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OHIO POST-SECONDARY TECHNICAL AND OCCUPATIONAL EDUCATION INSTRUCTORS' PERCEIVED USE OF STUDENT ASSESSMENT INFORMATION IN MAKING EDUCATIONAL DECISIONS

DISSERTATION

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

By

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* * * * *

The Ohio State University
1997

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ABSTRACT

This descriptive study was designed to describe instructors' use of assessment methods in post-secondary technical and occupational classrooms and laboratories. The study investigated the relationships between use of student assessment information and characteristics of post-secondary technical and occupational instructors in Ohio. The instructor characteristics which served as independent variables in this study were: instructor attitude towards assessment, potential constraints to the assessment process, instructor perceived level of competence in assessment, years of work experience, years of teaching experience, program area, education level, age, and gender.

Data were collected from a random sample of all post-secondary technical and occupational instructors within the State of Ohio. Results indicated instructors tend to use information from paper and pencil tests the most in making instructional decisions. Instructors used information from performance assessments the next most often, which was followed by informal observations. Post-secondary instructors tended to rarely use information from
standardized tests, portfolios, and essay methods. Instructors neither agreed or disagreed that they faced potential constraints while conducting assessment activities. More than four-fifths of the instructors reported a positive attitude towards assessment and more than one-half considered themselves to be very competent in assessment.

Semi-partial multiple regression analyses were used to determine the proportion of variance in the use of each assessment methods that could be explained by a linear combination of statistically significant independent variables. It was found that instructors within the program area of marketing accounted for more than six percent of the variation of using portfolios in making instructional decisions. Two program areas (marketing and business occupations) each accounted for three percent of the variation in the use of essay methods in making instructional decisions. Instructors' attitudes toward assessment was found to explain 11% of the variation in instructors' use of performance assessment and four percent of the variation in instructors' use of portfolios. The perceived competency level of instructors in assessment contributed about three percent of the variation in instructors use of portfolios.
DEDICATION

To my wife Tracy who has joined me in this great adventure called life. Thank you for all of your love, support, and patience that you have given me during this latest adventure. You have been my one constant through this entire process. I appreciate you more than words can express.

To my parents, thank you for your love, prayers and morale support. Thank you for constantly telling me that I could achieve all that I set my mind to achieve. Thank you for never telling me that I couldn’t do something that I really wanted to do and supporting me in all that I tried. You both let me stretch my wings and never did you attempt to clip them.

To Kaleb and McKenna for constantly reminding me of what is really important in life. You both are an inspiration to me.

To the rest of my friends and family who have supported me with their prayers, concerns and friendships. You have been vital in helping me to finish this process.
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I wish to thank all those who have been helpful in providing me with the support and friendship during this entire process. To Dr. McCaslin, my dissertation adviser, I will always be indebted to you for the help and patience you have provided throughout this entire task.

A special thanks to Dr. Wesley Budke for all the assistance you have provided in the different aspects of the dissertation process. To Dr. Joseph Gliem, I extend a special thanks for providing inputs and reactions throughout this procedure.

To all the graduate students that I have had the pleasure of knowing. This experience was made better by the friendships we developed.
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CHAPTER 1

INTRODUCTION

Over the past 15 years there has been an increasing demand on educational institutions to show more accountability for students' learning (Hudgins, 1993). Much of this call for accountability started with the report of A Nation at Risk (National Commission on Excellence in Education, 1983). Many individuals in post-secondary education paid little attention to the debate caused by this report and assumed that this was a problem of K-12 education. The public, however, did not see the separation between post-secondary and K-12 education and looked at this as one educational system (Hudgins, 1993). Because of this lack of separation, there has been an increased interest and sometimes demand for educational institutions to demonstrate greater accountability to indicate how much and what students are learning at all levels of education.
Since the 1970s the public, elected officials, state agencies, and the media have become more interested in education. This interest has been due in part to the achievement of our students, which does not compare well with counterparts in other countries. Although costs have been rising for higher education, student achievement has flattened out and in some cases even declined. Post-secondary institutions have not demonstrated to legislators, or to the public, a strong and obvious correlation between investment and return (Hudgins, 1993). This focus on accountability has only been intensified as the economics of our nation is constantly being debated. In addition, there was the call for the establishment of performance assessment systems in education to meet the accountability needs within and outside educational circles (Jarosik & Phelps, 1992).

