the curriculum for pre-service school personnel (Arter, Stiggins, Duke & Sagor, 1993; Elmore, Ekstrom & Diamond, 1993; Goslin, 1967; Loesch, 1984: Noll, 1955; Roeder, 1972; Schafer & Lissitz, 1987; Stiggins, 1991a; Thorn & Mulvenon, 2002). Research in the 1940s and 1950s focused primarily on the number of institutions that required assessment courses and the emphasis placed on those courses. Research conducted in the 1960s and 1970s involved larger institutional, student, and teacher samples that investigated broader research questions. The 1980s and 1990s witnessed researchers and national organizations investigating an assortment of relevant issues involving assessment. Studies conducted after 2000 have investigated numerous aspects of the assessment issue involving pre-service school personnel.

Numerous examples of research conducted by individuals and professional organizations are outlined. However, despite national organizations and researchers’ persistence on the assessment training for pre-service school personnel, the advances that institutions of higher education and states have made in providing or requiring teachers, school counselors and principals with adequate assessment coursework, and thus assessment skills, have been limited (Trevisan, 2002). What follows is a historical review of the literature beginning in the 1940s.
Pre-Service Teachers’ Assessment Training

Scates’ (1943) article on assessment noted the differences between classroom assessments and standardized testing. He warned the education community of the consequences of school effectiveness if standardized testing overwhelmed classroom assessment. More importantly, he advised educators to accommodate these differences, so that each assessment practice could reach its full potential. By writing about these differences, Scates set the foundation that many researchers would follow in promoting the importance that school personnel are knowledgeable about the art and practice of classroom assessment. Thus, Scates’ article served as the starting point for a plethora of research that followed on school personnel’s ability to utilize classroom assessment skills to enhance instruction and increase student achievement.

Shortly thereafter, Noll’s (1955) investigated the extent that colleges and universities were educating pre-service school personnel in assessment. Noll investigated the number of colleges and universities that required an assessment course for pre-service teachers. Eighty colleges were surveyed. They represented four types of institutions: large publicly supported institutions, large private institutions, state-teachers’ colleges, and liberal arts colleges. It is not clear from the report how institutions were sampled. However, an attempt to sample as wide of a geographic area as possible was employed. Results indicated that only five states, representing nine schools (10%), required a measurement course. Four other states recommended such a course. An elective introductory measurement course was offered by 66 (82.5%) of the institutions surveyed (Noll, 1955).
The telling statistic in this study was that only nine of the 66 schools (10%) required or recommended a measurement course for pre-service teacher certification (Noll, 1955). Despite the high percentage of colleges and universities offering a measurement course, the limited number of institutions that required or even recommended such a course in measurement clearly signaled the lack of importance placed on assessment skills in this decade, and thus, the subsequent training that pre-service school personnel received in assessment related coursework from these institutions.

Despite the high number of elective introductory measurement courses, pre-service school personnel were not receiving the assessment training necessary to maximize student achievement. Similarly, required courses in pre-service teacher preparation were not fully addressing the needs of school personnel. Information obtained by pre-service teachers regarding evaluation and measurement did not prepare them to assess their students’ abilities, or to make modifications in lesson plans to improve student learning (Noll, 1955).

Driving this point further, Noll (1955) stated, “If knowledge and skill in measurement and evaluation are important elements in teachers’ competencies, it is necessary to give them systematic instruction in this area. The present study shows that teachers are not getting it” (p. 90). In closing, Noll (1955) emphasized that the assessment problem should be of concern to everyone involved in education. Studies conducted in the 1960s addressed this concern, and emphasized the importance of school personnel being properly trained in assessment.
No research on assessment training or utilizing assessment strategies was published for pre-service school counselors or principals during this decade. However research involving pre-service teachers continued.

The 1960s

Researchers in the 1960s (Mayo, 1964; Goslin 1967) expanded upon the initial research question. Generally, results revealed a similar lack of emphasis placed on training pre-service school personnel in educational measurement, now commonly referred to as assessment coursework at colleges and universities. States and institutions in this decade made few changes in required educational measurement coursework for pre-service school personnel. Thus, school personnel’s ability to effectively assess remained at about the same level as the previous decade, (Mayo, 1964) and little or no action was taken because of these research studies.

Pre-Service Teachers’ Assessment Training

Mayo’s (1964) study investigated the measurement competency of 2,877 graduating seniors representing 86 institutions of higher education. Results showed that these graduating seniors did not demonstrate a very high level of measurement competency as defined by scores on an assessment test.

Recommendations from this study focused on improving future measurement courses by adding more practical measurement experience. This suggestion was made in hopes of demonstrating to states, colleges and universities the need for future teachers to demonstrate proficiency in measurement and to increase their commitment for learning measurement skills. Emphasizing the point, Mayo wrote, “It seems apparent that the high levels of measurement competency desirable for the teacher to play his evaluative, as
well as his instructional role have not materialized from traditional training practice” (Mayo, p. 64). Other researchers also investigated the assessment training that pre-service teachers received while in college.

Goslin (1967) investigated the percentage of teachers that had a course in tests and measurement. Teachers (n=1,450) from 75 public secondary and parochial schools from across the United States were surveyed. One-fourth of the responding teachers (25%) reported taking such a course. The small percentage of teachers served as an indicator of the number of institutions requiring tests and measurement courses for pre-service school personnel. The more salient statistic in this study was the large percentage of teachers (75%) who reported not having had a test and measurement course. This statistic provided an indicator of the participating institution’s philosophy of the importance placed on requiring coursework in tests and measurement for pre-service school personnel during this decade. Consequently, pre-service school personnel entered the profession during the 1960s with limited, or no assessment skills (Goslin, 1967). Researchers in the next decade continued to investigate to what extent colleges and universities required pre-service school personnel to enroll in assessment courses and the content taught in those courses.

*The 1970s*

Studies conducted in the 1970s (Hills, 1977; Roeder, 1972) generally revealed that about one-half of universities surveyed did not require an evaluation course for elementary teachers. When colleges and universities did require pre-service school personnel to enroll in an assessment course, the instruction they received was minimal,
usually focusing on item writing, analysis of items, and choosing standardized tests (Mayo, 1970).

*Pre-Service Teachers’ Assessment Training*

Roeder (1972) investigated the number of accredited institutions across the United States that required pre-service elementary teachers to take a tests and measurement course(s). Surveys sent to 940 colleges and universities represented all 50 states and the District of Columbia. This mailing produced 806 usable surveys from 33 states. Seventeen states were not represented in the study. A second mailing may have increased the response rate and increased the generalizability of the study, but was not conducted. However, the results provided valuable information about pre-service assessment training.

Results revealed the importance institutions and states placed on evaluation coursework during the decade. Over one-half (58%) of these institutions did not require an evaluation course. However, 104 institutions (12%) required a one or two semester hour course in evaluation. One hundred and fifty-eight (18%) required a three-semester hour course in evaluation, and 12 institutions (1%) required a four or more semester hour course in evaluation. Thus, only 274 institutions (31%) required an assessment course (Roeder, 1972).

Roeder (1972) wrote that when institutions did require an evaluation course, the majority of elementary teachers received minimal exposure to evaluation techniques. Roeder elaborated on the issue of training pre-service teachers:

When a comparison is made between the number of semester hours, which institutions devote to evaluation courses, and the number of hours devoted
to courses of lesser importance, it appears that even at institutions which do require a course in evaluation, the majority of teachers receive only a minimal exposure to the complex world of evaluation. Therefore, the answer to the original question is readily apparent—No! Most of today’s elementary teachers are NOT prepared to use tests (p.240)!

Roeder (1972) concluded by stating how much importance can be attached to report cards, and tests scores, which these elementary teachers assign. Indeed, pre-service assessment training seemed to be lacking. A follow up article by Roeder’s (1973) on this study echoed his earlier thoughts.

When one considers the increasing importance, which report card marks and test scores play in the lives of our children, it is readily apparent that the failure of teacher education institutions to provide prospective teachers with at least minimal understanding of evaluation is inexcusable (p.143). Other researchers continued to investigate the assessment issue in more specific detail.

Farr and Griffin’s (1973) investigation supported two hypotheses developed from previous research. Teachers’ knowledge about measurement is limited, and pre-service teachers are not receiving enough instruction about measurement in order to be effective as teachers. They postulated that in part, pre-service teachers “avoid measurement courses because measurement courses generally are not relevant, in the teacher’s view, to her daily instructional activities” (p.25). From the past research and the two hypotheses, the researchers postulated five specific concerns.
First, there was concern over the adequacy of pre-service preparation with standardized tests. Second, the researchers believed that pre-service teachers should know more about measurement concepts than they demonstrated. Third, classroom testing for instructional planning failed to be adequately addressed in existing measurement courses. Fourth, pre-service teachers are extensively involved in the testing and evaluation process. Finally, students’ standardized achievement tests were used heavily by teachers and this indicated that teachers put much emphasis on standardized test scores (Farr & Griffin, 1973).

In closing, Farr and Griffin wrote, “We have a serious need to take a hard look at our teacher training programs in tests and measurement” (p.28). Additional research conducted on assessment course work for school counselors revealed similar concerns.

**Pre-Service School Counselors’ Assessment Training**

Goldman (1972) wrote that in the measurement field, professors and test people believed that pre-service counselors were “insufficiently prepared to use tests, make too many errors in administration, scoring, and interpretation of tests, and on the whole misuse or fail to use tests more often than they use them well and productively” (p.217). The focus of the remainder of the article was that counselors may want to give up using tests altogether. Justifying this position Goldman stated that counseling students typically have objected to the excessive time and attention given to measurement courses. However, no mention was given to the number or requirement of such courses. Research conducted during the 1980s continued investigating the extent and quality of assessment training pre-service personnel received, results showed few changes.
The 1980s

A decade of studies (Gullickson and Hopkins, 1987; Loesch, 1984; Newman & Stalling, 1982; Schafer & Lissitz 1987) showed very little improvement in the percentage of institutions that required pre-service school personnel to enroll in an assessment course. In 1983, only 11 states had specific requirements in assessment as a condition for earning a teaching certificate (Stiggins, 2001). In the same time-period, researchers (Gullickson, 1986b; Rosenfeld, Thornton, & Shurnik, 1986; Smith, Silverman, & Borg, 1980) had identified classroom assessment as one of six core job functions, and thus a needed skill in becoming a successful teacher.

Pre-Service Teachers’ Assessment Training

Although not a direct study of pre-service teachers’ assessment training, Newman and Stallings’ (1982) study did investigate in-service teacher competency in classroom testing using two instruments, the 17-item Questionnaire for In-Service Teachers and the 30-item Teacher-Made Tests Assessment Instrument (TTAI). These instruments were distributed to 1,500 regular classroom teachers who taught grades one through twelve. Surveys returned from 294 in-service teachers produced a return rate of 20% for the study. This low return rate is a limitation of this study.

Demographic information from the respondents indicated a disproportionately large number of women, (81%) either white or nonwhite. The majority (58%) of the respondents were white, while nonwhites (41%) accounted for the remainder. Secondary teachers accounted for 51% of the sample, while elementary teachers accounted for 49% (Newman & Stalling, 1982).
The high number of in-service teachers with training in more than one measurement course (44%) was encouraging, but these teachers averaged only 55% correct responses on the TTAI test. Teachers without training in measurement courses (56%) averaged 48% correct responses (Newman and Stalling, 1982). These results mirrored Mayo’s (1964) findings on beginning teachers’ assessment competence. Both studies concluded that traditional measurement training at colleges and universities moderately prepared pre-service teachers to be effective at assessment.

Newman and Stallings’ (1982) study further revealed that these in-service teachers extensively used teacher made tests, and spent a substantial amount of time constructing, administering, scoring, and interpreting. In-service teachers reported that one-half of all tests they used were self-made. In addition, Newman and Stallings reported that in-service teachers spent about ten percent of their professional time assessing. This assessment time was spent performing a variety of tasks.

Teachers mostly used objective test items in the following order (a) completion, (b) multiple-choice, (c) matching, (d) true or false, (e) short answer, (f) calculation, and (g) essay (Newman & Stallings, 1982). All of these assessment types focus on recall of isolated or clustered facts and knowledge, except essay. Reasoning, skills, products and dispositions are rarely assessed using selected response assessments (Stiggins, 2005). Thus, these in-service teachers’ understanding and proper use of assessment skills illustrated by their scores are indicative of the heavy focus placed on assessing recall.

The educational importance coming from Newman and Stallings’ (1982) study was that there has been little change in teacher competency in assessment since Mayo’s (1964) study. In-service teachers’ understanding and proper use of assessment skills
continued to be limited. However, important recommendations from Newman and Stallings included requiring teachers to be competent in test construction, and also influenced a change in the qualitative nature of pre-service and in-service assessment coursework. Newman and Stallings wrote, “The results of this study should be useful to measurement educators in planning more relevant and effective coursework for improving classroom practice. Finding ways to make coursework more meaningful to teachers is a promising avenue for future research” (p.13). Other researchers made similar conclusions.

Fleming and Chamber’s (1983) study evaluated nearly 400 teacher made tests. Their results criticized teacher made tests claiming the tests primarily measured lower order skills, such as rote memory, or declarative knowledge, and had very little application of that knowledge. Gullickson (1985) reported that the most used assessment procedure was an objective assessment, followed by projects, term papers, and essays. Both research studies revealed that teachers tended to use assessment procedures that measured knowledge and understanding, or lower order skills. Additional studies investigated professors’ and K-12 teachers’ perspective on assessment training.

Gullickson’s (1986a) study compared college professors’ (n=24) and K-12 teachers’ (n=360) views on assessment courses offered to pre-service teachers. All teachers were from a Midwestern state, while all professors were from that state and the six surrounding states. Professional demographics information was obtained on both teachers and professors.

Most teachers (52%) taught at the secondary level. The remaining teachers (45%) taught at the elementary level, or at both levels. Most responding professors (81%) held a
doctorate degree. The remaining professors held a masters’ degree. Although these professors had majored in a variety of disciplines, almost half had either majored or minored in research design, educational psychology, or psychology. Ninety-two percent of these professors reported taking one educational measurement course, and 88% reported taking at least six semester hours of measurement coursework. The median number of semester hours taken in educational measurement was nine.

Teachers and professors were given a list of eight categories of measurement activities. These categories were (a) preparing exams, (b) administering and scoring tests, (c) general assessment information regarding selection and use of tests, (d) employing other evaluating devices, (e) computing and interpreting statistical data, (f) using test results for instructional planning, (g) using test results for summative evaluation purposes, and (h) testing and the law. Teachers then indicated the relative importance placed on the eight areas. Professors indicated the instructional importance they gave to each of the eight areas in their pre-service assessment courses (Gullickson, 1986a).

Gullickson (1986a) reported that multiple analysis of variance (MANVO) statistics indicated that significant differences ($F(8,375) = 13.82, p.<.001$) existed between teachers’ and professors’ views. Five post hoc analyses were also significant ($p.<.05$). These five areas were (a) employing other evaluating devices, (b) computing and evaluating statistics, (c) using tests for formative evaluation, (d) using tests for summative evaluation, and (e) testing the law.

Post hoc analyses were not significant in three areas. Professors and teachers agreed on (a) the importance of preparing exams, (b) administering and scoring tests, and (c) general assessment information regarding selection and use of tests. The two groups
had the highest agreement rating on preparation of exams. The lowest agreement rating was between teachers and professors on statistics. Gullickson (1986a) posited that teachers did not have the background necessary to apply statistics in an evaluative manner and that they may not view statistical analyses as worth the effort of learning it. Additional studies conducted in the mid-western United States provided more information within assessment training for pre-service teachers.

Gullickson and Hopkins (1987) systematically sampled 28 mid-western colleges that granted degrees in elementary and secondary education. A response rate of 85% provided information from 17 private and 11 public colleges. Results indicated that one-half of the pre-service teachers enrolled in a separate measurement course and the other one-half received this instruction within the context of another course. “Educational measurement and evaluation information is provided to undergraduate students as a separate course in 71% of the colleges, yet only three fourths of the colleges that offer a separate course require it for preservice teachers.” (Gullickson & Hopkins, p. 13). Thus, when the assessment course was optional, few students (25% or fewer) enrolled in the course.

When these courses were required and offered separately, students in this study either took a two semester hour credit course (56%) or a three semester credit course (28%) and they were usually juniors (56%) or seniors (28%). Most enrolled in the course before student teaching. Separate courses were more often a required class in public (90%) institutions than in private (29%) institutions (Gullickson & Hopkins, 1987). Demographic information provided insight into the importance placed on these courses within colleges.
Demographic information on the instructors teaching the courses tended to remain constant across sampled colleges. A small group of experienced professors (41%) taught the course. Another 41% of professors reported that one person in addition to themselves taught the courses. All instructors reported having a master’s degree, and 82% reported having a doctorate. Across all 28 colleges, no graduate students taught an assessment course (Gullickson & Hopkins, 1987).

Educational background seemed to play a role in choosing instructors as well. Almost half of the instructors (46%) reported having majored in measurement related content areas, while 28% reported a minor concentration in measurement and 46% reported majoring in an area of education. Seven percent reported not majoring in education or measurement. Summing up the characteristics of instructors, 74% reported majoring in measurement or a measurement related area. Eighty percent of the instructors had taken an undergraduate measurement course, while 89% had taken at least six semester hours of measurement training. Finally, 93% of these instructors reported teaching at the elementary or secondary level for an average of seven years and teaching at the college level for 14 years (Gullickson & Hopkins, 1987). Given these backgrounds, professors reported emphasizing specific elements within these assessment courses.

Course instruction was reported on five factors: (a) theoretical versus practical, (b) instructional strategies used to teach the course, (c) time devoted to various activities, (d) use of a computer as an instructional tool, and (e) the emphasis given to each of the eight areas of educational measurement and evaluation. The majority of professors (56%) reported an equal split of time spent in courses between theory and practice. Thirty-six percent reported emphasizing theory, and eight percent reported an emphasis on practice.
with some emphasis on theory. Most instructors tended to use lecture/discussion format along with student activities. A smaller portion (25%) occasionally or frequently used self-study modules. In addition, 34% occasionally or frequently used student directed tutorials. A typical class was divided into three major areas, utilizing the following percentage of time: lecture and discussion 50%, student activities 40%, and testing 10% (Gullickson & Hopkins, 1987).

The content emphasis of these pre-service assessment classes was divided into eight areas. The areas of greatest importance are listed in order. Computing and interpreting statistical data, preparing exams, administering and scoring tests, using test results for instructional planning and formative evaluation, general assessment issues, using test results for summative evaluation purposes, employing non-test evaluative devices, and legal issues in testing composed the eight areas. These courses were overly preoccupied with the teaching of statistics (Gullickson & Hopkins, 1987). Additional research involving numerous colleges and universities across the states revealed specific concerns about training provided to pre-service school personnel.

Schafer and Lissitz’s (1987) conducted the most comprehensive study to date on measurement training of pre-service school personnel. Their study investigated the status of measurement training pre-service school personnel received at American Association of Colleges for Teacher Education (AACTE) institutions. Specifically, they investigated what was taught, how it was delivered, and if there was pressure to change assessment training from K-12 school personnel. The study, divided into eight curricula specialties provided information into the types and numbers of assessment courses colleges and universities were offering pre-service school personnel. If states required such an
assessment course was also investigated. Areas of study included educational administration, school counseling, secondary education in mathematics, secondary education in English, secondary education in science, elementary education, and special education.