Technical and occupational educators argued that performance assessment of students has been a part of their education philosophy for some time (Botts, 1996). Performance measures commonly used by technical educators have been job placement rates. Jarosik and Phelps (1992) pointed out that performance measures and standards should go beyond this premise. Additional assessment information from technical and occupational programs should be used if
prospective students are to make better choices regarding educational alternatives.

Post-secondary institutions have been very eager to do research on every institution in the education process except themselves (Hudgins, 1993). Colleges and universities know how smart their students were when these students arrive on their campuses, but they do not know very much about what they have learned while they were there (Bok, 1992). Because there has been little investigation on how well post-secondary instructors teach or how much their students learn, deciding the effectiveness of their programs has been difficult. This presents a problem when trying to convince the public that education is a top priority of these institutions. Since this focus has not shifted, colleges and universities have continued to be vulnerable to the attacks on their curricula, faculty, tuition, and other issues (Bok, 1992).

Ewell (1990) stated that three problems exist in state assessment policy for post-secondary institutions. The first problem was the inability of local institutional assessment activities to produce summary evidence that higher education has been doing a good job. The second problem was that few colleges were taking assessment seriously and the remainder were doing the minimum. The
final concern was the inability of state and college leaders to clearly see each other's problems.

Statement of the Problem

Additional evidence needs to be provided to indicate that students have more than "seat time" to account for the learning that has taken place in the classroom or laboratory. How technical and occupational instructors use assessment information in the classroom and laboratory and whether its use is effective, can play a major role in enhancing and documenting both instruction and learning. The literature revealed very little about assessment practices and their use by post-secondary instructors. Recent research conducted on the quality and effectiveness of general education instructor training in measurement and assessment has implied that these individuals may not be acquiring the appropriate skills necessary to use assessment skills in an effective manner. If this is true for general education instructors, what are the assessment skills needed by technical and occupational instructors? Information on the assessment skills needed and the use of assessment information by technical and occupational education instructors is not available.
Purpose and Objectives of the Study

The purpose of this study was to describe assessment activities, problems, attitudes, and perceptions of Ohio post-secondary technical and occupational education instructors. The specific objectives of this study were to:

1. Describe Ohio post-secondary technical and occupational education instructors in terms of the following demographic characteristics: age, gender, related work experience, teaching experience, program area taught, and educational level.

2. Describe Ohio post-secondary technical and occupational education instructors' perceptions of the use of student assessment information in making instructional decisions.

3. Describe how Ohio post-secondary technical and occupational education instructors face potential constraints while conducting assessment activities.

4. Describe Ohio post-secondary technical and occupational education instructors' attitudes toward the assessment process.
5. Describe Ohio post-secondary technical and occupational education instructors' perceptions of their level of competence in the assessment process.

6. Examine the relationships between Ohio post-secondary technical and occupational education instructors' use of assessment information and:
   a. selected demographic characteristics,
   b. perceived level of competence in the assessment process,
   c. their attitudes toward assessment, and
   d. constraints to the assessment processes.

7. Determine the proportion of variance in Ohio post-secondary technical and occupational education instructors' perceived use of assessment information in instructional decision-making that can be explained by the independent variables of attitudes toward assessment, competence in the assessment process, constraints to the assessment process, and selected demographic characteristics.

Significance of the Study

The data from this study will contribute to the body of knowledge regarding the assessment practices of post-
secondary technical and occupational instructors in Ohio's technical and occupational education programs. Further, this study will provide information to training institutions, post-secondary administration, and in-service providers for improving Ohio post-secondary technical and occupational instructors' assessment competencies.