Responses were received from 438 institutions resulting in a 62% return rate. In all 1,665 returned surveys averaging 205 surveys for each of the eight areas were analyzed. Results indicated that a high of 51% of institutions required formal assessment coursework in elementary education, to a low of 43% of institutions in secondary education (Schafer & Lissitz, 1987).

The percentage of programs that required a formal measurement course varied across the eight programs. Special education majors were required to take a formal measurement course in 31% of the schools surveyed, administration majors in 29%, secondary mathematics majors in 26%, secondary science in 25%, secondary social study majors in 24%, elementary education majors in 24%, secondary English majors in 23% and school counselors in 22% of the universities surveyed. Thus, when combining all program areas, the modal response was that most universities did not require a formal measurement course in order to fulfill a graduation requirement. When asked if there was a state requirement, responses changed (Schafer & Lissitz, 1987).

The percentage of programs that required a formal measurement course as part of a state mandate in each of the eight areas changed the results of the study. School counselors were required to take a formal measurement course in 76% of the schools surveyed, special education majors in 53%, elementary education majors in 27%, secondary English majors in 23%, secondary social studies majors in 22%, secondary
science majors in 20%, secondary mathematics majors in 17% and administration majors in 15% of the schools surveyed. With the exception of school counselors and special education majors, the majority of pre-service teachers did not have a required formal measurement course as part of their curricula. Thus, upon graduation, over half of the teachers receiving degrees from these institutions were not fully equipped to assess students (Schafer & Lissitz, 1987).

Schafer and Lissitz (1987) also investigated the measurement background of instructors who taught these assessment courses at all three educational levels. Fixed responses ranged from one to five. A response of (1) indicated little or no measurement background, (2) some measurement background, (3) indicated a moderate measurement background, (4) indicated a strong measurement background and (5) indicated a very strong measurement background. Responses gathered in the eight undergraduate curricula areas revealed that the strength of special education instructors was highest at 4.1; secondary mathematics instructors 3.8; secondary English, secondary science, and elementary education 3.7; administration 3.6; school counseling 3.5; and secondary social studies was lowest at 3.4.

Responses gathered in the eight masters level curricula areas indicated that the strength of special education and school counseling was highest at 4.3; secondary mathematics, secondary English and elementary education was 4.1; administration was 4.0; secondary science was 3.9 and secondary social studies was lowest at 3.8.

Responses gathered in the eight doctoral curricula areas revealed that the strength of special education and school counseling was highest at 4.5; elementary education was 4.4; administration and secondary English was 4.3; secondary social studies and
secondary mathematics was 4.2 and secondary science was lowest at 3.9. Thus, across three levels, special education and school counselor instructors consistently had the best measurement backgrounds. Other research questions followed within this study.

Schafer and Lissitz (1987) asked respondents if a measurement course should be required at each degree level within the eight curriculum areas. The percentage of “yes” responses at the bachelor level revealed the following results. Across all eight curricula, results indicated that for 57% of all bachelor programs, 69% of all master programs, and 70% of all doctoral programs, consensus existed for requiring a measurement course. The increased percentage of responses urging graduate programs to require an assessment course indicated a possible trend in assessment courses being required for advanced degrees. However, agreement for an assessment course in two other programs was highest across educational levels.

Consensus for measurement courses for special education and school counseling remained the highest at all three educational levels. At the bachelor’s level, consensus existed with 85% of respondents that special education majors should have a measurement course, while consensus for school counselors was 67 percent. At the masters’ level consensus was 93% and 97% for special education and school counselors programs respectively. At the doctoral level consensus was 79% and 95% for special education and school counselors programs, respectively. In contrast, consensus was lowest for administrators to have a required measurement course at the bachelor level (39%), master’s level (47%) and doctoral level (61%) (Schafer & Lissitz, 1987).

Schaffer and Lissitz (1987) also investigated the pressure from K-12 public school personnel to increase skills in testing and measurement for pre-service school
personnel. Results indicated that little pressure existed, and that the percentage of respondents reporting such change ranged from 44% for special education to 8% in secondary science. The mean percentage for all eight curricula areas was 19%.

Conclusions drawn from this data remained consistent with past studies.

Conclusions written by Schaffer and Lissitz (1987) indicated, “teachers seem to be ill trained to use accepted measurement practices, as revealed by their performance on tests of these principles and by analyses of their tests” (p.61). Excluding school counselors and special education majors, a significant proportion (49%) of future school personnel were not required to take a formal measurement course for certification. Further, institutions have professors who conduct research in the area of educational measurement; however, in the majority of institutions they did not seem to be instructing the formal measurement courses required for pre-service school personnel. In summary, in all of the institutions and program areas investigated, assessment training within administration programs was weakest, while school counseling programs provided the most measurement training.

Pre-Service School Counselors’ Assessment Training

In the 1980s researchers began debating the benefits of regulating the assessment training pre-service school counselors were receiving. Loesch’s (1984) article was controversial. Loesch posited that measurement and evaluation training become standardized across institutions that certify counselors. Justifying the standards Loesch wrote, “more specific guidelines in measurement and evaluation of persons are needed” (p.154). Loesch also stated that application of these standards across institutions will allow uniform application of evaluation standards for programs and persons. The uniform
standards focus on enabling all graduating counselors to be proficient at measurement and evaluation.

Loesch’s (1984) 15 standards are as follows:

I. The curriculum included at least one basic, full term course focusing exclusively on the measurement and evaluation of persons.

II. The basic course in measurement and evaluation of persons should be taught within the curriculum of the training program by faculty with demonstrated expertise in both measurement and evaluation of persons and counseling or student personnel services.

III. The basic course in measurement and evaluation of persons should be a curricular requirement for the first term of enrollment in the professional program.

IV. Adequate measurement and evaluation resources, including tests, books, inventories and computer-assisted assessments, are provided for review and use by students.

V. A course in basic statistics is a prerequisite to the basic course in measurement and evaluation of persons. The basic course in statistics should at least cover types of data, measures of central tendency, indices of variance, correlation and measurement error.

VI. The basic course in measurement and evaluation of persons should cover individual and group assessments of aptitude, intelligence, achievement, interests, and personality. These types of assessment should be discussed in regard to their potential applications in the various eventual professional placements of students.

VII. The basic course in measurement and evaluation of persons covers various theories of assessment as well as methods of instrument or technique development. Application of the theories and methods to counseling and student personnel professions are emphasized.

VIII. The basic course in measurement and evaluation of persons covers all types of validities and reliabilities as well as appropriateness of instruments and techniques.

IX. The basic course in measurement and evaluation of persons covers ethical standards for using assessment instruments and techniques. Both individual and group approaches are discussed.
X. The basic course in measurement and evaluation of persons covers the counseling uses of assessment results. Both individual and group counseling approaches to assessment interpretation are used. Within the course, students are exposed to demonstrations of the effective counseling uses of assessment results, and students are provided opportunities for practice.

XI. The department (or institution) provides opportunity for advanced study beyond the basic course in measurement and evaluation of persons. Such opportunity might include advanced courses in theory of measurement, individual intelligence assessment, or projective assessment of personality.

XII. During the practicum experience, the students should select, administer, and interpret assessment instruments or techniques under the direct supervision of a qualified faculty member. The student should have at least two experiences of this nature during each practicum.

XII. During the internship experience, the student should select, administer, and interpret assessment instruments or techniques under the direct supervision of a qualified faculty member. The student should have at least five experiences of this nature during the internship. The student should also complete at least one full-written case report incorporating assessment data and results during the internship.

XV. The evaluation of the effectiveness of the student’s use of assessment instruments or techniques and their results is an integral component of the basis of the student’s overall evaluation for the practicum or internship experience. (Loesch, 1984, pp.154-156)

Considerable debate surrounded Loesch’s proposed standards. Shertzer (1984) reported that the 15 standards were justified and valuable to the profession. However, Shertzer questioned the details of various standards. Specifically, the number of practicum experiences, and the number of assessment instruments students should select, interpret and administer was questioned. Other researchers disagreed with these recommendations.

Stewart, (1984) wrote “This is a strong endorsement of Loesch’s call for more specific guidelines for preparation in measurement and evaluation for
counselors and other student personnel specialists” (p.166). Stewart justified his position by stating that by gaining more precise educational training, counselors can utilize test results more productively and become more integrated in the educational process. Other researchers’ views differed on various aspects of the standards.

Kandor (1984) basically agreed with the proposed standards, but had some concerns in implementation. Flexibility and creativity for counselor programs was viewed as critical in the implementation process. Kandor’s main issues were turmoil in higher education, standards not being educationally sound, and that conflicting student schedules may inhibit implementation as suggested by Loesch.

Meyers (1984) pointed out that Loesch “addressed a critical issue” (p.169). Myers emphasized, “Perhaps more than any other area, measurement is avoided, feared and consequently given less attention by counselor educators and trainees” (pp 171-172). Other researchers wrote opinions and urged professional organizations to act.

Prediger’s (1984) reaction paper to Loesch’s proposed standards was supportive and urged the Association for Measurement and Evaluation in Counseling and Development (AMECD) to take the next step in adopting standards for preparing counselors in measurement and evaluation. Prediger concluded that AMECD members “hold the greatest promise for influencing the nature of counselor preparation for measurement and evaluation” (p.177). Still other researchers wrote of their support for these standards, but also advocated caution.
Mehrens (1984) agreed that the standards were valid; however, he stated that the standards should “stress what competencies people need with respect to measurement and evaluation rather than to suggest where in the curriculum these competencies should be taught” (p.182). A final researcher commented.

Goldman’s (1984) reaction was that at the master’s level justifying these standards would be difficult and unjustified given that master level counselors use tests so little. However, at the doctoral level these standards would be necessary as doctoral level counselors would supervise master level counselors and oversee the testing program.

Overall, Loesch’s call for standards in counselors’ education programs addressed the issue of counselor training in measurement and evaluation and brought out the need to focus attention on improving training for pre-service school counselors in measurement and evaluation. These concerns spilled over to pre-service principals’ training.

Pre-Service Principals’ Assessment Training

Research involving pre-service principals’ assessment training surfaced during the 1980s. Researchers that investigated pre-service principals’ assessment training generally viewed the training as lacking. Bonebrake and Borgers’ (1984) study focused on 172 middle and junior high school counselors and 169 principals. Return rates were high for this survey of Kansas school personnel, 81% for counselors, and 92% for principals. School counselors and principals were more likely to be males than females, 93% and 62% respectively.
Bonebrake and Borgers’ (1984) instrument listed 15 counselor and principal tasks in random order. These 15 tasks were then divided into four subgroups, consulting, counseling, coordinating and problem solving. Student assessment, referral services, teacher consultant, and parent consultant comprised the consultation group. Group counseling, individual counseling, and classroom guidance comprised the counseling group. Research, functioning as a building principal, career education, other special programs, and evaluation of the guidance program comprised the coordination group. Finally, supervision of the lunchroom, scheduling, administering disciplinary actions, and teaching of non-guidance classes comprised the problem solving group.

Counselors and principals then indicated the degree of emphasis given to each task. The Mann-Whitney Test on ranks determined if differences existed between counselors and principals. Additionally, a repeated measure analysis of variance (ANOVA) was also used to determine if differences existed between the two groups on the amount of emphasis placed on the four subscales (Bonebrake & Borgers, 1984).

Results from the Mann-Whitney Test indicated that no differences existed in the sums of the ranks for the 15 tasks between counselors and principals. Principals ranked student assessment as the second most important task, while counselors ranked student assessment as the third most important task.

Results from the repeated measures ANOVA indicated no significant differences existed between attitudes towards the importance of consulting. These skills, which included student assessment, were viewed as equally important
between counselors and principals (Bonebrake & Borgers, 1984). Research conducted during the next decade on pre-service training for school personnel revealed similar results as research conducted in the 1980s.

**The 1990s**

During the decade of the 1990s, courses in assessment for pre-service school personnel programs increased moderately (Plake, Impara, & Fager, 1993; Stiggins, 1991b). However, Popham and Hambleton (1990) reported that because of pre-service school personnel’s deficiencies in understanding the fundamentals of measurement, many educators would fail in their assessment duties. Popham and Hambleton also stated most pre-service school personnel viewed tests as a method for assigning grades and little else, possible because most pre-service school personnel were never required to take an assessment course. O’Sullivan and Chalnick (1991) supported these statements by reporting that fewer than four out of ten teachers completed a course in assessment while certifying. Finally, due to the rapid advances in the testing field, Popham and Hambleton stated that pre-service school personnel who did have measurement courses found their knowledge out of date.

**Pre-Service Teachers’ Assessment Training**

O’Sullivan and Chalnick (1991) conducted a telephone survey to determine the extent to which teacher certification institutions across America required an educational measurement course for initial certification and to measure other components of assessment training for pre-service teachers. Department of Education certification specialists from the District of Columbia and all other states were surveyed to determine this information. Four major elements existed within the survey. They were the
measurement coursework required for initial certification, certification renewal requirements, appropriateness of measurement-related topics of continuing education credits, and the acceptability of continuing education credits for recertification. Results indicated that 15 states required specific measurement coursework for initial certification.

Summing up the findings of the study, O’Sullivan and Chalnick’s (1991) wrote:

The most optimistic interpretation of the information gathered indicates that fewer than a third of the 51 teacher certification agencies require specific course work or enumerate competencies in education tests and measurement for initial certification. This implies that the vast majority of teachers entering the profession are deficient in measurement training (p.18).

Thus, the telling statistic in this research study was that six out of every ten teachers currently in classrooms teaching had not taken a formal course in the area of classroom assessment. These findings imply that the majority of initial teachers entering classrooms across America are deficient in measurement training. These findings are similar to those of Lissitz, Schafer and Wright’s (1986) study.

Similar results were reported across the Northwest. Stiggins (1991a) reported that in a six state region—Alaska, Hawaii, Idaho, Montana, Oregon, and Washington—about one-half of the 27 programs offered assessment training, and that only six of these programs required assessment training in order to fulfill graduation requirements. Suggestions concerning assessment training followed.

Stiggins (1991a) purported six aspects of classroom assessment that future teachers need to master in order to become competent teachers. Classroom uses of
assessment, achievement targets in assessment terms, the qualities of sound assessment, assessment tools, interpersonal dimensions of classroom assessment, and feedback on assessment results, comprised the six aspects of assessment. In order to become competent in these areas, Stiggins suggested implementing two methods, in-service training for current teachers and a revamping of the assessment courses for pre-service teachers. Stiggins further suggested that both methods were necessary if educators are to accurately assess and manage assessment environments effectively.

The impact of this proposed training has two levels: the impact on a teacher’s ability to assess and the impact students receive in obtaining clearer achievement targets. Stiggins (1991a) suggested that teachers who modified their classroom assessment methodologies would enable students to achieve higher goals. Stiggins also suggested that obtaining clear achievement targets would help students enhance performance, involvement, enthusiasm, communication, and understanding of expectations (Stiggins, 1991a).

Stiggins (1991a) claimed that educators, insufficiently trained in the basics of assessment, were unable to ascertain whether achievement data were sound or unsound. One reason was cited for this claim. Stiggins contended that high quality classroom relevant training in assessment should be part of the professional training for all pre-service school personnel. Other researchers have also investigated the content of and importance of assessment training offered at colleges and universities.

Airasian (1991) reported that the topics emphasized in assessment courses fall into three areas. Roles of educational measurement, formal types of assessment, and the lack of usable examples of measurement techniques and procedures in most textbooks
comprise the three areas. Educational measurement topics focus on objectives, test
collection, item writing, reliability, validity, statistics, selecting, interpreting, selecting
standard tests, checklists, and rating scales. Formal types of assessment focus on the
summative information needs of teachers and students. The dearth of usable, realistic,
transferable measurement examples included in most textbooks is the third area. Abstract
examples seemed to be the norm, and their usefulness in teaching future teachers about
assessment techniques is limited (Airasian). Other concerns arose from this study.

Virtually no time was dedicated to training pre-service teachers on how to use
assessment information to plan instruction, judge the objectives provided in textbooks, or
critique instructional materials. The training and instruction that pre-service teachers
received from institutions tended to focus on writing objectives and familiarizing students
with traditional item formats (Airasian, 1991). Other researchers also investigated the
quality and quantity of assessment training pre-service teachers received.

Jett and Schafer’s (1993) descriptive study determined the amount, type and who
conducted the assessment training Maryland high school teachers received. A statewide
proportional random sample of 1,220 English, language arts, science, mathematics, and
social studies teachers produced 538 (44%) usable surveys.

Results from the 28-item survey were broken into the number of years a teacher
had taught and the amount of assessment training teachers had received in college. Ten
different categories encompassed the number of years a teacher had taught. Category one
included teachers with three or fewer years, the next eight categories all covered three
year spans (i.e., 4 to 6 years, 7 to 9 years…) up to 25 to 27 years of teaching experience.
The final category encompassed 28 years or more of teaching experience. Eight different
categories of assessment training existed. These were (a) assessment course, other course, and in-service, (b) assessment course and other course, (c) assessment course and in-service, (d) other course and in-service, (e) other course only, (f) in-service only, and (g) no training in classroom assessment from any of the three sources (Jett & Schafer, 1993).

Data revealed the following percentages in all assessment training. Eighteen percent of all respondents had no assessment training. Combining three categories, no training, only in service and other course only, accounted for 31% of the respondents. An additional 15% of the respondents had only one assessment course. Combined, respondents having another course and an in-service accounted for four percent. Respondents having an assessment course and an in-service training accounted for two percent. Those respondents having an assessment course and another course where assessment was included accounted for 29% of the study. Those having an assessment course, other course, and in-service training accounted for 19% of the respondents across all categories (Jett & Schafer, 1993). This lack of assessment training with respondents raised concerns.

Jett and Schafer (1993) stated that pre-service teachers should receive adequate training in classroom assessment that enables them to become skillful in assessment techniques. They further stated that this is relevant given that the amount of assessment training teachers have, does not seem to vary despite the number of years teaching experience. These researchers recommended that undergraduate educational programs be modified so that their programs provide pre-service teachers with the necessary skills to be successful on a state classroom certification test (Jett and Schafer, 1993).
Jett and Schafer (1993) concluded that pre-service teachers are generally untrained in assessment. Specifically, their finding revealed that one in five Maryland high school teachers have no training in classroom assessment. When the two categories of having one source of training in classroom assessment and having no training in classroom assessment are combined, 47% of all teachers responding to the survey were represented. Lack of assessment training was of concern to the researchers because competence in assessment skills has been identified as a necessary skill needed to succeed in teaching (Jett & Schafer). Professional organizations also voiced concern over the quality and quantity of assessment training.

Several professional organizations came together (American Federation of Teachers [AFT], National Council on Measurement in Education, [NCME], and The National Education Association [NEA]) in 1990 to address the concerns about the assessment competencies of teachers. These organizations outlined seven skills teachers should have in assessment. The skills included: (a) choosing appropriate methods for assessment, (b) developing appropriate assessment methods for instructional decisions, (c) administering, scoring, and interpreting assessment methods, (d) planning, teaching, developing curriculum and improving schools, (e) grading procedures, (f) communicating assessment results, and (g) recognizing unethical, illegal and inappropriate assessment methods (American Federation of Teachers, National Council on Measurement in Education, & National Education Association, 1990). Researchers collected data to determine teacher competence in these areas.

In order to measure the assessment competency of teachers, a 35-item test was administered to 555 randomly selected teachers to assess their knowledge in the seven
areas. Teachers performed best in the competency areas of administering, scoring and interpreting test results and did very poorly in the competency area of communicating tests results. On individual test items, teachers did well on recognition of unethical practices in standardized test administration, knowledge of acceptable test-taking, behavior for timed tests, administration on standardized tests, and explanation on the basis for a student’s grade to a guardian. Additionally, on five individual test items, less than 30% of the teachers answered correctly. Overall, the teachers averaged 66% correct in this measurement test (Plake, Impara & Fager, 1993).

Plake, Impara and Fager (1993), reported that 70% of 555 teachers surveyed reported that they had taken a class or had in-service training that addressed assessment. Unfortunately, 54% of teachers reported that their training was at least six years ago. In addition, teachers who reported this had an average score of 66% on a 35-item test assessing assessment knowledge. Research conducted on specific courses offered to pre-service teachers followed.

Wolmut (1994) investigated whether all 50 states and the District of Columbia (a) had specific assessment requirements for pre-service teachers, (b) listed a course called “test and measurements”, (c) listed a course in Educational Psychology, or (d) listed no assessment requirements. These four research questions tallied in 1983, 1988 and 1993 revealed the following findings. States that had specific requirements for pre-service teachers increased slightly from eight to nine to 12 in 1993. Test and Measurement courses decreased from three, to one, to zero in 1993. States listing a course in Educational Psychology also decreased from 11, to nine, to seven in 1993. States listing no assessment requirements for pre-service teachers remained mostly consistent being
reported as 30 to 32 to 30 in 1993. Thus, as of 1993, given these findings 60% of all states and the District of Columbia have no assessment requirements for pre-service teacher. As such additional research conducted found similar results in the number of states that require assessment training for pre-service teachers.

Stiggins (1999b) reported that pre-service teachers should gain seven specific competencies in classroom assessment. These competencies are (a) connecting assessments to clear purposes, (b) clarifying achievement expectations, (c) applying proper assessment methods, (d) developing quality assessment exercises and scoring criteria and sampling appropriately, (e) avoiding bias in assessment, (f) communicating effectively about student achievement, and (g) using assessment as an instructional intervention. However, these competencies may be difficult to achieve for all pre-service teachers because of the various state requirement associated with assessment training.

Stiggins (1999b) reported that only 25 of the 50 states had a required assessment course as part of the licensure for teachers. Thus, an insufficient number of teachers entering their field in this decade did not have the necessary training in measurement skills, and specifically in assessment skills to master these seven competencies. This lack of training was evident in teacher’s ability to fully assess a student’s knowledge and to adjust lesson plans (Stiggins, 1999b). Research data gathered from counselors studies revealed that they are confident in their statistical ability.

Pre-Service School Counselors’ Assessment Training

Elmore, Ekstrom, and Diamond (1993) sampled 672 American School Counselor Association (ASC) and Association for Measurement and Evaluation in Counseling and development (AMED) counselors. Relevant demographic information for the 33% of
counselors responding revealed that 75% of the counselors worked in educational settings and nine percent in private practice. Additionally, 62% had master’s degrees, 31% had doctorate degrees, and seven percent had specialist degrees. Because of the low response rate (33%), the authors caution that the finding may not have been representative of all counselors in the ASC and AMED.

The counselors reported that they were highly confident in administering tests (92%), interpreting tests (72%), using test results in counseling (69%), and administering tests (67%). Additionally, the counselors reported that they were highly confident in their ability to use test norms and standardized scores (72%), to use statistics such as mean, standard deviation, and correlation (67%), to use test reliability and validity information (59%), and to use error of measurement information (58%). However, half of the counselors did not regularly check to validate if the norming sample was appropriate for the population, half did not routinely modify administration procedures when persons with disabilities were tested, and half tended to rely on test scores alone instead of utilizing additional evidence when making recommendations (Elmore, Ekstrom, & Diamond, 1993).

Given these findings from their study, Elmore, Ekstrom and Diamond (1993) recommended that those in the measurement field develop both pre-service and in-service training for counselors. This training should facilitate good test use, which can help to reduce possible unfairness. Additional studies also reported that a lack of assessment training presents problems for school counselors and their clients.

Giordano, Schiebert, and Brotherton (1997) reported that lack of assessment training is problematic for school counselors. According to the Council for Accreditation
of Counseling and Related Education Programs (1988), counselors are required to take at least one graduate-level course pertaining to standardized assessment. These skills are viewed as essential. A majority of the respondents indicated meeting this requirement. Fewer respondents indicated taking an advanced course in testing and measurement. Even fewer respondents reported having a specialized testing course. Not surprisingly, many school counselors stated a need for more training in tests and assessment.

These school counselors reported that projective tests and other tests that require specialized training to administer and score, such as intelligence tests and clinical inventories, were identified as troublesome. Given these findings, Giordano, Schwiebert, and Brotherton (1997) concluded that most school counselors did not have the specialized training, even though they may administer, score, interpret, and present the finding of such tests to students, teachers, parents and administrators. Research on pre-service principals training reveals similar concerns.

Pre-Service Principals’ Assessment Training

The 1990s marked a focus on pre-service principal standards with assessment. Several researchers and professional organizations were involved in writing assessment standards and conducting research. This research helped focus assessment standards and competencies for pre-service principals.

Arter, Stiggins, Duke, and Sagor (1993) investigated the assessment competency needed for principals. A variety of tools must be used in order to fill this role, assessment being one such tool. However, in general, principals lack expertise in assessment. Arter, Stiggins, Duke, and Sagor continued by stating, “The problem is that the majority of principals simply are not trained in the basic principles of sound assessment, either in
administrator training and certification programs or in the training programs that prepared them to teach” (p.2). They further stated that in general, even when pre-service assessment courses were offered, such courses typically lacked an appropriate focus, or prospective. Administrators bypass such courses believing that not enrolling in them would not affect future employment opportunities. In general, principals generally lacked the skills necessary to effectively conduct policy level assessment proficiently. In addition, these researchers claimed that principals were unable to assist teachers in conducting classroom assessments proficiently (Arter, Stiggins, Duke, & Sagor).

Arter, Stiggins, Duke, and Sagor (1993) suggested three specific competencies principals should master to help solve this problem.

Assessment competency must be articulated for the principals. Relevant, helpful training programs must be developed for use in universities and inservice training contexts. And finally, resources must be allocated for a comprehensive local, state and national professional development program for principals (p.3).

Arter, Stiggins, Duke, and Sagor (1993) considered a standard of assessment competencies for principals as the framework for this article. These assessment competencies focused on the principal’s role as instructional leader, instructional manager, and communication facilitator. Each role overlaps the other. Instructional leader requires the principal to develop and implement a vision of assessment in all classrooms. The instructional manager role requires informed decisions to be made with assessment information within the decision making process. The facilitator of the communication
role requires timely and accurate delivery of clear assessment information to decision makers within and outside the school.

These competencies needed by principals when performing their job responsibilities are described below in greater detail. Knowledge of sound student assessment with school buildings is the first competency needed. This entails distinguishing between sound and unsound assessments, and properly interpreting results. Secondly, competency requires putting all assessments within the building together and making sure each piece fits together. This competency helps ensure that the teachers in the building work together. Being cognizant of appropriate and ethical use of assessment information is the final competency. This competency refers to protecting students and staff from misuse of assessment information (Arter, Stiggins, Duke, & Sagor, 1993).

The instructional leader role has its own list of competencies. Principals should know the features and importance of sound classroom, district, state and national assessment, and their impact on student achievement. In meeting this competency principals should promote these assessment competencies in order to influence student learning. Principals should also understand the importance of and work with staff in setting goals for the integration of assessment into instruction, thus assisting teachers in meeting goals of using sound assessment in the classroom. Principals should also understand the salience of and be able to evaluate a teacher’s assessment competencies during teacher evaluations. In doing this, the principal should be able to describe and understand essential assessment competencies for teachers, set performance goals criteria, gather sound information about teacher performance, and provide meaningful feedback to teachers. Principals should know the importance of presenting staff with
developmental experiences contributing to the use of sound assessments. Finally, principals should know how to use assessment information to improve instructional improvement at the building level, utilizing a written plan to accomplish this goal (Arter, Stiggins, Duke, & Sagor, 1993).

Competencies needed for the communicator role include having the competent principal who can appropriately use achievement information in an effective fashion to solve assessment problems. Effective communication with all interested parties about assessment information is the final competency that a principal should possess. Being able to understand assessment information adequately enough to thoroughly explain it to all interested parties in a meaningful manner is a key competency. Arter, Stiggins, Duke, and Sagor (1993) argue that when these competencies are “agreeable to all concerned, state licensing requirements must be revised to reflect the need for assessment competence” (p.7). Additional studies revealed a similar urgency in the role that principals play in school assessment.

Cizek (1995) reported that interest in assessment has surpassed many expectations. However, despite all these new developments, classrooms are still the central point of the assessment picture. “New forms of assessment, school reform initiatives, the growing number of mandated assessments, increased calls for assessment of non-cognitive outcomes, and a host of entities demanding accountability have converged on the classroom” (Cizek, 1995, p.247). Given all the different types and uses of assessment, the teachers must be cognizant of the different purposes of assessment, but principals play an even bigger role in sorting out the chaotic picture.
Cizek (1995) reported that administrators must have four characteristics in order to provide good assessment leadership. First, administrators must possess an intimate knowledge of what occurs in the classroom. Second, they must have a clear picture of what constitutes desirable educational outcomes given existing programs in their schools. Third, they must be knowledgeable about the purpose of any given assessment and the audiences to whom the results are to be presented. Finally, administrators must have some understanding of assessment fundamentals. These four characteristics define administrators’ role as written by Cizek. However, as Cizek and many other researchers (Schafer & Lissitz, 1987; Wise, Lukin & Roos, 1991) have pointed out, the lack of training in assessment contributed to administrators’ lack of assessment knowledge, and thus, lack of promoting assessment as a means of improving student achievement. This lack of assessment knowledge inhibits administrators in becoming assessment leaders within their schools (Cizek). Other researchers confirmed these statements.

Trevisan (1999) investigated student assessment knowledge and skill requirements for administrators in all 50 states and the District of Columbia. Eighteen states reported having such requirement. Specifically, 14 states have these assessment requirements for elementary principals, and 13 states have such requirements for secondary principals. Trevisan wrote “The ramification of the lack of assessment requirement for administrators is disturbing. Administrators have the responsibility of supervising teachers” (p.6). This statement adequately sums up the research conducted on principals’ assessment training throughout the 1990s. Additional research conducted during the early 2000s brings forth more concerns for added training for pre-service
principals, and for states agencies to come to the forefront of this movement in hopes of influencing the assessment training for pre-service school personnel.

**The early 2000s**

Studies conducted in the last five years have focused on the advances made in assessment training as well as the difficulty of moving the assessment movement forward. Changes in assessment techniques characterized as an assessment revolution by some authors are reported in the literature.

**Pre-Service Teachers’ Assessment Training**

Cizek’s (2000) study reported that advancements made in assessment have included students taking tests that have them reflecting on and writing about their analytical thinking, mathematical, scientific, and problem-solving abilities, instead of simply taking tests that consist of computation recall and selected response items. However, Cizek sees three main areas in the assessment movement that need attention: assigning grades, grade inflation, and communicating about student achievement. Cizek further postulated that the most resistant form of assessment problems lies in the preparation of teachers and administrators in the fundamentals of educational assessment training. Cizek reported that although progress has been made over the last two decades, numerous studies of teacher preparation programs continue to indicate that discrepancies still exist in the training of undergraduates and graduates in educational assessment. Additionally he further reports that there is often no competence level in assessment for licensure to teach.

Cizek (2000) further posits that if teachers and administrators knew five principles, the route to student achievement would improve. The five principles are: (a)
the importance of reliable and valid information about student performance; (b) the need to clearly identify the purpose and intended uses of assessments; (c) distinguishing between instruction and evaluation; (d) acquisition of certain technical skills; and, (e) understanding the place of norm and criterion or standards referenced measures.

In keeping with this trend, Shepard (2001) reported that tests prepared by teachers typically emphasize rote recall. Further, little evidence of validity and reliability is required of K-12 teacher constructed tests (Stiggins, 2001). Ideally, all assessment should help prepare students to illuminate and enhance the learning process (Shepard, 2001). These competencies discussed for teachers are similar to the assessment competencies needed for school counselors.

*Pre-Service School Counselors’ Assessment Training*

Tymofievich and Leroux (2000) investigated three competencies counselors must use for adult inventories. Good test-use practice, defined as having skill in test administration, interpretation, and selection was one such competency. This competency becomes important given the tendency for counselors to use inventories. However, a lack of training in tests and measurements may impede student or client progress (Tymofievich & Leroux, 2000). Lambert (1991) supported this argument by previously stating that minimal exposure in measurement provided insufficient knowledge for selecting and using tests incorrectly. Tymofievich and Leroux also stated that good test-use practice might help counselors effectively serve minority populations. Further, proper training in test and measurement should help counselors better understand the elements of test reliability, validity, reading and interpreting test manuals. Without this training
“counselor’s lack of training in tests and measurement may set the stage for unwitting adverse social consequences, or consequential validity for clientele” (p.51).

Tymofievich and Leroux’s (2000) recommendation for such concerns was that counselors be required to take two test and measurement courses while attending universities and after graduating increase in-service training two classes at a minimum. Additional studies investigated training requirements for counselors.

Perusse, Goodnough and Noel’s (2001) national survey of school counselors investigated institutional preparation training. In the course content section of the survey, 187 institutions responded. A large percentage of these institutions (98.9%) required a testing, assessment and/or appraisal course. However, a smaller number of institutions 37 (19.8%) reported that the course was required and designed specifically for pre-service school counselors. The study confirms past studies (Schaffer & Lissitz, 1987) findings and provides a better understanding of the differences among counselor programs by indicating that most testing, assessment and appraisal courses are not specifically designed for counseling students. Other researcher specifically investigated pre-service school counselor test theory and statistical training.

Thorn and Mulvenon’s (2002) study investigated the basic knowledge of 236 elementary school counselors in elements of test theory and statistics in educational assessment. The majority of the counselors (90%) reported that they had studied 10 of the 14 common topics in statistics. Further, 70% of the respondents reported that they had studied all 14 topics. These topics included (a) variability, (b) standard deviation, (c) reliability, (d) interpretation of standard scores, (e) normal distribution, (f) types of measurement scales, (g) measures of central tendency, (h) internal and external validity,
(i) interpretation of norms, (j) standardized test interpretation, (k) standardized test selection, (l) achievement versus aptitude testing, (m) theory of test development, and (n) norm-referenced and criterion referenced tests.

The percentage of counselors that reported studying each topic ranged from 97 to 71 percent. Ninety-seven percent of counselors reported having studied both interpretation of standard scores and norm-referenced and criterion-referenced tests. Seventy-one percent of counselors reported having studied theory of test development. Avenues of instruction included both university studies and in-service training (Thorn & Mulvenon, 2002). Educational backgrounds varied among counselors.

Most counselors (91%) reported having master’s degrees, while 79% reported having a master’s degree in guidance and counseling. Twelve percent reported having a master’s degree in another field. Seven percent reported that they were presently completing a master’s degree. One percent of the respondents reported having a doctoral degree. Eighty six percent of the respondents obtained their master’s degrees from a southern university. These advanced degrees may help explain why the respondents were familiar with the 91% of the 14 most common statistical topics. Further, this study revealed that a specific southern university had been exposing school counselors to statistics that align with national standards for counselors (Thorn & Mulvenon, 2002). A second reason for these high percentages is the school counselor competencies utilized in pres-service training where most counselors earned their degrees.

The American School Counselor Association (ASCA) and the Association of Assessment in Counseling (AAC) have identified nine competencies. The competencies are as follows:
1. School counselors are skilled in choosing assessment strategies.

2. School counselors can identify access and evaluate the most commonly used assessment instruments.

3. School counselors are skilled in the techniques of administration and methods of scoring assessment instruments.

4. School counselors are skilled in interpreting and reporting assessment results.

5. School counselors are skilled in using assessment results in decision-making.

6. School counselors are skilled in producing, interpreting and presenting statistical information about assessment results.

7. School counselors are skilled in conducting and interpreting evaluations of school counseling programs and counseling-related interventions.

8. School counselors are skilled in adapting and using questionnaires, surveys, and other assessments to meet local needs.


Thorn and Mulvenon’s (2002) study further investigated the activities that counselors performed for positively affecting the atmosphere of standardized testing. The activities the counselors identified as part of their duties related to the testing program suggested a lack of understanding of testing. Readily identified items by the counselors did not include proactive tasks. Rather, Thorn and Mulvenon’s study suggested that the tasks identified by the counselors lacked incorporating standardized testing data into helping students achieve academically by addressing the perceived psychological impact
of standardized testing on students. Another researcher discussed the benefits of adopting existing assessment standards.

Trevisan (2002) reported that student success and sound assessment training are connected. He further argued that state mandates influence student achievement. Requiring states to mandate that school personnel demonstrate competence in assessment for licensure promotes the assessment philosophy that effective pre-service training will enhance student achievement. Three benefits come from this thought process. Adopting established comprehensive assessment standards saves states that lack such standards the time and money of developing their own standards. These established standards provide a baseline for assessment competency. Finally, making pre-service assessment training a requirement for school personnel could save training budgets for states conducting professional development in assessment (Trevisan). If NCATE institutions accepted these premises, then pre-service principals would be regularly exposed to important concepts.

**Pre-Service Principals’ Assessment Training**

McMillan (2000) reported that assessment training for administrators should have several components. First, having an understanding of and confidence in one’s own professional judgment is necessary. Knowing the importance between evaluation and measurement evidence, and the influence that assessment can have on student learning and motivation is essential for principals. Understanding that decisions about assessment are best made with complete knowledge of the influencing factors is important for principals to know, as well as the influence that assessment has on student learning, motivation and enhancing instruction. In addition, technical information was reported as essential for principals to master. Having a working knowledge and understanding of
terms like standard error of measurement, confidence levels, standard setting, and the different types of validity and reliability are important for principals to master in order to help increase student achievement.

Incorporating technology into the fundamental assessment issues of assessment to enhance student learning is also important for principals to know and be able to do in their supervisory roles, thereby enhancing student learning. Ethical and fair assessment and utilizing multiple assessment methods to be as efficient and effective as possible were all considered important for principals to master (McMillan, 2000). Reeves (2001) put these components together and concludes, “one of the most powerful leadership exercises a principal can conduct is a review of teacher-created assessments accompanied by a review of actual student work” (p.10). However, other researchers again state that principals are not taught the skills necessary to perform such tasks.

Farkas, Johnson, Duffett, Foleno, and Foley (2001) reported 69% of principals responded that school leadership programs were not focused on what it takes to successfully operate a school. Additionally, over 85% of those same principals reported that overhauling college preparation programs was needed. Lashway (2003) agreed and concludes that principal preparation programs are not highly effective. Other researchers suggest specific elements of assessment training that principals need in order to become effective administrators.

O’Connor (2001) noted the principals’ role in report card grading was one such element of assessment training needed in pre-service training. Specifically, having a good understanding of the quality assessment principles needed to ensure sound grading practices warranted specific attention. Principals should have an understanding of
specific guidelines in order to help teachers become effective with assigning grades. Relating grading procedures to the intended learning targets, limiting the valued attributes included in grades, sound sampling of student achievement, knowledge of the importance of updating student achievement when needed, knowledge of statistical concepts related to grading, using criterion-referenced standards to measure student progress, adherence to the quality standards of assessment, and communicating with students about expectations are the guidelines principals should have in their supervisory role. Consistently utilizing these guidelines with teachers provides a solid framework that promotes meaningful grading practices within schools, and encourages student success (O’Connor). In addition, Lashway (2003) suggested that states hold considerable influence through accreditation and licensure authority to implement such standards. However, the states’ role in implementing such standards has been sporadic (Trevisan, 2002). Thus, where state mandates do not exist, these decisions are made by colleges and universities.