The demand to increase accountability is coupled with the need for instructors to improve instruction. To accomplish this, instructors must be able to generate and use information that accurately measures the effectiveness of their instruction and student learning. The more accurately instructors can determine student achievement and performance, the more effective they will be in directing their students' learning (Kershaw, 1993). An increased comprehension of how instructors use assessment information should also help them in making more intelligent decisions in guiding students toward valuable educational outcomes.

**Definition of Terms**

The following terms were identified and defined by Kershaw (1993). This author has made minor additions and deletions to these definitions.

**Assessment:** Bott (1996) defined assessment as a process of collecting data for making a judgement or decision related
to an educational objective. Satterly (1989) defined educational assessment as including "all the processes and products which describe the nature and extent of children's learning, its degree of correspondence with the aims and objectives of teaching and its relationship with the environments which are designed to facilitate learning" (p.3). Examples of student characteristics that are commonly considered in educational assessment include; "achievement, ability, effort, attitude, interest, and personality" (Stiggins, Frisbie, & Griswold, 1989, p. 6).

It is important to note that assessment is more than testing. Assessment may include information from sources other than teacher estimates (Rudman, 1987). Assessment methods would include "teacher observations of non-cognitive behavior as well as academic propensities and achievements" (p.81). For the purpose of this study the term assessment will be defined as the overall process of gathering and using information on student knowledge and skills (Kershaw, 1993).

**Assessment Use:** Use in only one component in the overall process of assessment. Assessment use is when the assessment information is applied to the decision-making process. Use is distinct from other stages of the assessment process which may be identified as the selection, development,
administration, scoring, and interpretation of assessments methods. For the purpose of this study the term assessment use will be defined as the score on each of the six sections in Part 1 of the questionnaire used in this study (Kershaw, 1993).

Assessment Methods: Ways and/or means that were used to collect information on learning and instruction is referred to as assessment methods. The six specific types of assessment methods used in the questionnaire are listed below.

**Essay Items:** This type of assessment method usually involves a written or typed response to questions, problems, or situations. Gronlund (1981) stated that "learning outcomes concerned with the abilities to select, organize, integrate, relate, and evaluate ideas, require the freedom of response and the originality provided by essay questions" (p. 223). Essay items may require either an extended or a restricted response (Kershaw, 1993).

**Objective Paper and Pencil Methods:** "Objective tests are those that can be scored in such a manner that subjective judgement is eliminated when determining the correctness of a student's answer" (Ahmann & Glock, 1981, p. 16). True-false tests, matching tests and
multiple choice tests are objective tests that meet these criteria. Tests that are supplied with curriculum materials are also considered objective tests and would include completion and short answer items. Completion items require that a student identify a few words which would complete an incomplete sentence. Supply type tests are considered objective tests although subjective judgement in grading cannot be eliminated.

In this study, the category of assessment methods included tests, quizzes, and exercises that are generally comprised of multiple choice, true-false, matching, and short answer questions. The items may be either teacher-made or a curriculum embedded items. Curriculum embedded items would include tests, quizzes, or exercises found in instructors guides, curriculum guides, or at the end of textbook chapters (Kershaw, 1993).

**Standardized Test Scores:** "Standardized tests are constructed for the purpose of determining a student's level of performance relative to the performance of other students of similar age and grade" (Kubiszyn & Borich, 1984, p. 282). These tests are administered and scored according to specific and uniform procedures.
(standards). Examples of these tests include ASSET, Adult Basic Skills, American College Testing (ACT) and Scholastic Aptitude Test (SAT). This category covers locally purchased, state-wide or national tests. Tests developed by occupations to evaluate speciality areas are also included in this category. These tests may be either norm referenced or criterion referenced (Stiggins & Conklin, 1992). For the purpose of this study, standardized test scores will be defined as any score on a local, state or national standardized test (Kershaw, 1993).

Performance Assessment: "Performance assessment calls for the observation and rating of student behavior and requires that students actually demonstrate proficiency" (Stiggins & Bridgeford, 1986, p. 471).