McCarthy (2002) noted the consistent concern directed toward school leaders and university pre-service programs over the last 25 years in how universities prepare school administrators. McCarthy promoted the solution of requiring colleges and universities preparation programs to provide evidence that students have experiences substantiating mastery of state standards for school administrators. This performance based model among other things, includes aligning courses with professional standards. Substantial support for Interstate School Leaders Consortium (ISLLC) standards which include assessment components are viewed as powerful. Determining if the standards are met and put to use is another issue. McCarthy states “investigations to date of the relationship between leadership preparation and administrative success have documented little impact
of university preparation programs” (p.211). Concluding, McCarthy states “the real issue, of course, is whether the standards will actually have an impact on school practices and ultimately on student outcomes (p.213). Given these issues attention has been focused on accountability imposed by states on pre-service assessment training for principals (Trevisan, 2002).

Pre-Service Teachers’ Assessment Training: A Summary

Much research has been conducted over the past seven decades on assessment training for pre-service teachers. Scates’ (1943) initial study strongly advised the educational community of the importance of having each assessment practice reach its potential. Research then focused on whether assessment training was required in teacher education programs. Noll (1955) reported that (n=5) 10% of the states and nine universities representing 14% of the universities sampled required an assessment course. Given the importance of assessment training, these percentages were rather small. Eleven years later, Goslin (1967) reported that 25% of the 1,450 teachers responding to a survey indicated that they had taken a measurement class. Although the percentages continued to be small, percentages slightly increased over time. Roeder (1972) then surveyed 33 states and reported that 58% of the institutions responding did not require an assessment course. Although the percentage of institutions that require an assessment course for teachers remained at less than 50%, percentages continued to increase slightly. Additional research (Gullickson & Hopkins, 1987; O’Sullivan & Chalnick, 1991; Schafer & Lissitz, 1987; Stiggins, 1991a) found similar results for teacher training in assessment.

The importance of these finding is highlighted by Cizek, Fitzgerald, and Rachor’s (1996) research findings. Seventy-five percent of the 60 middle and high school teachers
surveyed indicated that they developed their own assessments. Shepard (2000) added to these findings in reporting that tests made by teachers tended to emphasize rote recall. Ultimately however, Sheppard stated that “classroom assessment should be used to examine and improve teaching practices” (p. 12). Sheppard emphasized this point by stating that “our goal should be to find ways to fend off negative effects of externally imposed tests and to develop instead classroom assessments practices that can be trusted to help students take the next steps in learning” (p. 12). Given these findings it seems timely to investigate the current assessment training requirements for pre-service teachers across the states given the standard driven educational system.

*Pre-Service School Counselors’ Assessment Training: A Summary*

There has been much debate over pre-service and in-service counselor training in assessment coursework as well (Goldman, 1983; Loesch, 1983; Mehrens, 1984; Stewart, 1984). School counselors are much more likely than teachers and principals to have coursework in measurement. Schafer and Lissitz (1987) reported that 98% of the training programs surveyed required one or more measurement courses. However, Lambert, (1991) reported that the courses offered to counselors in educational assessment insufficiently prepare counselors to be effective. Whittaker (1993) concurred with these findings and stated that counselors’ confidence in validity and reliability of test scores were relatively low. At about the same time, Prediger (1994) reported that although counselors tend to have more courses in measurement than teachers, these courses may be less rigorous than they should be, given the importance of measurement. Giordano, Schwiebert and Brotherton (1997) reported that school counselors indicated a need for supplemental training in tests and assessment beyond their master’s programs. These
findings should not come as a surprise even though standards released by various counselor associations have evaluation and assessment expectations for counselors. Although Perusse, Goodnough, and Noel, (2001) have reported similar findings regarding counselor training in assessment as Schafer and Lissitz (1987), a large scale survey of NCATE institutions that certify pre-service school counselors is timely given the role that counselors have in the school system.

*Pre-Service School Principals’ Assessment Training: A Summary*

One of the roles a principal has is to provide leadership to school personnel in the improvement and development of assessment skills. However, this review of the literature has established that providing this leadership is not an area that many principals are comfortable performing (Hodgkinson, 1982). Bonebraker and Borgers (1984) study revealed that both principals and counselors ranked assessment duties in the top two and three duties performed respectively. Arter, Stiggins, Duke and Sagor (1993) reported that in general principals lacked expertise in assessment. Cizek (1995) reported that principals play an even larger role than teachers in the assessment arena. Thus, given their supervisory and administrative roles, principals should be proficient in assessment.

*Professional Assessment Competencies*

Several professional organizations have established competencies for school personnel. These standards outline specific assessment tasks for teachers, school counselors and principals. Within each of the three professions specific assessment competencies exist. Each group’s standards are discussed below.

Two organizations have developed assessment competencies for pre-service teachers. The combined standards of the American Federation of Teachers (AFT),
National Council of Measurement in Education (NCME), and the National Education Association (NEA) have written assessment standards for pre-service teachers. Also, the Interstate New Teacher Assessment and Support Consortium (INTASC) standards established by the Council of Chief State School Officers (CCSSO) have written standards that address assessment competencies for pre-service teachers. Finally, NCATE has aligned its standards with INTASC standards.

The combined standards of the AFT, NCME and the NEA were completed in 1990. These seven standards were developed to guide the pre-service preparation of teachers, as well as the accreditation process of preparation programs for school personnel. Standard one states that teachers should be skilled in choosing assessment methods appropriate for instructional decisions. Standard two states that teachers should be skilled in developing assessment methods appropriate for instructional decisions. Standard three states that teachers should be skilled in administering, scoring and interpreting the results of both externally produced and teacher-produced assessment methods. Standard four states that teachers should be skilled in using assessment results when making decisions about individual students, planning teaching, developing curriculum and school improvement. Standard five states that teachers should be skilled in developing valid pupil grading procedures which use pupil assessments. Standard six states that teachers should be skilled in communicating assessment results to students, parents, other lay audiences, and other educators. Standard seven states that teachers should be skilled in recognizing unethical, illegal, and otherwise inappropriate assessment methods and uses of assessment information. (American Federation of Teachers, National Council on Measurement in Education, and National Education
Association, 1990). These seven standards are similar to the INTASC and CCSSO principles.

The INTASC and CCSSO developed model standards for pre-service teachers in 1992. Seventeen state education agencies were involved in the process. NCATE has aligned itself with these standards. INTASC developed ten principles that addressed expectations of pre-service teachers.

Principle one states that teachers understand the central concepts, tools of inquiry and, structures of the discipline(s) he or she teaches and can create learning experiences that make these aspects of subject matter meaningful for students. Principle two states that teachers understand how children learn and develop, and can provide learning opportunities that support their intellectual, social and personal development. Principle three states, teachers understand how students differ in their approaches to learning and create instructional opportunities that are adapted to diverse learners. Principle four states that teachers understand and use a variety of instructional strategies to encourage students’ development of critical thinking, problem solving, and performance skills. Principle five states that teachers utilize an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation. Principle six states that teachers use knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom. Principle seven states that teachers plan instruction based upon knowledge of subject matter, students, the community, and curriculum goals. Principle eight states that teachers understand and use formal and informal assessment strategies to evaluate and
ensure the continuous intellectual, social and physical development of the learner.

Principle nine states that teachers are reflective practitioners who continually evaluate the effects of their choices and actions on others (students, parents, and other professionals in the learning community) and who actively seek out opportunities to grow professionally. Principle ten states that teachers foster relationships with school colleagues, parents, and agencies in the larger community to support students’ learning and well-being. (Interstate New Teachers Assessment and Support Consortium, 1992).

Principle eight specifically addresses the assessment component for pre-service teachers. Organized into knowledge, disposition and performance targets, each area has its own indicators. The knowledge target specifically addresses teachers’ understanding the uses, characteristics, advantages and limitations of the different forms of assessment. Selecting, constructing and use of assessment instruments appropriate to student outcomes and understanding measurement theory and related issues are also addressed within the indicators. Dispositional targets address as indicators teachers valuing formative and summative assessment, and accurately and systematically using assessment information in promoting student achievement. Performance targets are addressed in a variety of indicators, such as teachers using an array of assessment techniques to enhance student achievement, involving students, parents, and other teachers in the process, monitoring their own teaching styles in hopes of increasing student achievement, and effectively reporting student assessment results to a variety of audiences (Interstate New Teachers Assessment and Support Consortium, 1992). Standards have been developed for school counselors as well.
Three organizations have developed assessment competencies for pre-service school counselors. The combined standards of the Association for Assessment in Counseling (AAC), the American School Counselor Association (ASCA), and the National Council on Measurement in Education (NCME) have written assessment standards for school counselors. Standards developed by the Council for Accreditation of Counseling and Related Educational Programs standards (CACREP) have been written for school counselors. Finally, the Association for Assessment in Counseling and Education (AACE) has developed school counselor assessment standards.

The American Educational Research Association (AERA), the American Psychological Association (APA), and the National Council on Measurement in Education (NCME) jointly developed standards for school counselors. These competencies are embedded within three major parts, test construction, evaluation and documentation; fairness in testing; and testing applications.

Part one, test construction, evaluation and documentation, lists six specific competencies for school counselors. The first specific competency is validity. Reliability and errors of measurement form the second competency. Test development and revision are the elements within the third competency, while scales, norms, and score comparability are the elements within the fourth competency. The fifth competency includes test administration, scoring, and reporting. Finally, supporting documentation for tests, forms the final competency within part one.

Part two, fairness in testing, lists four specific areas of competency. Fairness in testing and test use, rights and responsibilities of test users, testing individuals of diverse
linguistic backgrounds, and testing individuals with disabilities make up the four specific competencies within part two for school counselors.

Part three, testing applications, lists five specific competencies areas for school counselors. The first competency is the responsibilities of test users. Psychological testing and assessment, and educational testing and assessment form the next two competencies for school counselors. Finally, testing in employment and credentialing, and testing in program evaluation and public policy form the final two competency areas.

The 2001 CACREP standards are outlines in eight common core areas required for competency for school counselors. These areas are professional identity, social and cultural diversity, human growth and development, career development, helping relationships, assessment, and research and program evaluation. Area seven assessment competencies have nine specific skills for school counselors.

The first specific skill is historical perspectives concerning the nature and meaning of assessment. Basic concepts of standardized and non-standardized testing and other assessment techniques including norm-referenced and criterion referenced assessment, environmental, and performance assessment, individual, and group test and inventory methods, behavioral observations, and computer-managed and computer assisted methods are included in the second set of specific skills. Statistical concepts to include scales of measurement, indices of variability, measures of central tendency, shapes and types of distribution, and correlations form the third set of specific skills. The fourth and fifth sets of specific skills include reliability and validity. The sixth set of skills include age, gender, sexual orientation, ethnicity, language, disability, culture, spirituality, and other factors related to the evaluation and assessment of individuals,
groups, and specific populations. Strategies for selecting, administering, and interpreting assessment and evaluation instruments and techniques in counseling form the seventh set of specific skills. An understanding of general principles and methods of case conceptualization, assessment and/or diagnoses of mental and emotional status form the next set of specific skills. Legal and ethical considerations form the final set of specific skills for school counselors.

The Competencies in Assessment and Evaluation for School Counselors (1998) developed by the AACE outlines nine competencies for school counselors. Specific statements within each competency outline detailed knowledge and skills counselors should demonstrate. Competency one states school counselors are skilled in choosing assessment strategies. Competency two states school counselors can identify, access, and evaluate the most commonly used assessment instrument. Competency three states school counselors are skilled in the techniques of administration and methods of scoring assessment instruments. Competency four states school counselors are skilled in interpreting and reporting assessment results. Competency five states school counselors are skilled in using assessment results in decision making. Competency six states school counselors are skilled in producing, interpreting and presenting statistical information about assessment results. Competency seven states school counselors are skilled in conducting and interpreting evaluations of school counseling programs and counseling-related interventions. Competency eight states school counselors are skilled in adapting and using questionnaires, surveys, and other assessments to meet local needs. Competency nine states school counselors know how to engage in professionally
responsible assessment and evaluation practices. Standards for principals that include an assessment component have also been written.

Three organizations have developed assessment competencies for pre-service principals. The combined standards of the American Association of School Administrators (AASA), the National Association of Elementary School Principals (NAESP), the National Association of Secondary Principals (NASSP), and the National Council on Measurement in Education (NCME) have written standards for principals (Impara, 1993). Standards developed by the Interstate School Leaders Licensure Consortium (ISLLC) have been written for principals as well (Interstate School Leaders Licensure Consortium Standards, 1994). Finally, the National Policy Board for Educational Administration (NPBEA) standards contains assessment competencies for principals (Thompson, 1993).

The combined standards of AASA, NAESP, NASSP, and NCME for school administrators outline 12 competencies organized in three bands, assisting teachers, providing leadership, and using assessment in making decisions and in communicating assessment results. Two competencies associated with assisting teachers exist for principals. First, they should have a working level of competence in the Standards for Teacher Competence in Educational Assessment of Students. Second, principals should know the appropriate and useful mechanics of constructing various assessments (Impara, 1993). Three competencies associated with providing leadership in developing and implementing assessment policies exist for principals. First, they should be able to understand and be able to apply basic measurement principles to assessments conducted in school settings. Second, principals should be able to understand the purpose (e.g.,
description, diagnosis, and placement) of different kinds of assessments (e.g., achievement, aptitude, and attitude) and the appropriate assessment strategies to obtain the assessment data needed for the intended purpose. Finally, principals should be able to understand the need for clear and consistent building and district level policies on student assessment (Impara, 1993).

Seven competencies associated with making decisions and communicating assessment results exist for principals. First, they should be able to understand and express technical assessment concepts and terminology to others in non-technical terms but correctly. Second, principals should be able to understand and follow ethical and technical guidelines for assessment. Third, principals should be able to reconcile conflicting assessment results appropriately. Fourth, they should be able to recognize the importance, appropriateness, and complexity of interpreting assessment results in light of students’ linguistic and cultural backgrounds and other out-of-school factors in light of making accommodations for individual differences, including disabilities, to help ensure the validity of assessment results for all students. Fifth, principals should be able to ensure the assessment and information technology are employed appropriately to conduct student assessment. Sixth, they should be able to use available technology appropriately to integrate assessment results and other student data to facilitate students’ learning, instruction, and performance. Finally, principals should be able to judge the quality of an assessment strategy or program used for decision making within their jurisdiction (Impara, 1993).

ISLLC has developed six leadership standards. Standard one notes a school administrator is an educational leader who promotes the success of all students by
facilitating the development, articulation, implementation, and stewardship of a vision of learning that is shared and supported by the school community. Standard two states a school administrator is an educational leader who promotes the success of all students by advocating, nurturing, and sustaining a school culture and instructional program conducive to student learning and staff professional growth. Standard three states a school administrator is an educational leader who promotes the success of all students by ensuring management of the organization, operations, and resources for a safe, efficient and effective learning environment. Standard four states a school administrator is an educational leader who promotes the success of all students by collaborating with families and community members, responding to diverse community interests and needs and mobilizing community resources. Standard five states a school administrator is an educational leader who promotes the success of all students by acting with integrity, fairness and in an ethical manner. Standard six states a school administrator is an educational leader who promotes the success of all students by understanding, responding to, and influencing the larger political, social, economic, legal, and cultural context (Impara, 1993).

Standards are organized with knowledge, disposition and performance indicators for administrators to meet. Elements of assessment competencies are woven throughout the six standards. Some examples of assessment competencies for principals include strategic planning processes that focus on student learning, data-based research strategies to increase student learning, collecting, organization, and analysis of a variety of information to assess progress towards a district’s vision, mission and goals, collecting,
interpreting, and analyzing school data, and promoting an environment to improve student achievement (Impara, 1993).

The National Policy Board for Educational Administration (NPBEA) has identified 21 domains of competence for school principals. Domain 12 measurement and evaluation sets assessment competencies for principals in three broad bands, instructional leaders, instructional managers, and communication facilitators. Some competencies are specific to a band. Some competencies overlap bands (Thompson, 1993).

Three assessment competencies that overlap all three bands for the principal include the following. Principals should be able to differentiate between sound and unsound assessments, and thus should be able to plan, implement or interpret a sound program. Competency two states principals should have knowledge of how all the assessments within a school fit together. Competency three states principals have knowledge of unethical and inappropriate use of assessment information and ways to protect students and staff from misuse (Thompson, 1993).

Five competencies specific to the role of an instructional leader exist. Competency four states principals have knowledge of assessment policies and regulations that contribute to the development and use of sound assessments at all levels. Competency five states principals have knowledge of setting goals with staff for integrating assessment into instruction and assisting teachers in achieving these goals. Competency six states principals have knowledge of evaluating teachers’ classroom assessment competencies and building such evaluations into the supervision process. Competency seven states principals have knowledge of planning and presenting to staff developmental experiences that contribute to the development and use of sound
assessment at all levels of decision making. Competency eight states principals have knowledge of using assessment results for building-level instructional improvement (Thompson, 1993).

Two competencies specific to the role of instructional managers exist. Competency nine states principals have knowledge of accurately analyzing and interpreting building level assessment information. Competency ten states principals have knowledge of acting on assessment information (Thompson, 1993).

Two competencies specific to the role of communications exist. Competency 11 states principals have knowledge of creating conditions for the appropriate use of achievement information. Competency 12 states principals have knowledge of communicating effectively with school community members about assessment results and their relationship to instruction (Thompson, 1993).

Research Questions

School personnel must be assessment literate to achieve their professional responsibilities (Trevisan, 1996). In order to determine if pre-service school personnel are receiving the assessment training proposed by researchers and professional organizations while earning teaching, school counselor and principal certification NCATE institutions will be surveyed to answer the following research questions.

1. Are assessment courses for pre-service school personnel offered by NCATE institutions?

2. If assessment courses are offered by NCATE institutions are they required for pre-service school personnel?
3. Are assessment courses for pre-service school personnel offered by NCATE institutions aligned with existing standards?
CHAPTER THREE

METHODOLOGY

The following sections will outline the methodology and the procedures used to answer the research questions in this study. The sections are instrument development, participants, procedures, and data analysis.

Instrument Development

Three online surveys were developed using CTLSilhouette. CTLSilhouette, an online computerized survey tool, was developed and is supported by the Center for Teaching, Learning and Technology at Washington State University. Each survey, pre-service teacher (Appendix A), pre-service school counselor (Appendix B), and pre-service principal (Appendix C) was designed using the previously discussed assessment standards. Demographic questions were included within each survey to determine experience levels and educational backgrounds of instructors. Surveys were then approved by committee members. The Institutional Review Board then conducted and approved the Human Subjects Protocol. Surveys were pilot tested in the College of Education at Washington State University. Modifications were made as needed.

Participants

Five hundred and thirty-five National Council for Accreditation of Teacher Education (NCATE) colleges and universities representing 49 states and the District of Columbia were sent online pre-service teacher surveys. Arizona has no colleges or universities that are affiliated with NCATE. Institutions that did not respond to the first request were sent second, third and fourth requests. Twenty-six institutions declined to participate in the study. Forty-three institutions had email addresses that failed. Thus 466
institutions received pre-service teacher surveys. One hundred and fifty-five institutions returned usable pre-service teacher surveys from 46 states and the District of Columbia.

Four hundred and forty-two NCATE colleges and universities representing 49 states and the District of Columbia were sent on line pre-service school counselor and principal surveys. Again Arizona has no colleges or universities affiliation with NCATE. Twenty-six institutions declined to participate, and 43 institutions had email addresses that failed. Thus, 373 institutions received pre-service school counselor and principal surveys. Seventy-one institutions returned usable pre-service school counselor surveys from 33 states. Sixty-six institutions returned usable pre-service principal surveys from 30 states.

**Procedures**

Email addresses of department chairs, or college deans were obtained from websites at each institution. Institutions were then emailed a cover letter/consent form (Appendix D) and asked to complete the on line surveys. Three follow up emails were sent to each non-responding institution requesting that the surveys be completed. Finally, requests to complete only the pre-service school counselor survey, or only the pre-service principal survey were emailed to non responding institutions.

**Data Analysis**

Data collected via on line surveys were summarized in CTLSilhouette where applicable. SPSS version 13.0 was utilized for analyzing the remaining data. Descriptive analysis consists of percentages.
CHAPTER FOUR

RESULTS AND DISCUSSION

Forty-nine states and the District of Columbia have colleges and universities that are affiliated with National Council of Accreditation of Teacher Education (NCATE). One hundred and fifty-five institutions (33%) representing 46 states and the District of Columbia responded to the pre-service teacher survey. Seventy-one institutions (19%) representing 33 states responded to the pre-service school counselor survey. Sixty-six institutions (18%) representing 30 states responded to the pre-service principal survey. Table 1 summarizes the participation rates by number of participating states and institutions and their corresponding percentages.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Participation Rates by States &amp; Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-Service</td>
</tr>
<tr>
<td>Teachers</td>
<td>n</td>
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<tr>
<td>School Counselors</td>
<td>n</td>
</tr>
<tr>
<td>Principals</td>
<td>n</td>
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</tbody>
</table>

*Pre-Service Teachers*

One hundred and fifty-five NCATE colleges and universities from 46 states and the District of Columbia (94%) responded to the on line pre-service teachers survey. Colleges and universities from three states, Alaska, New Hampshire and Vermont (8%) did not respond. Further analyses utilized 46 states and the District of Columbia (N=47) as 100% of states responding. All responding institutions reported having pre-service teacher’s degree.
Thirty-four institutions representing 19 states (40%) reported that an assessment course was state mandated. Forty-nine institutions representing 23 states (49%) reported an assessment course was institutionally mandated. Seventy-one institutions representing 36 (77%) reported that no assessment course was offered, but assessment information was embedded within other required course work. Inconsistency within various institutions across states existed on whether assessment courses were state, or institutionally mandated, implying that states had different requirement for different programs.

One hundred and nineteen institutions representing 26 states (55%) reported different responses for this question, implying that these states have different requirements for different programs. Thus, institutions within these states were moved to the most common response option column or the lowest response option for analyses if equal numbers of response were tallied. Consequently, four states (9%) consistently reported across institutions that an assessment course was a state requirement, and 15 states (32%) consistently reported across institutions that an assessment course was an institutional requirement. Thus, 83 institutions representing 19 states (40%) required an assessment course either by state or institutional mandate. Seventy-one institutions representing 28 states (59%) consistently reported across institutions that assessment information was embedded within other required coursework. Table 2 lists the pre-service teachers’ assessment course requirement by state.
<table>
<thead>
<tr>
<th>State</th>
<th>Institutional Requirement N=4</th>
<th>Assessment Requirement N=15</th>
<th>Embedded Requirement N=28</th>
</tr>
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<tbody>
<tr>
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<td>California</td>
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<td>California</td>
<td>Colorado</td>
<td>Florida</td>
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<td>Illinois</td>
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<td>New Mexico</td>
<td>Massachusetts</td>
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<td>Missouri</td>
<td>Massachusetts</td>
<td>Michigan</td>
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<td>Massachusetts</td>
<td>Ohio</td>
<td>Michigan</td>
<td>Minnesota</td>
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<td>Montana</td>
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<td>Wyoming</td>
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<td></td>
<td>North Carolina</td>
<td>North Carolina</td>
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<td>Oklahoma</td>
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<td>Oklahoma</td>
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<td>Oregon</td>
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<tr>
<td>Oregon</td>
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<td>Rhode Island</td>
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<td>Virginia</td>
<td>Virginia</td>
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<tr>
<td>Virginia</td>
<td></td>
<td>Washington D.C.</td>
<td>Washington D.C.</td>
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<tr>
<td>Washington D.C.</td>
<td></td>
<td>West Virginia</td>
<td>West Virginia</td>
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<tr>
<td>West Virginia</td>
<td></td>
<td>Wisconsin</td>
<td>Wisconsin</td>
</tr>
</tbody>
</table>

One hundred and fifty-one colleges and universities reported having semester clock hours. Three colleges’ quarter hours were transferred to semester hours (L. Hobbs, personal communications, May 11, 2005) for analyses. When a state or institutionally mandated assessment course existed, the number of mandatory credits ranged from one to nine. One institution representing one state (2%) required one assessment credit.
Seventeen institutions representing 10 states (21%) mandated two credits towards an assessment course. Forty-six institutions representing 23 states (49%) mandated three credits towards assessment. Two institutions representing one state (2%) mandated four credits towards assessment. Four institutions representing four states (9%) mandated six credits towards assessment, and one institution each representing two states (2%) mandated eight and nine semester credits respectively towards assessment courses. Table 3 provides data on the number of required assessment credits by state. Finally, 57 institutions (46%) reported that the question was not applicable.

<table>
<thead>
<tr>
<th>Two Credits</th>
<th>Three Credits</th>
<th>Multiple Credits</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=11</td>
<td>N=23</td>
<td>N=8</td>
<td></td>
</tr>
<tr>
<td>California</td>
<td>Alabama</td>
<td>Missouri</td>
<td>West Virginia</td>
</tr>
<tr>
<td>Georgia</td>
<td>Arkansas</td>
<td>Missouri</td>
<td>Nebraska</td>
</tr>
<tr>
<td>Indiana</td>
<td>Colorado</td>
<td>New Mexico</td>
<td>Ohio</td>
</tr>
<tr>
<td>Kentucky</td>
<td>Florida</td>
<td>New York</td>
<td></td>
</tr>
<tr>
<td>Nebraska</td>
<td>Georgia</td>
<td>Oklahoma</td>
<td>Colorado</td>
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<tr>
<td>Oklahoma</td>
<td>Indiana</td>
<td>Pennsylvania</td>
<td>Florida</td>
</tr>
<tr>
<td>S. Carolina</td>
<td>Kansas</td>
<td>S. Carolina</td>
<td>Pennsylvania</td>
</tr>
<tr>
<td>S. Dakota</td>
<td>Kentucky</td>
<td>Tennessee</td>
<td>Texas</td>
</tr>
<tr>
<td>Washington</td>
<td>Louisiana</td>
<td>Texas</td>
<td></td>
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<td>Maryland</td>
<td>Utah</td>
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<td>Wyoming</td>
<td>Michigan</td>
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<td>Indiana</td>
</tr>
<tr>
<td></td>
<td>Mississippi</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When assessment courses were optional, the number of such optional credits ranged from two to 10 within 29 institutions across 22 states. Four institutions representing four states (9%) reported that two credits were optional. Seventeen institutions representing 15 states (32%) reported that three optional credits were offered.
Four institutions representing three states (6%), two institutions representing one state, and two institutions representing two states reported that four, six and ten plus optional credits respectively of assessment coursework respectively were available to pre-service teachers. Eighty-six institutions (75%) reported that the question was not applicable.

Of the states that reported no assessment courses were required either by state or institutional mandate, only Delaware, Idaho and Oregon offered pre-service teachers an optional assessment course. Of the states that required an assessment course by institutional mandate, only Indiana, Kentucky, Maryland, Missouri, Nebraska, Ohio, Pennsylvania, and South Dakota offered optional assessment courses. However, most states reported assessment information was embedded within other required courses.

One hundred and twenty-six institutions representing 46 states (96%) reported that assessment information was embedded within other required coursework. Sixty-four institutions representing 34 states (76%) reported that assessment information was embedded within five or more other required courses. Twenty-eight institutions representing 19 states (42%) reported assessment information was embedded within three other required courses. Fourteen institutions represented by 11 states (24%), 15 institutions represented by 10 states (22%), five institutions represented by five states (11%) reported that assessment information was embedded within four courses, two courses, and one course respectively. The amount of time allocated to assessment within these courses varied.

One hundred and seventeen institutions representing 45 states reported on the percentage of time spent discussing assessment related topics in other required courses. Thirty institutions represented by 24 states reported that 11-15% of time in other required
courses was spent discussing assessment related topics. Forty-one institutions representing 23 states reported that 6-10% of time in other required courses was utilized for discussion of assessment related topics. Twenty-three institutions represented by 16 states, fifteen institutions represented by 13 states 11 institutions represented by 11 states (24%), and seven institutions represented by seven states reported that 16-20%, more than 25%, 1-5%, and 21-25% of time spent, respectively, in other required courses was assessment related. Table 4 lists the number of other required courses and the percentage of time spent on assessment related topics within those courses.

<table>
<thead>
<tr>
<th>State</th>
<th>First Institution Within State</th>
<th>Second Institution Within State</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Courses</td>
<td>Percentage of Time</td>
</tr>
<tr>
<td>Alabama</td>
<td>3</td>
<td>16-20</td>
</tr>
<tr>
<td>Arkansas</td>
<td>2</td>
<td>6-10</td>
</tr>
<tr>
<td>California</td>
<td>4</td>
<td>11-15</td>
</tr>
<tr>
<td>Colorado</td>
<td>2</td>
<td>6-10</td>
</tr>
<tr>
<td>Connecticut</td>
<td>3</td>
<td>16-20</td>
</tr>
<tr>
<td>Delaware</td>
<td>5</td>
<td>21-25</td>
</tr>
<tr>
<td>Florida</td>
<td>2</td>
<td>6-10</td>
</tr>
<tr>
<td>Georgia</td>
<td>3</td>
<td>11-15</td>
</tr>
<tr>
<td>Hawaii</td>
<td>4</td>
<td>6-10</td>
</tr>
<tr>
<td>Idaho</td>
<td>5</td>
<td>11-15</td>
</tr>
<tr>
<td>Illinois</td>
<td>1</td>
<td>11-15</td>
</tr>
<tr>
<td>Indiana</td>
<td>3</td>
<td>11-15</td>
</tr>
<tr>
<td>Iowa</td>
<td>5</td>
<td>6-10</td>
</tr>
<tr>
<td>Kansas</td>
<td>4</td>
<td>16-20</td>
</tr>
<tr>
<td>Kentucky</td>
<td>5</td>
<td>6-10</td>
</tr>
<tr>
<td>Maine</td>
<td>5</td>
<td>16-20</td>
</tr>
<tr>
<td>Maryland</td>
<td>3</td>
<td>11-15</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>4</td>
<td>6-10</td>
</tr>
<tr>
<td>Michigan</td>
<td>3</td>
<td>16-20</td>
</tr>
<tr>
<td>Minnesota</td>
<td>3</td>
<td>25+</td>
</tr>
<tr>
<td>Mississippi</td>
<td>3</td>
<td>1-5</td>
</tr>
<tr>
<td>Montana</td>
<td>3</td>
<td>25+</td>
</tr>
<tr>
<td>State</td>
<td>Count</td>
<td>Years 1</td>
</tr>
<tr>
<td>---------------</td>
<td>-------</td>
<td>---------</td>
</tr>
<tr>
<td>Missouri</td>
<td>2</td>
<td>11-15</td>
</tr>
<tr>
<td>Nebraska</td>
<td>1</td>
<td>11-15</td>
</tr>
<tr>
<td>Nevada</td>
<td>5+</td>
<td>11-15</td>
</tr>
<tr>
<td>New Jersey</td>
<td>5+</td>
<td>11-15</td>
</tr>
<tr>
<td>New Mexico</td>
<td>1</td>
<td>25+</td>
</tr>
<tr>
<td>New York</td>
<td>2</td>
<td>16-25</td>
</tr>
<tr>
<td>North Carolina</td>
<td>2</td>
<td>21-25</td>
</tr>
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<td>North Dakota</td>
<td>3</td>
<td>11-15</td>
</tr>
<tr>
<td>Ohio</td>
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<td>25+</td>
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<td>Oklahoma</td>
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<td>11-15</td>
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<tr>
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<td>25+</td>
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<td>16-20</td>
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<tr>
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<td>16-20</td>
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<td>16-20</td>
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<td>25+</td>
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<td>11-15</td>
</tr>
<tr>
<td>Wyoming</td>
<td>2</td>
<td>11-15</td>
</tr>
</tbody>
</table>

Demographic data were obtained on instructors of pre-service teachers’ assessment courses. Instructors teaching assessment courses tended to be mostly associate professors (47%), assistant professors (23%) or full professors (22%). Most professors (48%) had 15 or more years of teaching experience. Twenty-one percent of those teaching the course had seven to 10 years of teaching experience. Thirteen percent of those teaching the course had either 11-14, and another 13% of those teaching the course had four to six years of teaching experience. The remaining instructors (6%) had one to three years of teaching experience. One graduate student taught the course with three years of experience. Thus, 74% of the instructors had seven or more years of teaching experience. The instructors’ background in assessment training varied as well.
Fourteen instructors (12%) teaching the assessment course reported having a Ph.D. in assessment. Twenty-three instructors (20%) reported having substantial assessment training after earning their doctoral degrees. Substantial assessment training in the “other comment” field was defined as taking three or more assessment courses. Nineteen instructors (16%) reported having substantial assessment training. Combined, 56 instructors (48%) reported having earned their doctorate in assessment or reported having substantial assessment training after earning their doctoral degrees.

Thirty-one instructors (27%) reported having some assessment training after earning their doctorate. Some assessment training in the “other comment” field was defined as one or two courses in assessment. Fifteen instructors (13%) reported having some assessment training. Thus, 46 instructors (40%) had some assessment training after earning their doctoral degrees or had one or two assessment courses while earning their doctoral degrees.

Content of Assessment Courses

Assessment Options Training

Six major assessment options -- selected response, essay, performance, personal communication, portfolio, and alternative assessment -- were investigated using a seven point Likert scale to determine the extent these assessment options were fully addressed by instructors teaching the assessment content to pre-service teachers. Respondents answering strongly agree (1), somewhat agree (2), or agree (3) were categorized as exceeding assessment standards. Respondents answering neutral (4) were categorized as meeting assessment standards. Respondents answering disagree (5), somewhat disagree (6) or strongly disagree (7), were categorized as below standards. One hundred and
Respondents reported that they fully addressed performance assessment with pre-service teachers the strongest with 93 strongly agree, 20 somewhat agree and 19 agree responses. Results represent 98% of reporting institutions that exceeded standards with performance assessment instruction to pre-service teachers. Two neutral responses to the question increased the percentage of institutions to over 99% that exceeded or met the standards while instructing pre-service teachers in performance assessment. One strongly disagree response respondent was noted.

Portfolio and alternative assessment were reported as the second highest type of assessment that exceeded or met standards with 83 strongly agree, 29 somewhat agree and 15 agree responses for portfolio assessment, while alternative assessment was reported as 77 strongly agree, 25 somewhat agree and 25 agree responses. For both portfolio and alternative assessment, 94% of reporting institutions reported that instruction to pre-service teachers exceeded standards in both categories. When neutral responses were factored into both categories, 99% of reporting institutions exceeded or met standards while instructing pre-service teachers on portfolio and alternative assessment. Within both portfolio and alternative assessments, one percent of responding institutions reported not meeting standards.

Respondents reported that they fully addressed essay assessment with pre-service teachers third strongest with 56 strongly agree, 26 somewhat agree, and 43 agree responses. These results represent 93% of responding institutions reporting that standards
were exceeded. When adding the neutral response, over 97% of reporting institutions reported exceeding or meeting standards. Four institutions (3%) reported below standards.

Respondents reported that they fully addressed selected response assessment with pre-service teachers with 54 strongly agree, 26 reported somewhat agree and 36 agree responses. These results represent 87% of reporting institutions that exceeded standards when instructing pre-service teachers on selected response assessment. Nine neutral responses to the question increased the percentage of institutions to 94% that exceeded or met standards while teaching selected response to pre-service teachers. Eight institutions representing six percent of institutions reported below standards while teaching pre-service teachers selected response assessment.

Finally, respondents reported that they fully addressed personal communications with pre-service teachers with 27 strongly agree, 27 somewhat agree, and 39 agree responses. These results represent 68% of reporting institutions that exceeded standards while teaching personal communications. Thirty neutral responses increased the percentage of institutions to 90% that exceeded or met the standards while teaching pre-service teachers personal communication as an assessment option. Eight disagree responses, two somewhat disagree, and three strongly disagree responses accounted for the other ten percent of institutions that reported below standards while teaching pre-service teachers personal communication as an assessment option. Although results for personal communication were lowest of the six assessment options, these six assessment standards as self reported were well covered across reporting institutions and states.
Within these six assessment elements, 99% of institutions representing 46 states and the District of Columbia reported instruction given to pre-service teachers exceeded or met standards for performance and alternative assessment. Ninety-seven percent of responding institutions reported that instruction given for essay assessment met standards, 94% of responding institutions reported that selected response and alternative assessment met standards and finally, 90% of responding institutions reported meeting standards for pre-service teachers when teaching personal communication as an assessment method. When averaged across all six assessment options, 96% of institutions representing 47 states and the District of Columbia reported exceeding or meeting standards within the six assessment types surveyed. Table 5 summarizes these results.

Table 5
Percentage of Institutions Exceeding, Meeting, or Below Standards for Assessment Type

<table>
<thead>
<tr>
<th>Assessment Type</th>
<th>Exceeds</th>
<th>Met Standards</th>
<th>Below Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>n</td>
<td>Percent</td>
</tr>
<tr>
<td>Performance</td>
<td>98</td>
<td>132</td>
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<tr>
<td>Portfolio</td>
<td>94</td>
<td>127</td>
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</tr>
<tr>
<td>Alternative Assessment</td>
<td>94</td>
<td>127</td>
<td>5</td>
</tr>
<tr>
<td>Essay</td>
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<td>125</td>
<td>4</td>
</tr>
<tr>
<td>Selected Response</td>
<td>87</td>
<td>116</td>
<td>7</td>
</tr>
<tr>
<td>Personal Communication</td>
<td>69</td>
<td>93</td>
<td>21</td>
</tr>
</tbody>
</table>

Assessment Skills Training

Eight major assessment skills—decision making, rubric development, choosing appropriate assessment type, scoring and interpreting, communicating assessment results, identifying inappropriate assessment methods, communicating large scale assessment results, and utilizing computerized grade programs—were investigated using a seven
point Likert scale to determine the extent these assessment skills were fully addressed by instructors teaching the assessment courses. Like the previous section, respondents answering strongly agree (1), somewhat agree (2), or agree (3) were categorized as exceeding assessment standards. Respondents answering neutral (4) were categorized as meeting standards. Respondents answering disagree (5), somewhat disagree (6) or strongly disagree (7) were categorized as below standards. One hundred and thirty-five to 137 responses on pre-service teachers’ understanding of the eight assessment skills were tabulated. Table 6 has percentage of responses and number of responses in each category.