Stiggins and Bridgeford (1986) have identified three important characteristics for performance assessments: (1) students are called upon to apply the skills and knowledge they have learned, (2) specific task(s) are completed in real or simulated assessment exercises, and (3) the assessment task or product is observed and treated with respect to specified criteria and following specified procedures. These are planned activities in which the instructor observes students
doing a task or in which they examine products created by students. These assessment methods would have pre-specified purposes, exercises, observations and scoring procedures. Examples of performance assessment may include individual projects, group projects, oral presentations, and experiments. For the purpose of this study, performance assessment was a planned activity in which a student was observed in doing things or for which products may be created by a student or students. This assessment would have pre-specified purposes, exercised, observations and scoring procedures.

**Informal Observations:** Informal measures require teachers to infer about students' affective traits based on observations of and judgements about their students' behavior (Stiggins & Conklin, 1992). This assessment method entails the observation of spontaneous classroom and laboratory events which give teachers an informal opportunity to judge student performance (Kershaw, 1993). An example is when an observation of routine lab activities may find students trying to work cooperatively, using tools in a skilled and safe manner, or involved in solving a particular difficult problem. These methods are used in a
spontaneous way within naturally occurring classroom or laboratory events. For the purpose of this study informal measures were defined as methods used in an unplanned way within naturally occurring classroom or laboratory events (Kershaw, 1993).

**Portfolio:** Portfolio assessment, as defined by Vavrus (1990) is a systematic and organized collection of evidence used by the teacher and student to monitor growth of the student's knowledge, skills, and attitudes in a specific subject area. This collection of a student's work reflects their achievement over a period of time. A portfolio contains documentation of not only the products generated by the student, but also the processes involved. Items that may be included in a portfolio are drawings, written documents, tests, notes, photographs, or comments from students, teachers, and peers. For the purpose of this study, portfolios were defined as a collection of student work which reflects student achievement over time (Kershaw, 1993).

**Attitude Towards the Assessment Process:** For this study the attitude toward the assessment process was the feelings or emotions the instructor had toward the assessment process.
Constraints in the Assessment Process: For this study the constraints in the assessment process were described as any items that hindered the process of student assessment.

Educational Level: The highest level of education which an individual had achieved at the time of the study was referred to as educational level. The levels of education used for this study were: (1) high school or its equivalent, (2) some college, (3) associate degree, (4) technical school, (5) bachelor degree, (6) some graduate work, (7) masters degree, (8) doctorate, and (9) other.

Evaluation: Worthen and Sanders (1987) defined evaluation, in an educational context, as "the formal determination of the quality, effectiveness, or value of a program, product, project, process, objective, or curriculum" (p. 22). Evaluation is a broader concept than the assessment process. Assessment can be viewed as a component within the overall evaluation process. Hopkins and Antes (1985) stated that the "appraisal of program effectiveness and student assessment are evaluative procedures" (p. 5). For the purpose of this study evaluation at the classroom level was defined as an assessment process involving the use of test data and other information collected by non-testing procedures to judge how well individual students met objectives (Kershaw, 1993).
Level of Competence: "Competence levels and qualities are dependent upon situations and contexts" (Wiggins, 1993, p. 231). For this study the level of competence was assessed by the individual instructor. Each instructor used the peers at their college or institution for comparison.

Measurement: "Educational measurement is concerned with quantifying those personal characteristics which are important to students and educators as they deal with the process of education" (Hopkins & Antes, 1979, p. 5). Measurement is a process for collecting data on which evaluative judgements will be made. Worthen and Sanders (1987) viewed measurement as a tool in the evaluation process and not evaluation in itself. For the purpose of this study measurement was defined as the process which quantifies the attribute that was of concern and for which a judgement will be made (Kershaw, 1993).

Related Work Experience: The prior amount of non-teaching work experience an instructor had which was associated with the subject area they taught.

Teaching Experience: Teaching experience was defined as the total amount of years that an individual had in the profession of teaching within a public or private institution.
Technical and Occupational Instructors: Individuals who teach within technical and occupational programs.