Using assessment results when making decisions about individual students, planning, teaching, developing curriculum and school improvement were reported by responding institutions as the highest content area within this subsection. The following responses were observed: 73 strongly agree, 30 somewhat agree, and 28 agree responses for a total of 131 responses were observed. Over 97% of all responding institutions reported that pre-service teachers were given instruction on this assessment element that exceeded standards. Three disagree, and one somewhat disagree and one strongly disagree response accounted for the remaining responses that were tabulated as below standards.

Respondents reported that they fully addressed rubric development with pre-service teachers with 73 strongly agree, 27 somewhat agree and 30 agree responses. These results accounted for over 96% of all institutions exceeding standards regarding rubric development. Three neutral responses increased the percent of institutions to 99% that exceeded or met standards. One somewhat disagree and one strongly disagree response represented four percent of institutions that self reported below standards.
Choosing the most appropriate assessment type given instructional objective was also self reported by participating institutions as a strong skill area with 66 strongly agree, 32 somewhat agree and 31 agree responses. These results represent 96% of all institutions that self reported instruction to pre-service teachers exceeded standards in choosing the most appropriate assessment method. Two neutral responses increase the percent of institutions to 97% that exceeded or met standards. One disagree, one somewhat disagree and two strongly disagree responses represented three percent of institutions that self reported below standards.

Respondents reported that they fully addressed skills in communicating assessment results to students, parents, other lay audiences and other educators with pre-service teachers with 43 strongly agree, 39 somewhat agree, and 39 agree responses. These results represent over 88% of reporting institutions exceeding standards with this assessment element. Nine neutral responses to the question increased the percentage of institutions to 95% that exceeded or met the standards while teaching pre-service teachers skills in communicating assessment results to a variety of audiences. Five disagree and two somewhat disagree responses represented the remaining five percent of institutions that self reported below standards.

Skills in recognizing unethical, illegal, and otherwise inappropriate assessment methods and the use of assessment information were self reported with 41 strongly agree, 45 somewhat agree, and 33 agree responses. Eighty-six percent of reporting institutions reported that instruction given to pre-service teachers exceeded standards. Eleven neutral responses increased the percent of institutions to 95% that exceeded or met standards while teaching pre-service teachers this assessment element. Four disagree, one
somewhat disagree and two strongly disagree responses represented five percent of institutions that self reported below standards.

Respondents reported that they fully addressed skills in communicating large-scale assessment results to students, parents, other lay audiences and other educators with 29 strongly agree, 29 somewhat agree, and 46 agree responses. These results represent 76% of reporting institutions exceeding standards with knowledge of communicating to various audiences about criterion referenced and norm referenced tests. Eighteen neutral responses increased the percent of institutions that exceed or met standards to 90% while teaching pre-service teachers this assessment element. Eight disagree, two somewhat disagree and four strongly disagree responses accounted for the remaining ten percent of institutions that self reported below standards.

Skills in utilizing a computerized grade program were reported as the weakest skill area with 29 strongly agree, 25 somewhat agree, and 36 agree responses. These results represent 67% of reporting institutions exceeding standards. Twenty four neutral responses increased the percent of institutions to 84% that exceeded or met standards while teaching pre-service teachers computerized grade programs. Sixteen disagree, three somewhat disagree and two strongly disagree responses accounted for the remaining 16% of institutions that self reported not meeting standards.

Overall, within these eight assessment elements, 94% of institutions representing 46 states and the District of Columbia self reported instruction given to pre-service teachers exceeded or met assessment standards for these eight elements. Ninety-eight percent of responding institutions self reported instruction given to pre-service teachers that exceeded or met rubric development, 97% in decision making and choosing the
correct type of assessment, 96% in scoring and interpreting, 95% in communicating assessment results and identifying inappropriate assessment methods, 89% in communicating large scale test results, and 84% in utilizing computerized grade programs. In addition, individual comments were obtained regarding additional pre-service teachers’ assessment training. Table 6 summarizes these results.

<table>
<thead>
<tr>
<th>Assessment Skills</th>
<th>Exceeds Standards</th>
<th>Met Standards</th>
<th>Below Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision Making</td>
<td>97%</td>
<td>0%</td>
<td>3%</td>
</tr>
<tr>
<td>Rubric Development</td>
<td>96%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Choosing Correct</td>
<td>96%</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>Assessment Type</td>
<td>93%</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Scoring &amp; Interpreting</td>
<td>88%</td>
<td>7%</td>
<td>5%</td>
</tr>
<tr>
<td>Communicating Results</td>
<td>87%</td>
<td>8%</td>
<td>5%</td>
</tr>
<tr>
<td>Identifying Inappropriate Assessment Methods</td>
<td>87%</td>
<td>8%</td>
<td>5%</td>
</tr>
<tr>
<td>Communicating Large Scale Results</td>
<td>76%</td>
<td>13%</td>
<td>10%</td>
</tr>
<tr>
<td>Computerized Grade Programs</td>
<td>67%</td>
<td>17%</td>
<td>16%</td>
</tr>
</tbody>
</table>

Individual comments concerning assessment content taught to pre-service teachers included single responses on reflection after assessment to redesign instruction, integrating assessment into the development of curriculum, and reading assessment all as other content taught within various assessment courses.

In summary, within the 14 assessment elements surveyed, 95% of institutions representing 47 states and the District of Columbia exceeded or met the standards. Thus,
as self reported by institutional representatives, assessment standards were adequately covered during instruction for pre-service teachers.

The vast majority of institutions (68%) and states (79%) reported using Interstate New Teacher Assessment and Support Consortium Standards established by the Council of Chief State School Officers as their assessment standards for pre-service teachers. The combined standards of the American Federation of Teachers, the National Council of Measurement in Education, and the National Education Association standards were used by 12 institutions (8%), and 10 states. Individual comments results from 13 institutions (8%) reported that NCATE standards were used in conjunction with the standards listed above. Finally, various state standards were listed as being in conjunction with the two major standards. Pre-service school counselors’ assessment will be discussed next.

**Pre-Service School Counselor**

Seventy-one NCATE colleges and universities from 33 states and the District of Columbia (72%) responded to the on line pre-service counselor survey. Colleges and universities from 13 states did not respond. Forty-five colleges and universities representing 33 states reported having a pre-service counselor program. Twenty-six institutions representing four states and the District of Columbia (11%) did not have pre-service counselor programs. Further analyses will utilize 33 states as 100% of states responding.

Twenty-four institutions representing 24 states (73%) reported an assessment course was state mandated. Ten institutions representing nine states (27%) reported that an assessment course was required by institutional mandate. Two different institutions from four states, Pennsylvania, South Carolina, Texas, and Wisconsin, all reported that
pre-service school counselor candidates were required by state mandate to enroll in an assessment course and that the assessment course was an institutional mandate. These states were moved to the lowest assessment requirement column for analyses. Despite inconsistencies, all reporting states required pre-service school counselors to enroll in an assessment course either by state or institutional mandate. No other options were reported. Table 7 lists the pre-service school counselor assessment course requirement by state.

<table>
<thead>
<tr>
<th>Table 7</th>
<th>State Pre-Service School Counselor Assessment Requirement Options</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>State Requirement</td>
</tr>
<tr>
<td></td>
<td>N=24</td>
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<tr>
<td>Alabama</td>
<td>Alaska</td>
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<td>Arkansas</td>
<td>California</td>
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<td>New Jersey</td>
<td>New York</td>
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<td>N. Carolina</td>
<td>Ohio</td>
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<td>Oklahoma</td>
<td>S. Dakota</td>
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<td>Virginia</td>
<td>Washington</td>
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<tr>
<td>W. Virginia</td>
<td>Wyoming</td>
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</tbody>
</table>

Forty-two colleges and universities reported having semester clock hours. Three institutions reported having quarter hours. These institutions’ quarter hours were converted to semester hours (L. Hobbs, personal communications May 11, 2005) for analysis. Required assessment credits ranged from two to six semester hours. Thirty-five institutions representing 27 states (73%) required pre-service school counselors to enroll
in three semester hours of assessment coursework. Nine institutions representing nine states (27%) required students to take six semester hours of assessment courses. Finally, one institution representing one state (3%) required two semester hours of assessment coursework. Table 8 lists the required number of assessment credit by states.

<table>
<thead>
<tr>
<th>Two Semester Credits</th>
<th>Three Semester Credits</th>
<th>Six Semester Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=1</td>
<td>N=27</td>
<td>N=9</td>
</tr>
<tr>
<td>Ohio</td>
<td>Arkansas</td>
<td>Alabama</td>
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<tr>
<td>California</td>
<td>Florida</td>
<td>Colorado</td>
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<tr>
<td>Georgia</td>
<td>Illinois</td>
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<td>Indiana</td>
<td>Kansas</td>
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<td>Louisiana</td>
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<td>Mississippi</td>
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<td>Nebraska</td>
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<td>N. Carolina</td>
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<td>Oklahoma</td>
<td>Oregon</td>
<td>Washington</td>
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<tr>
<td>S. Carolina</td>
<td>S. Dakota</td>
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<tr>
<td>Tennessee</td>
<td>Texas</td>
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<tr>
<td>Virginia</td>
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<tr>
<td>W. Virginia</td>
<td>Wisconsin</td>
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<tr>
<td>Wyoming</td>
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</tr>
</tbody>
</table>

A small number of institutions offered optional assessment credits ranging from three to 10 or more credits. Seven institutions representing seven states (21%) offered such an option to pre-service school counselors. Four institutions representing four states (12%) Alabama, Indiana, Texas and Wisconsin reported having three optional semester hours of assessment coursework. One institution representing Alaska offered six credits of optional assessment coursework, while one institution representing Ohio offered nine
and one institution representing Pennsylvania offered 10 or more optional credits of assessment coursework.

Of the thirty-nine institutions responding to the question of whether assessment information was embedded within other required courses, 22 institutions representing 13 states (39%) reported that it was not. Eight institutions representing seven states (21%) reported that three other required courses had assessment information embedded within them. Four institutions representing four states (12%) reported that assessment information was embedded within five or more other required courses. Two institutions representing two states (6%) reported that assessment information was embedded within two other required courses. Two institutions representing two states (6%) reported that assessment information was embedded within one other required assessment course. Finally, one institution representing one state reported that assessment information was embedded within four other required courses. The amount of time allocated to assessment information within other required courses varied across institutions and states.

When other required courses had assessment information embedded, six institutions representing six states reported that 11-15% of course time was devoted to assessment, while five institutions representing five states (15%) reported that 16-20% of other required course time was devoted to assessment. Three institutions representing three states (9%) reported that 6-10% of other required course time was assessment related. Two institutions representing two states (6%) reported that more than 25% of classroom time in other required courses was devoted to assessment. One institution representing one state each reported that 1-5% and 21-25% of classroom time, respectively, in other required courses was allocated for assessment information.
Instructors teaching assessment courses were evenly split between associate professor (32%), full professors (30%), and assistant professors (26%). Adjunct professors taught the course 12% of the time. Most professors (26%) had 15 or more years of teaching experience. Twenty-four percent of professors had seven to 10 years of teaching experience. Nineteen percent of professors had either four to six years, or 11-14 years of teaching experience. The smallest percent of professors (9%) had one to three years of teaching experience. Three institutions reported that graduate students with three and four years of teaching experience taught the assessment course. Thus, 70% of professors teaching the assessment course to pre-service school counselors had seven or more years of teaching experience. Assessment training varied among instructors.

Nineteen professors (41%) teaching the pre-service school counselor assessment course had some assessment training after earning their doctoral degrees. Seventeen professors (37%) had substantial training in assessment after earning their doctoral degrees. Ten professors (22%) had a doctorate in assessment. Thus, most professors (59%) teaching the assessment course had earned their doctorate in assessment, or obtained substantial assessment training after earning their doctorate degrees.

Content of Assessment Courses

Forty-eight to 49 responses via a seven point Likert scale on pre-service school counselors understanding of a variety of assessment options and information closely related to assessment standards written for school counselors were provided by representatives from 33 states. Again, respondents answering strongly agree (1), somewhat agree (2), or agree (3), were scored as exceeding assessment standards. Respondents answering neutral (4) were scored as meeting assessment standards.
Respondents answering disagree (5), somewhat disagree (6), or strongly disagree (7), were scored as below standards. Table 9 has the percentage of responses in the three categories for the 15 assessment content areas that professional organizations recommend be taught to pre-service school counselors.

<table>
<thead>
<tr>
<th>Assessment Skills</th>
<th>Exceeds Standards</th>
<th>Met Standards</th>
<th>Below Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Validity</td>
<td>100 49</td>
<td>0 0</td>
<td>0 49</td>
</tr>
<tr>
<td>Test Reliability</td>
<td>100 49</td>
<td>0 0</td>
<td>0 49</td>
</tr>
<tr>
<td>Errors of Measurement</td>
<td>100 48</td>
<td>0 0</td>
<td>0 48</td>
</tr>
<tr>
<td>Rights &amp; Responsibilities of Test Takers</td>
<td>100 49</td>
<td>0 0</td>
<td>0 49</td>
</tr>
<tr>
<td>Test Administration, Scoring &amp; Reporting</td>
<td>100 49</td>
<td>0 0</td>
<td>0 49</td>
</tr>
<tr>
<td>Support Documentation for Tests</td>
<td>100 49</td>
<td>0 0</td>
<td>0 49</td>
</tr>
<tr>
<td>The Responsibilities of Test Users</td>
<td>98 48</td>
<td>2 1</td>
<td>0 49</td>
</tr>
<tr>
<td>Fairness in Testing</td>
<td>98 48</td>
<td>2 1</td>
<td>0 49</td>
</tr>
<tr>
<td>Educational Testing &amp; Assessment</td>
<td>98 48</td>
<td>0 0</td>
<td>2 1 49</td>
</tr>
<tr>
<td>Psychological Testing &amp; Assessment</td>
<td>96 47</td>
<td>0 0</td>
<td>2 1 49</td>
</tr>
<tr>
<td>Testing Individuals with Disabilities</td>
<td>92 45</td>
<td>6 3</td>
<td>2 1 49</td>
</tr>
<tr>
<td>Testing Individuals of Diverse Linguistic</td>
<td>90 44</td>
<td>8 4</td>
<td>2 1 49</td>
</tr>
<tr>
<td>Test Development &amp; Revision</td>
<td>88 42</td>
<td>12 6</td>
<td>0 48</td>
</tr>
<tr>
<td>Testing in Employment &amp; Credentialing</td>
<td>74 42</td>
<td>12 6</td>
<td>0 48</td>
</tr>
<tr>
<td>Testing in Program Evaluation</td>
<td>71 34</td>
<td>12 6</td>
<td>0 8 48</td>
</tr>
</tbody>
</table>
Institutions reported that they fully addressed six assessment content areas with 100% of all institutions and states exceeding standards. Test validity and test reliability both received 40 strongly agree, two somewhat agree and seven agree responses. Errors of measurement received 15 strongly agree, 16 somewhat agree, and seven agree responses. Rights and responsibilities of test takers received 34 strongly agree, seven somewhat agree, and eight agree responses. Test administration, scoring and reporting received 32 strongly agree, nine somewhat agree, and eight agree responses. Finally, supporting documentation for tests received 23 strongly agree, 16 somewhat agree, and ten agree responses.

Fairness in testing and test use, educational testing and assessment, and the responsibilities of test users were reported as the second highest content area group with 98% of all institutions exceeding standards. Fairness in testing received 36 strongly agree, seven somewhat agree, and five agree responses. One neutral response representing two percent of respondents was posted as meeting standards. Educational testing and assessment received 30 strongly agree responses, nine somewhat agree responses, and nine agree responses. One disagree response accounted for two percent of the responses. Responsibilities of test users received 28 strongly agree, 14 somewhat agree, and six agree responses. One disagree response was noted.

Psychological testing and assessment, testing individuals with disabilities, and testing individuals of diverse linguistic background comprised the third highest grouping of content areas with exceeding standards percentages of 96%, 92%, and 90% respectively. Psychological testing and assessment received 30 strongly agree, nine somewhat agree, and eight agree responses. One somewhat disagree and one strongly
disagree accounted for four percent of the responses. Testing individuals with disabilities received 19 strongly agree, 17 somewhat agree, and nine agree responses. Three neutral responses representing six percent of the responses were noted. One disagree response, representing two percent of the responses, accounted for the not meeting standard within this content area. Testing individuals with diverse linguistic backgrounds received 18 strongly agree, 16 somewhat agree, and 10 agree responses. Four agree responses representing eight percent of the responses were tallied. One disagree representing two percent of respondents accounted for the not meeting standard within this content area.

Test development and revision, testing in employment and credentialing, and testing in program evaluation and public policy comprised the final grouping of content areas with exceeding standards percentages of 88%, 76% and 70% respectively. Test development and revision received 15 strongly agree, 16 somewhat agree, and 11 agree responses. Six agree responses representing 12% of all responses were noted. Testing in employment and credentialing received nine strongly agree, 19 somewhat agree and eight agree responses. Six neutral responses representing 12% of all responses were noted. Three disagree and three strongly disagree responses representing 12% of all responses were tallied. This content area received the highest percentage not meeting standards. Additional individual comments were also summarized.

Individual comments concerning content areas taught included single responses regarding assessment training through clinical interviews, alternative assessment methods, report writing, criteria for test selection, and test interpretation.

In summary, over 98% of institutions representing 33 states self reported giving instruction to pre-service school counselors in the 15 content areas that exceeded or met
assessment standards. Thus, as self-reported pre-service school counselors were adequately exposed to these assessment standards. Two specific sets of assessment standards were mostly used during instruction across the 33 states.

Most respondents (49%) used Council for Accreditation of Counseling and Related Educational Program standards. Forty-two percent of respondents used the Association for Assessment in Counseling, American School Counselor Association and the National Council on Measurement in Education standards. Four institutions used state standards, one institution used National Council for Accreditation of Teacher Education standards, and one institution used American Psychological Association standards. Pre-service principal assessment training will be discussed next.

Pre-Service Principals

Sixty-six NCATE colleges and universities from 30 states (60%) and the District of Columbia responded to the online pre-service principal survey. Colleges and universities from 14 states (28%) did not respond. Forty-one institutions representing 30 states reported having a pre-service principal program. Six institutions representing five states and the District of Columbia did not have pre-service principal programs.

Alabama had one institution that reported that a state mandate existed and one institution that reported that an assessment course was optional. Indiana had one institution report that an assessment course was state mandated, and one institution that reported that assessment information was embedded within other required courses. Massachusetts and North Carolina each had two institutions report that a state and an institutional mandate existed. Montana had one institution that reported an optional
assessment course existed and one institution that reported that assessment information was embedded within other required courses. Tennessee had one institution that reported a state mandate existed and two institutions reported that assessment information was embedded within other required courses. Texas had two institutions report that a state mandate existed and two institution report that assessment information was embedded within other required courses. These states were moved to the lowest assessment requirement column for analyses. Further analyses will utilize 30 states as 100% of states responding. The following results emerged.

Nine institutions represented by nine states (30%) reported that a state mandate existed for an assessment course. Three institutions represented by three states (10%) reported that an assessment course was institutionally mandated. Two institution represented by two states (7%) reported that an optional assessment course was provided and 20 institutions representing 16 states (53%) reported that assessment information was embedded within other required coursework. Table 10 lists the pre-service principal assessment course requirements by state.

Forty colleges and universities reported having semester clock hours. One institution reported having quarter hours. This institution’s quarter hours were converted to semester hours (L. Hobbs, personal communications May, 11, 2005) for analysis. Required assessment courses ranged from two to eight credits. Twenty institutions represented by 17 states (57%) required pre-service principals to take an assessment course. Of these 20 institutions, one institution represented by one state required a two credit assessment course. Fourteen institutions represented by 11 states required a three credit course. Two institutions each representing a state required four and six assessment
credits. Finally, one institution represented by one institution required eight assessment credits. Table 11 lists the required number of assessment credits by states.

<table>
<thead>
<tr>
<th>State</th>
<th>Institutional Requirement N=9</th>
<th>Optional Course Requirement N=3</th>
<th>Assessment Embedded N=2</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>Massachusetts</td>
<td>Alabama</td>
<td>Arkansas</td>
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<td>Colorado</td>
<td>North Carolina</td>
<td>New York</td>
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<td>West Virginia</td>
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<td>Wisconsin</td>
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</table>

Eight institutions represented by eight states reported having three or six optional assessment credits. Seven institutions representing seven states (23%) Alabama, Florida, Massachusetts, New Mexico, New York, Tennessee, and Texas offered three credits of optional assessment coursework. One institution represented by one state (3%), North Carolina, offered six credits of optional assessment coursework. All states reported that assessment information was embedded within other required courses.
<table>
<thead>
<tr>
<th>Two Semester Credits N=1</th>
<th>Three Semester Credits N=11</th>
<th>Four Semester Credits N=2</th>
<th>Six Semester Credits N=2</th>
<th>Eight Semester Credits N=1</th>
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<table>
<thead>
<tr>
<th>Wyoming</th>
<th>Alabama</th>
<th>Mississippi</th>
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<th>California</th>
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</table>

Thirty-six institutions representing all 30 states (100%) reported that assessment information was embedded within other required coursework. The number of courses with embedded assessment information ranged from one to five or more. Three institutions represented by three states (10%) reported one course, 10 institutions represented by 10 states (33%) reported two courses, 12 institutions represented by 12 states (36%) reported three courses, four institutions represented by four states (13%) reported four courses, and seven institutions represented by six states (23%) reported having five or more courses with embedded assessment information. The amount of time allocated to assessment within these other required course varied.

Thirty-seven institutions representing 28 states reported on the percentage of time spent discussing assessment related topics in other required courses. Two institutions represented by two states (7%) reported one to five percent, 11 institutions represented by 11 states (37%) reported six to 10 percent, nine institutions represented by nine states
(30%) reported 11-15%, seven institutions represented by seven states (23%) reported 16-20%, two institutions represented by two states (7%) reported 21-25%, and six institutions represented by six states (20%) reported 25 percent or more time allocated towards assessment related topics within other required courses. Table 12 lists the number of required courses and the percentage of time allocated towards assessment.

Table 12
Number of Other Required Courses & Percentage of Time Spent on Assessment Information

<table>
<thead>
<tr>
<th>State</th>
<th>First Institution Within State</th>
<th>Number of Courses</th>
<th>Percentage of Time</th>
<th>Second Institution Within State</th>
<th>Number of Courses</th>
<th>Percentage of Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td></td>
<td>1</td>
<td>21-25</td>
<td>5+</td>
<td>6+</td>
<td>6-10%</td>
</tr>
<tr>
<td>Arkansas</td>
<td></td>
<td>3</td>
<td>6-10%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>California</td>
<td></td>
<td>1</td>
<td>25+</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Colorado</td>
<td></td>
<td>2</td>
<td>25+</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Connecticut</td>
<td></td>
<td>5+</td>
<td>11-15%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Florida</td>
<td></td>
<td>2</td>
<td>11-15%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Georgia</td>
<td></td>
<td>2</td>
<td>16-20%</td>
<td>5+</td>
<td>6-10%</td>
<td>6-10%</td>
</tr>
<tr>
<td>Illinois</td>
<td></td>
<td>2</td>
<td>25+</td>
<td>3</td>
<td>6-10%</td>
<td>6-10%</td>
</tr>
<tr>
<td>Indiana</td>
<td></td>
<td>3</td>
<td>11-15%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Kansas</td>
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<td>3</td>
<td>1-5%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Kentucky</td>
<td></td>
<td>3</td>
<td>16-20%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Louisiana</td>
<td></td>
<td>4</td>
<td>11-15%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Minnesota</td>
<td></td>
<td>1</td>
<td>6-10%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mississippi</td>
<td></td>
<td>3</td>
<td>21-25%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Montana</td>
<td></td>
<td>4</td>
<td>6-10%</td>
<td>1</td>
<td>25+</td>
<td></td>
</tr>
<tr>
<td>Nebraska</td>
<td></td>
<td>1</td>
<td>1-5%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>New Mexico</td>
<td></td>
<td>3</td>
<td>25+</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>New York</td>
<td></td>
<td>1</td>
<td>11-15%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>North Carolina</td>
<td></td>
<td>2</td>
<td>21-25%</td>
<td>5+</td>
<td>11-15%</td>
<td></td>
</tr>
<tr>
<td>Oklahoma</td>
<td></td>
<td>3</td>
<td>11-15%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Oregon</td>
<td></td>
<td>5+</td>
<td>16-20%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td></td>
<td>4</td>
<td>16-20%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>South Dakota</td>
<td></td>
<td>2</td>
<td>6-10%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tennessee</td>
<td></td>
<td>2</td>
<td>11-15%</td>
<td>3</td>
<td>6-10%</td>
<td>6-10%</td>
</tr>
<tr>
<td>Texas</td>
<td></td>
<td>2</td>
<td>16-20%</td>
<td>3</td>
<td>6-10%</td>
<td>6-10%</td>
</tr>
<tr>
<td>West Virginia</td>
<td></td>
<td>2</td>
<td>11-15%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Wisconsin</td>
<td></td>
<td>3</td>
<td>6-10%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Wyoming</td>
<td></td>
<td>2</td>
<td>6-10%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Instructors teaching courses had various years of teaching experience and assessment training. Instructors for the assessment courses were associate professors (52%), full professors (29%), assistant professors (13%), and adjunct professors (6%). Associate professors taught in 15 states, full professors in nine states, assistant professors in four states, and adjunct professors taught in two states. Eighteen professors (60%) had 15 or more years of teaching experience. Five professors (17%) had 11-14 years of teaching experience, four professors (13%) had seven to ten years of teaching experience, and three professors (10%) had one to three years of teaching experience. Graduate students with four years of experience taught the courses in four states. Thus, 90% of professors, usually at the associate level, teaching courses had seven or more years of teaching experience, with 60% of them having 15 or more years of teaching experience.

Just as years of experience varied, so did instructor assessment training. Thirteen instructors (45%) teaching the assessment course reported having a substantial training in assessment after earning their doctorate degree. Six instructors (21%) teaching the assessment course reported having a Ph.D. in assessment. Ten instructors (34%) teaching the assessment course reported having some training in assessment. Combined, 19 instructors (66%) reported having a doctorate in assessment or having substantial training after earning their doctorate. Thus, the majority of instructors reported having a good deal of training in assessment. Other comments related to instructors training in assessment were experience in the public school system assessing, training as an assessor, and a dissertation with an emphasis on classroom assessment.
Content of Assessment Courses

Fourteen assessment options and information were investigated using a seven point Likert scale to determine the extent these assessment options were fully addressed by instructors teaching the assessment course. Again, respondents answering strongly agree (1), somewhat agree (2), or agree (3), were categorized as exceeding assessment standards. Respondents answering neutral (4) were categorized as meeting assessment standards. Respondents answering disagree (5), somewhat disagree (6, or strongly disagree (7) were categorized as below standards. Thirty-three to 34 responses on pre-service principals’ understanding of the 14 assessment standards were tabulated. Table 13 has percentages of responses and number of responses for the 14 assessment content areas. Each assessment option is discussed in the order which institutions fully addressed them.

Forty-nine institutions representing 26 states reported that they fully addressed six content areas with 100% of all states and institutions exceeding standards. Differentiating between sound and unsound assessments received 21 strongly agree, seven somewhat agree, and six agree responses. Knowledge of unethical and inappropriate use of assessment information received 21 strongly agree, nine somewhat agree, and four agree responses. Knowledge of how all assessments within a school district fit together received 18 strongly agree, 11 somewhat agree, and four agree responses. Able to understand assessment policies and regulations that impact sound assessment use received 17 strongly agree, 12 somewhat agree, and four agree responses. Able to help teachers integrate assessment information in teaching strategies received 13 strongly agree and 13 somewhat agree responses, and eight agree responses. Finally, ability to
accurately analyze and interpret assessment information received 24 strongly agree, four somewhat agree, and six agree responses.

<table>
<thead>
<tr>
<th>Assessment Skills</th>
<th>Exceeds Standards</th>
<th>Met Standards</th>
<th>Below Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differentiate Sound &amp; Unsound Assessments</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Knowledge of Unethical &amp; Inappropriate Assessments</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Knowledge of School-wide Assessments</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Knowledge of Assessment Policies &amp; Regulations</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Integration of Assessment Into Teaching</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Accurately Analyze &amp; Interpret Assessment</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Plan, Implement &amp; Interpret</td>
<td>97</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Evaluate Teachers' Assessment Competency</td>
<td>97</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Building Level Instruction</td>
<td>97</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Implement Assessment Information</td>
<td>97</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Communicate Assessment Information</td>
<td>97</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Protect Others from Misuses</td>
<td>94</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Developmental Experiences</td>
<td>88</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Create Positive Conditions</td>
<td>88</td>
<td>4</td>
<td>12</td>
</tr>
</tbody>
</table>

Six content areas formed the second highest group with five content areas exceeding standards at 97 percent. Within these five content areas that exceeded standards at 97%, one neutral response (3%) scored as meeting standards was noted. The sixth content area exceeded standards at 94 percent. Each content area is discussed below.
Ability to plan, implement and interpret a sound assessment program received 16 strongly agree, 12 somewhat agree, and five agree responses. Able to evaluate teachers’ classroom assessment competencies received 14 strongly agree, 14 somewhat agree, and five agree responses. Able to use assessment results for building level instructional improvement received 15 strongly agree, 13 somewhat agree, and five agree responses. Able to implement assessment information received 13 strongly agree, 13 somewhat agree, and six agree responses. Able to communicate with school community members about assessment results and their relationship to instruction received 16 strongly agree, 12 somewhat agree and five agree responses. Exceeding standards by 94%, able to protect students and staff from misuses of assessment information received 17 strongly agree, 11 somewhat agree, and four agree responses. One neutral response (3%) scored as meeting standards was noted. One disagree response (3%) scored as below standards was also noted. Overall, within these six content areas, more than 99% of all institutions self reported exceeding or meeting these specific assessment standards.

Two content areas formed the final grouping with both content areas exceeding standards at 88 percent. Able to communicate with school community members about assessment results and their relationship to instruction received 17 strongly agree, ten somewhat agree and three agree responses. Four agree responses (12%) were scored as meeting standards. Able to present to staff developmental experiences that contribute to sound assessment at all levels received nine strongly agree, 15 somewhat agree, and six agree responses. Three neutral responses (3%) were scored as meeting standards. One somewhat disagree response (3%) was scored as below standards. Within these two
content areas, 95% of all institutions self reported exceeding or meeting assessment standards while instructing pre-service principals.

Overall, 99% of institutions representing 26 states self reported giving instruction to pre-service principals in 14 assessment content areas that exceeded or met assessment standards. Additionally, individual comments concerning other assessment content taught to pre-service principals included using statistical programs to disaggregate and analyze data, construction of assessment instruments, program improvement, and school improvement through assessment. Institutions used various professional standards when instructing pre-service principals on these assessment elements.

Most respondents (47%) used Interstate School Leaders Consortium (ISLLC) standards. Twenty-seven percent of respondents used the combined standards of the American Association of School Administrators, the National Association of Elementary School Principals, the National Association of Secondary School Principals, and the National Council on Measurement in Educational standards. Seven percent of respondents used the National Policy Board for Educational Administrators standards. Five percent of respondents used National Council of American Teacher Education Standards. Finally, five state standards were used. An overall discussion of the response rates for each survey will follow.

Discussion

Response Rates

Among the three surveys, the response rates for the pre-service teachers’ survey were highest. Ninety-four percent of all NCATE states and the District of Columbia were represented by 33% (155/466) of all institutions surveyed. Twenty-six institutions
declined to participate in all surveys. Forty-three institutions had failed email addresses. Response rates for the pre-service school counselor’s surveys were second highest in all categories, but considerably lower than the pre-service teacher’s survey response rates. Sixty-six percent of all states (33) were represented. Nineteen percent of all institutions (72/373) responded to the survey. Response rates for the pre-service principal’s surveys yielded sixty percent (30) of all states. Eighteen percent of all institutions (66/373) responded to the survey. These response rates and plausible reasons for them are discussed below.

Several possible reasons exist for the low response rates for pre-service school counselor and principal surveys. Asking institutional representatives to fill out three separate surveys is a considerable time commitment. After filling out the pre-service teacher’s survey, some institutional representatives reported that they had utilized all of their available time. Also, several institutions reported that they receive multiple requests a day to complete surveys and again, only so much time was allocated. Other explanations for the low response rates exist, for instance timing, and knowledge of all three programs.

Timing, knowledge of all three programs, and willingness to participate may have also been a factor for the low response rates. While the first surveys were sent out on April 1, 2005 the remaining three sets of surveys were sent out on April 13, April 27, and finally May 5, admittedly at the end of spring semester. Further, several institutional representatives reported that because of the nature of each questionnaire over the three programs, very few professors across colleges and universities would be able to complete all surveys. In addition, several institutional representatives reported being hesitant to ask
someone else to complete the surveys or provide names of people capable of completing them. All of these factors and others contributed to the low response rates especially for the pre-service school counselor and principal surveys.

*Accuracy and Meaning of Self Reports for Pre-Service Teachers’ Surveys*

Eighty-eight percent of all responding institutions self reported exceeding assessment standards while teaching pre-service teachers the specific assessment content. Seven percent of these institutions self reported meeting assessment standards. The remaining five percent of institutions self reported being below standards while teaching pre-service teachers the assessment standards. Thus, ninety-five percent of institutions self reported exceeding or meeting assessment standards while teaching pre-service teachers the 14 assessment elements. These percentages are impressive given the fact that most states (59%) are covering the content of the standards in other required courses. Although some states (32%) are covering this information within institutionally mandated course and other states (9%) make such a course mandatory training for pre-service teachers. When reported as a separate assessment course either by state or institutional mandate, 19 states (40%) offered either a three semester hours (49%), or a two semester hours (21%) of assessment coursework for pre-service teachers.

*Accuracy and Meaning of Self Report for Pre-Service School Counselors’ Surveys*

Ninety-four percent of responding institutions self reported exceeding assessment standards while teaching pre-service school counselors assessment standards. Four percent of these institutions self reported meeting assessment standards. The remaining institutions self reported below standards while teaching pre-service school counselors
assessment skills. Thus, over 98% of institutions self reported exceeding or meeting assessment standards while teaching pre-service school counselors either in a state or institutionally mandated course.

Twenty four states (73%) reported that an assessment course was a state requirement. Nine states (27%) reported that an assessment course was institutionally mandated. Only for the pre-service school counselor programs did all institutions representing all states report a separate assessment course was required. These courses were either three semester hours (73%), six semester hours (25%) or one semester hour (2%) for pre-service school counselors. Additionally seven states (21%) offered three to ten optional credits of assessment coursework. Finally, sixteen states reported that other required coursework had assessment information embedded within them at varying percentages of time. Thus, given the numbers and percentages listed above it seems logical that pre-service school counselors have ample opportunity to learn and be able to apply their assessment standards as adequately as self reported by institutional representatives. However, a larger sample would better confirm this assumption.

Accuracy and Meaning of Self Report for Pre-Service Principals’ Survey

Ninety-seven percent of responding institutions self reported exceeding assessment standards while teaching pre-service principals. Over two percent of institutions self reported meeting assessment standards. Less than one half of a percent self reported being below standards while teaching pre-service principals assessment standards. Thus, over 99% of institutions self reported exceeding or meeting assessment standards while instructing pre-service principals on assessment standards. However, as the pre-service teachers data indicated, 16 states (57%) reported that assessment
information was not delivered via a state or an institutionally mandated course, but was embedded within other required courses.

Nine states (33%) self reported that an assessment course was state mandated. Three states (10%) self reported that an assessment course was an institutional requirement. Two state (6%) self reported that an optional course existed. When reported as a separate course, seven states (23%) offered three semester hours (88%) and one state (3%) offered six semester hours (12%) of assessment coursework for pre-service principals. Additionally, 16 states (53%) self reported that assessment information was embedded within other required courses at varying percentages of time.


Schafer and Lissitz (1987) study reported that 53% of all pre-service teacher programs required an assessment course. Twenty six percent of all pre-service teacher programs had an assessment course as a state requirement, and 25% had an assessment course as an institutional requirement. This study shows that 64 institutions (44%) representing 19 states (41%) require an assessment course for pre-service teachers. Eleven institutions (8%) representing four states (9%) have an assessment course as a state requirement, and 53 institutions (37%) representing 15 states (32%) have an assessment course as an institutional requirement. Thus, 18 years later, a small percentage decrease exists between Schafer and Lissitz (1987) study (52%) and this 2005 study (44%) in the percentage of institutions that require a separate assessment course for pre-service teachers.

Schafer and Lissitz (1987) study reported that 98% of all pre-service school counselor programs required an assessment course either as a state or institutional
requirement. In their study, 76% of institutions reported that a state requirement existed and 22% of reporting programs had an assessment course as an institutional requirement. This study finds similar results with 100% of all states and institutions reporting either as a state requirement or an institutional requirement an assessment course. Thirty-eight institutions (79%) representing 24 states (73%) reported that an assessment course was state mandated. Ten institutions (21%) representing nine states (27%) reported that an institutional requirement existed for an assessment course. Thus, a slight increase exists between these two studies. Pre-service counselor assessment training still seems to be taken more seriously than pre-service teacher or principal training if only in the number of state or institutionally mandated courses.

Schafer and Lissitz (1987) study reported that 44% of pre-service administrators programs required an assessment course either as a state or institutional requirement. Fifteen percent of institutions reported that a state requirement existed, and 29% of institutions had an assessment course as an institutional requirement. Fifty six percent of institutions did not report an assessment course requirement in their study. This study finds similar results in that 19 institutions (45%) representing 12 states (40%) reported that an assessment course was either state or institutionally mandated. Thirteen institutions (31%) representing nine states (30%) reported that a state requirement existed for an assessment course. Six institutions (14%) representing 3 states (10%) reported that an institutional mandate existed for an assessment course for pre-service principals. Twenty five institutions (60%) representing 16 states (53%) reported that assessment was embedded within other required courses. Finally, three institutions (7%) representing two state (7%) reported that an optional assessment course existed. Thus, very little difference
exists between Schafer and Lissitz (1987) study (44%) and this study (45%) in the percentage of institutions that require an assessment course for pre-service principals. This statistic is surprising considering the supervisory duties associated with the principals, and the changing nature of K-12 education given federal policy.