Technical and Occupational Programs: Post-secondary educational programs which prepares students to acquire entry-level knowledge and skills in various program areas. The program areas used in this study were: (1) agriculture, (2) business occupations, (3) marketing, (4) family and consumer sciences, (5) trade and industrial, (6) health occupations, (7) engineering, (8) human services, and (9) other.

Test: Hopkins and Antes (1985) defined test as "an instrument, device or procedure that proposes a sequence of tasks to which a student is to respond -- the results of which are used as measures of a specified trait" (p. 102). Tests encompass a wide range of formal assessment measures, including commercially produced norm- and criterion-referenced measures; tests of minimal competency, and district-, school-, and teacher-constructed tests (Dorr-Bremme, 1983). For the purpose of this study, test was defined as any means by which students responded to demonstrate and measure their knowledge, skill or ability to a certain task or trait (Kershaw, 1993).

Testing: This term refers to both formal and informal testing procedures. Though many people look at assessment
and testing as the same, they are not. Testing is only a part of the total assessment process and is used to generate data on specific student characteristics. For the purpose of this study testing was defined "as a measurement process which utilizes an instrument (test) as a measuring device" (Kershaw, 1993, p.16).

**Limitations of the Study**

The researcher has identified the following limitation for this study:

1. The responses given by the respondents regarding their perceptions may have been influenced by variables not included in this study.

2. The results and conclusions of this study can only be generalized to the post-secondary technical and occupational instructors in the State of Ohio.

**Basic Assumptions**

The research has identified the following assumptions concerning this research:

1. Classroom and laboratory assessment is an integral component of instruction.
2. Instructor perceptions of their use of assessment information can be adequately measured through a self reporting technique.

In the following chapter a review of literature related to the use of student assessment information in decision-making is presented. The methodological processes used in conducting the study are presented in Chapter 3 with the research findings presented in Chapter 4. Chapter 5 contains the conclusions of the study with recommendations for practice and further study.
CHAPTER 2

REVIEW OF LITERATURE

This chapter will summarize the research that has been conducted on the use of student assessment in making educational decisions. First, the role that assessment plays in the teaching-learning process will be presented. Next, the types of instructional decisions made by teachers will be demonstrated and how the use of assessment methods influence this decision-making process. In addition, the attitudes that teachers have toward assessment, the perceived constraints teachers face in the assessment process, their perceived competence in the assessment process, and teacher characteristics will be presented along with how these variables affect the use of assessment information. The chapter will conclude with a conceptual framework for the study.
The Role of Assessment

Angelo and Cross (1993) stated that "learning can and often does take place without the benefit of teaching—and sometimes in spite of it— but there is no such thing as effective teaching in the absence of learning" (p.3). It is important to recognize the connection between assessment and instruction in order to understand the role that assessment activities play in enhancing instructional efforts of teachers and the students efforts at learning (Kershaw, 1992). Hedges and Axelrod (1995) stated that "good assessment reflects the curriculum and training that students receive" (p.4). Such assessment information has different uses. Angelo and Cross (1993) indicated student assessment information is primarily used to determine how much the students have learned and how college instructors can adjust their teaching to enable the students to learn the material more efficiently and effectively. Rudman (1987) asserted that teachers should have a rational approach in making instructional decisions. He further stated that the use of student assessment data will aid in making more rational and less intuitive decisions. The American Federation of Teachers, National Council on Measurement in Education, and National Education Association (1990) emphasized that student assessment is an important
part of teaching and quality teaching cannot exist without good student assessment. Rudman (1987) pointed out that a problem many teachers face today is that they separate assessment from teaching. He further wrote that "unless the two are linked, one could conceivably "over-test" with the administration of only one formal examination if the information is never used by the teacher" (p.75).

Gronlund (1985) stated that student assessment is an integral part of the teaching-learning process. He further broke the teaching-learning process down into five steps: (a) preparing instructional objectives in terms of desired learning outcomes; (b) preassessing the learners' needs; (c) providing relevant instruction; (d) evaluating intended outcomes; and (e) using the evaluation results. This process consisted of a continuous and interrelated series of instructional decisions which impact student learning, either positively or negatively. Gronlund believed the effectiveness of the instruction was mostly dependent on the quality of the student evaluation information for which these decisions were based.