However, explanations of why so little change occurred between the two studies may be that the number of credits needed to graduate with a pre-service teaching, school counselor or principal certificate might have been at maximum numbers during the late 1980 and states might be reluctant to increase the number of credits to graduation any higher. Even adding another two or three additional credits for an assessment course to these pre-service degrees may not be worth costs for both states and students alike. Given these considerations, K-12 students may pay the highest price for the lack of pre-service assessment training levels for school personnel. Possible remedies to this dilemma might include a well thought out, comprehensive in-service assessment training program developed at the state level for teachers, school counselors and principals, or hiring assessment specialists to provide needed training.
CHAPTER FIVE

SUMMARY AND CONCLUSIONS

This descriptive study investigated pre-service teachers’, school counselors’ and principals’ assessment training requirements within National Council for Accreditation of Teacher Education (NCATE) colleges and universities. Three online surveys were sent to NCATE colleges and universities from 49 states and the District of Columbia. Results from the pre-service teachers’ survey were collected from 46 states and the District of Columbia via 155 institutions. Results for pre-service school counselors’ were collected from 33 states via 71 institutions. Results for the pre-service principals’ survey were collected from 30 states via 66 institutions.

Research Questions

Research question one asked if assessment courses for pre-service school personnel were offered by NCATE institutions. Results from the pre-service teachers’ surveys indicated that 19 states (41%) offered separate assessment courses for pre-service teachers either as a state or an institutional mandate. Further, three states (6%) that did not require an assessment course reported that an optional assessment course existed. Thus, 22 states (47%) offered either a state or institutionally mandated or an optional assessment course for pre-service teachers. The remaining 25 states (53%) did not offer assessment courses for pre-service teachers.

Results from pre-service school counselors’ surveys indicated that 33 states (100%) offered separate assessment courses for pre-service school counselors either as a state or an institutional mandate. Further, four states offered three additional credits of
assessment coursework, one state each offered six, another state offered nine and finally one state offered ten or more credits of additional assessment coursework.

Results from pre-service principals’ surveys indicated that twelve states (40%) offered separate assessment courses for pre-service principals either as a state or an institutional mandate. Further two states offered three additional credits of assessment coursework, and one state offered six credits of additional coursework. Thus, 14 states (47%) offered either a state or institutionally mandated or an optional assessment course for pre-service principals. The remaining 16 states (53%) did not offer assessment courses for pre-service principals.

Overall, 100% of pre-service school counselor programs offered a separate course in assessment, while 49% of pre-service teacher programs and 53% of pre-service principal offered a separate course in assessment.

Research question two asked if assessment courses offered by NCATE institutions are required. Results from the pre-service teachers’ survey indicated that four states (9%) require as a state mandate an assessment course for pre-service teachers. Additionally, 15 states (32%) institutionally mandate an assessment course. Therefore, 19 states (41%) required an assessment course, and the 28 states (59%) do not require an assessment course for pre-service teachers. Results from the pre-service school counselors’ survey indicated that all 33 states surveyed (100%) required as a state or institutional mandate an assessment course. Results from the pre-service principal surveys’ indicated that 12 states (40%) required as a state or institutional mandate an assessment course. Thus, 18 states (69%) do not require an assessment course for pre-service principals. Overall, 100% of surveyed pre-service school counselor programs...
require an assessment course, while 41% of pre-service teachers and 40% of principal programs require an assessment course.

Research question three asked if assessment courses for pre-service school personnel offered by NCATE institutions aligned with existing standards. Results from pre-service teachers’ surveys indicated that over the 14 assessment content areas gleaned from professional assessment standards 95% of the 155 institutions representing 47 states and the District of Columbia exceeded or met these standards. As self reported, NCATE institutions are aligning assessment curriculum with existing professional standards, and exceeding or meeting these standards while instructing pre-service teachers.

Results from pre-service school counselors’ surveys indicated that over the 15 content areas gleaned from professional assessment standards 98% of the 71 institutions representing 33 states exceeded or met these standards. As self reported, NCATE institutions are aligning assessment curriculum with existing professional standards, and exceeding or meeting these standards while instructing pre-service school counselors.

Results from pre-service principals’ surveys indicated that over 14 content areas gleaned from professional assessment standards 99% of the 66 institutions representing 30 states exceeded or met these standards. As self reported, NCATE institutions are aligning assessment curriculum with existing professional standards, and exceeding or meeting these standards while instructing pre-service principals. Overall, within all three pre-service groups NCATE institutions are aligning assessment course with existing professional standards. Given these finding additional conclusions can be drawn.

State mandated assessment courses were not the norm and at best less than half of the states have taken the lead in mandating assessment training as suggested by Trevisan
(2002). However, institutional mandates for assessment coursework were reported when states have not set policy, especially with pre-service teachers and principals. Still, less than half of reporting institutions clearly indicated that assessment coursework was a requirement. These finding closely mirror Stiggins (1999b) finding in that half of the states require an assessment course as part of licensure.

Within states or institutions, mandated assessment course percentages for pre-service school counselors were higher than pre-service teachers, and principals. All pre-service school counselors programs had a state or institutionally mandated assessment course. Given these facts, pre-service school counselor programs seem to have the best training of the three groups. Thus without school with assessment specialists, school counselors may be looked for to provide guidance on assessment related issues.

Pre-service principals training on assessment standards were self reported high across assessment elements, especially given that only 12 states (40%) had such courses either set as a state or institutional mandate. Further, 18 states have an optional course or have assessment embedded within other required coursework. Given their supervisory responsibilities of principals, these states should strongly consider following the lead of the other 12 states, and increasing the role of assessment training for pre-service principals.

Additional Research

Continued research is needed to determine to what extent non reporting states adhere to the three research questions, especially within pre-service school counselor and pre-service principal programs. Additionally, given the high scores on assessment standards training as reported by institutions, investigating if first year school personnel
can confirm these results might deserve attention. Also investigating the content of syllabi might provide insight into the extent of training all three pre-service groups are receiving both within assessment courses and within other required course that address assessment issues.
REFERENCES


APPENDICIES
Appendix A: Consent Letter/Cover Letter

Dear Dr (Department Chair),

My name is Jon W. McKenzie and I am a Ph.D. student at Washington State University. I am conducting a study on the extent and content of assessment training that pre-service teachers, pre-service school counselors, and pre-service principals receive at National Council for Accreditation of Teacher Education (NCATE) colleges and universities. Your participation in this study is greatly appreciated, as it will determine the extent of assessment training that pre-service school personnel are receiving in their preparation courses.

This study has been reviewed and approved by Washington State University (WSU) Institutional Review Board for human subject participation. If you have any questions or concerns regarding the study you can contact me at the contact information given below. If you have any questions or concerns regarding your rights as a participant you can contact WSU Institutional Review Board at (509) 335-9661 or at irb@wsu.edu. The information in this email is provided so that you can decide whether you wish to participate in this study. Your participation is completely voluntary. At any time you are free to withdraw from the study, or decline to participate in any portion of the study without penalty. By completing the survey you are automatically giving consent to use your response in the study.

Three separate surveys exist below. Simply click on the link for each survey, or copy and paste the addresses below. Within the survey you will be asked questions about the number of assessment courses offered to pre-service school personnel and about the content of those course(s). There are no known risks associated with your participation in this study. Your name, position or your college or university's name will not be associated with the findings. However, in order to track responding institutions please type in your institutions full name for the first question. This information is for tracking purposes only. Your participation will take approximately 15 minutes. If you have any questions not addressed by this email, please do not hesitate to contact me.

Thank you for participating in this study.

Pre-Service Teachers http://CTLSilhouette.wsu.edu/surveys/ZS34531&X1=1
Pre-Service Principals http://CTLSilhouette.wsu.edu/surveys/ZS34529&X1=1
Pre-Service Counselors http://CTLSilhouette.wsu.edu/surveys/ZS34435&X1=1

Thank you,

Jon W. McKenzie
Doctoral Candidate
Washington State University
Assessment and Evaluation Center
Cleveland Hall, Room 384
P.O. Box 642136-2136
(509)335-2223
jonm@mail.wsu.edu
Appendix A: Pre-Service Teachers Survey

What is the name of your institution?

1. Does your institution offer a pre-service teaching degree?
   - Yes
   - No (If no, go to end of the survey and submit)

2. Are pre-service teachers required to take an assessment course(s)?
   - Yes and a state requirement.
   - Yes, but not a state requirement.
   - No, but optional assessment course(s) is/are offered
   - No, but assessment is embedded in other required courses.

3. If assessment course(s) is/are required how many credits are mandatory?
   - N/A
   - 1
   - 2
   - 3
   - 4
   - 5
   - 6
   - 7
   - 8
   - 9
3.a. The institution operates on which hour system?
- Semester Hours
- Quarter Hours

4. If assessment course(s) is/are optional how many credits are offered?
- N/A
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10+

5. If assessment information is embedded within other required course(s), how many course(s) is this information embedded within?
- N/A
- 1
- 2
- 3
- 4
- 5+

5.a. Averaging what percentage of classroom time:
- 1-5%
6-10%
11-15%
16-20%
21-25%
More than 25% of classroom

---

*Question 6.*, 6.a., and 6.b. pertain to the instructor teaching the assessment course.

6. The instructor that teaches the assessment course(s) holds which position?
- Full Professor
- Associate Professor
- Assistant Professor
- Adjunct Professor
- Instructor
- Graduate Student

6.b. If full time, how many years of teaching experience?
- 1-3
- 4-6
- 7-10
- 11-14
- 15+

6.c. If a graduate student, how many years of teaching experience?
7. Does the instructor have education or training background in assessment? (Check all that apply)
- Yes, a Ph.D. in assessment
- Substantial assessment training after earning Ph.D.
- Some assessment training after Ph.D.
- Other (please specify)

8. The content of the assessment course(s) at this institution fully addresses pre-service teachers’ understanding the following types of assessment options and assessment information:

<table>
<thead>
<tr>
<th>Assessment Option</th>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selected response assessment</td>
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<tr>
<td>Essay assessment</td>
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<td>Performance assessment</td>
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<tr>
<td>Personal communication assessment</td>
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<tr>
<td>Portfolio assessment</td>
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<tr>
<td>Alternative assessment methods</td>
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<tr>
<td>Skills in choosing the</td>
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</tr>
<tr>
<td>Skills in administering, scoring, and interpreting the results of both externally produced and teacher produced methods</td>
<td>Strongly agree</td>
<td>Somewhat agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
<td>Somewhat disagree</td>
<td>Strongly disagree</td>
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</tr>
<tr>
<td>Skills in using assessment results when making decisions about individual students, planning teaching, developing curriculum and school improvement</td>
<td></td>
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<tr>
<td>Skills in communicating assessment results to students, parents, other lay audiences and other educators</td>
<td></td>
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</tr>
<tr>
<td>Skills in recognizing unethical, illegal, and otherwise inappropriate assessment methods and the use of assessment information</td>
<td></td>
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<tr>
<td>Skills in communicating large-scale assessment results to students, parents, other lay audiences and other educators</td>
<td></td>
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<tr>
<td>Skills in utilizing computerized grade programs</td>
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<tr>
<td>Skills in rubric development</td>
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</tr>
</tbody>
</table>

8.b. Other substantial course content? (list)
9. Your college/university primarily uses the following assessment standards.

☐ The combined standards of the American Federation of Teachers (AFT), National Council of Measurement in Education (NCME), and the National Education Association (NEA).

☐ The Interstate New Teacher Assessment and Support Consortium Standards established by The Council of Chief State School Officers.

☐ Other standards (please specify) ____________________

Thank you very much!
Appendix B: Pre-Service Principal Survey

What is the name of your institution?

1. Does your institution offer a pre-service principal's certificate?
   - Yes
   - No (If no, go to end of the survey and submit)

2. Are principals required to take an assessment course(s)?
   - Yes and a state requirement.
   - Yes, but not a state requirement.
   - No, but optional assessment course(s) is/are offered
   - No, but assessment is embedded in other required courses.

3. If assessment course(s) is/are required how many credits are mandatory?
   - N/A
   - 1
   - 2
   - 3
   - 4
   - 5
   - 6
   - 7
   - 8
   - 9
3.a. The institution operates on which hour system?
   - Semester Hours
   - Quarter Hours

4. If assessment course(s) is/are optional how many credits are offered?
   - N/A
   - 1
   - 2
   - 3
   - 4
   - 5
   - 6
   - 7
   - 8
   - 9
   - 10+

5. If assessment information is embedded within other required course(s), how many course(s) is this information embedded within?
   - N/A
   - 1
   - 2
   - 3
   - 4
   - 5+

5.a. Averaging what percentage of classroom time:
   - 1-5%
Question 6., 6.a., and 6.b. pertain to the instructor teaching the assessment course.

6. The instructor that teaches the assessment course(s) holds which position?
   - Full Professor
   - Associate Professor
   - Assistant Professor
   - Adjunct Professor
   - Instructor
   - Graduate Student

6.b. If full time, how many years of teaching experience?
   - 1-3
   - 4-6
   - 7-10
   - 11-14
   - 15+

6.c. If a graduate student, how many years of teaching experience?
7. Does the instructor have education or training background in assessment? (Check all that apply)
- ☐ Yes, a Ph.D. in assessment
- ☐ Substantial assessment training after earning Ph.D.
- ☐ Some assessment training after Ph.D.
- ☐ Other (please specify)

8. The content of the assessment course(s) at this institution fully addresses pre-service principals’ understanding of the following assessment options and information.

<table>
<thead>
<tr>
<th>Option</th>
<th>Strongly agree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can differentiate between sound and unsound assessments</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Can plan, implement, and interpret a sound assessment program</td>
<td>☐</td>
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<td>☐</td>
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<tr>
<td>Has knowledge of how all assessments within a school fit together</td>
<td>☐</td>
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<td>☐</td>
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<tr>
<td>Has knowledge of unethical and inappropriate use of assessment information</td>
<td>☐</td>
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<td></td>
<td>Strongly agree</td>
<td>Somewhat agree</td>
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<td>Disagree</td>
<td>Somewhat disagree</td>
<td>Strongly disagree</td>
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<tr>
<td>Able to protect students and staff from misuses of assessment</td>
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<td>Able to understand assessment policies and regulations that</td>
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<td>impact sound assessment use</td>
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<td>Able to help teachers integrate assessment information in</td>
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<td>teaching strategies</td>
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<td>Able to evaluate teachers’ classroom assessment competencies</td>
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<td>Able to present to staff developmental experiences that</td>
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<td>contribute to sound assessment at all levels</td>
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<td>Able to use assessment results for building level instructional improvement</td>
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<tr>
<td>Can accurately analyze and interpret assessment information</td>
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<td>Able to implement assessment information</td>
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<td>Able to create conditions for appropriate use of assessment</td>
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<td>information</td>
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<td>Able to communicate with school community members about</td>
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<td>assessment results and their relationship to instruction</td>
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</tbody>
</table>
8.b. Other substantial course content? (list)

9. Your college/university primarily uses the following assessment standards.

☐ American Association of School Administrators (AASA), the National Association of Elementary School Principals (NAESP), the National Association of Secondary School Principals (NASSP), and National Council on Measurement in Education Standards (NCME) standards.

☐ Interstate School Leaders Consortium (ISLLC) standards.

☐ The National Policy Board for Educational Administrators (NPBEA) standards.

☐ Other standards (please specify) ____________________ ?

Thank you very much!
Appendix C: Pre-Service Counselors Survey

What is the name of your institution?

1. Does your institution offer a pre-service school counselor certificate?
   - [ ] Yes
   - [ ] No (If no, go to end of the survey and submit)

2. Are school counselors required to take an assessment course(s)?
   - [ ] Yes and a state requirement.
   - [ ] Yes, but not a state requirement.
   - [ ] No, but optional assessment course(s) is/are offered
   - [ ] No, but assessment is embedded in other required courses.

3. If assessment course(s) is/are required how many credits are mandatory?
   - [ ] N/A
   - [ ] 1
   - [ ] 2
   - [ ] 3
   - [ ] 4
   - [ ] 5
   - [ ] 6
   - [ ] 7
   - [ ] 8
3.a. The institution operates on which hour system?
- Semester Hours
- Quarter Hours

4. If assessment course(s) is/are optional how many credits are offered?
- N/A
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10+

5. If assessment information is embedded within other required course(s), how many course(s) is this information embedded within?
- N/A
- 1
- 2
- 3
- 4
- 5+

5.a. Averaging what percentage of classroom time:
Question 6., 6.a., and 6.b. pertain to the instructor teaching the assessment course.

6. The instructor that teaches the assessment course(s) holds which position?
   - Full Professor
   - Associate Professor
   - Assistant Professor
   - Adjunct Professor
   - Instructor
   - Graduate Student

6.b. If full time, how many years of teaching experience?
   - 1-3
   - 4-6
   - 7-10
   - 11-14
   - 15+
6.c. If a graduate student, how many years of teaching experience?

☐ 1
☐ 2
☐ 3
☐ 4+

7. Does the instructor have education or training background in assessment? (Check all that apply)

☐ Yes, a Ph.D. in assessment
☐ Substantial assessment training after earning Ph.D.
☐ Some assessment training after Ph.D.
☐ Other (please specify)

8. How strongly do you agree that the content of the assessment course(s) at this institution fully addresses school counselors understanding of the following types of assessment options and assessment information.

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test validity</td>
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<tr>
<td>Test reliability</td>
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<tr>
<td>Errors of measurement</td>
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<tr>
<td>Test development and revision</td>
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<td>Test administration, scoring &amp; reporting</td>
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<td>Supporting documentation for</td>
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<tr>
<td>Fairness in testing and test use</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Rights and responsibilities of test takers</td>
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<td>Testing individuals of diverse linguistic backgrounds</td>
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<td>Testing individuals with disabilities</td>
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<td>The responsibilities of test users</td>
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<tr>
<td>Psychological testing and assessment</td>
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<tr>
<td>Educational testing and assessment</td>
<td>☐</td>
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<td>Testing in employment and credentialing</td>
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<td>Testing in program evaluation and public policy</td>
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</tbody>
</table>

8.b. Other substantial course content? (list)

9. Your college/university primarily uses the following assessment standards.

- The Association for Assessment in Counseling (AAC), American School Counselor Association (ASCA), and the National Council on Measurement in Education (NCME) standards
- Council for Accreditation of Counseling and Related Educational Programs standards
- Other standards (please specify) [ ]
Thank you very much!
Appendix E: Consent Letter/Cover Letter

Dear Dr (Department Chair),
My name is Jon McKenzie and I am a Ph.D. student at Washington State University. I am conducting a study on the extent and content of assessment training that pre-service teachers, pre-service school counselors, and pre-service principals receive at National Council for Accreditation of Teacher Education (NCATE) colleges and universities. Your participation in this study is greatly appreciated, as it will determine the extent of assessment training that pre-service school personnel are receiving in their preparation courses.

This study has been reviewed and approved by Washington State University (WSU) Institutional Review Board for human subject participation. If you have any questions or concerns regarding the study you can contact me at the contact information given below. If you have any questions or concerns regarding your rights as a participant you can contact WSU Institutional Review Board at (509) 335-9661 or at irb@wsu.edu. The information in this email is provided so that you can decide whether you wish to participate in this study. Your participation is completely voluntary. At any time you are free to withdraw from the study, or decline to participate in any portion of the study without penalty. By completing the survey you are automatically giving consent to use your response in the study.

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Thank you for participating in this study.

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Pre-Service Counselors http://CTLSilhouette.wsu.edu/surveys/ZS34435&X1=1

Thank you,

Jon W. McKenzie
Doctoral Candidate
Washington State University
Assessment and Evaluation Center
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