Hall, Carroll, and Comer (1988) suggested that patterns of tests used among teachers were related to the instructional practices they used. These researchers implied that teachers' testing behavior was integrated with
or complementary to other classroom strategies that each individual teacher adopted to enhance student learning. Milton (1982) believed that classroom assessment was a powerful teaching tool and that improved classroom assessment would reinforce and strengthen the content that is being taught. Milton concluded that "although many facets of instruction have received research attention, tests as important teaching-learning endeavors have been slighted" (p. 1). Milton (1982) indicated that students were also aware of the influence that testing has on the learning process. This, in fact, was where he coined the title of his book "Will that be on the final?." Students who ask the question whether or not certain material would be on the final and receive a "yes" response tended to put more weight on the material at question. If the response is "no" then these same students tended to put less emphasis on the material.

There has been little evidence that indicated teachers use their own tailor made test to identify key areas upon which to build learning experiences (Rudman, 1987). Rudman stated, that for the most part, testing has been used at the end of the educational process instead of throughout this process. Furthermore, Rudman noted the lack of a body of data to either support or contradict the existence of a
linkage between the testing and teaching function. However, he did emphasize the need to link assessment with teaching and to make instructional decisions more rational and less intuitive. This is in contrast to the research that has been conducted in this area. This research has dealt more with the interests of scholars and measurement specialists rather than with the concerns or perceptions of teachers (Stiggins and Bridgefords, 1985).

Guerin and Maier (1983) stated that “most classroom decisions are made without a conscious effort, but are nonetheless the result of informally gathered information” (p.11). They further stated that assessment occurs at different intervals during the process of instruction. Guerin and Maier identified each of these steps and outlined an instructional model that included the following components: (a) establish goals and objectives, (b) select instructional strategies, (c) implement instructional program, (d) monitor progress, and (e) evaluate and report outcomes. They proposed that student assessment data should first be used to establish goals and objectives and then to select the appropriate instructional methods. Monitoring instruction was an assessment activity that was ongoing with teaching. The final evaluation of instruction occurs when
the students were assessed and this information was used to determine the effectiveness of the instruction.

There are many educational institutions that were not pleased with assessment reform (Rothman, 1995). Rothman further stated that change was usually unsettling, particularly in schools where supporters already think of themselves as successful. This was evident where new assessment systems that schools and states have implemented have ignited particularly outspoken challenges. Rothman stated that there were a variety of reasons for this reaction. The first being reform efforts were intentionally designed to make known what in most schools was unknown, which was the expectations for student learning. Rothman also stated that schools seldom assert what they want students to know and be able to do when they exit their institutions, rather they only indicate what they want teachers to teach. When there are preset standards, the public and students know up front what is expected of the student. Another reason for the debate over standards and assessment is this raises the question of the effectiveness of the current teaching and learning process. Rothman chose these words,

In place of the traditional model—in which the teacher imparts knowledge to students, who generally sit in rows and work alone at their desks—the reformers envision classrooms in which students work in groups
and take responsibility for their own learning, with the teacher serving more as a coach to help them along. (p.6)

Types of Instructional Decisions

Educational decisions that are addressed with educational assessment information are broad and diverse (Kershaw, 1993). Information gleaned from classroom assessment activities can be used in decisions at the student, teacher, school, community, state and national level. Satterly (1989) indicated that the overall goal of educational assessment is to provide information that can be used for decision-making.

How are teachers using the results from their classroom assessment activities? The American Federation of Teachers, National Council on Measurement in Education, and National Education Association (1990) assembled a list of assessment competencies which exhibit skills and knowledge that are critical to a teacher's role as an educator. These competencies encompass the teacher's professional responsibilities for student assessment activities which occur after instruction:

1. Describe the extent to which each pupil has attained both short- and long-term instructional goals.
2. Communicate strengths and weaknesses based on assessment results to students, and parents or guardians.
3. Record and report assessment results for school-level analysis, evaluation, and decision-making.
4. Analyze assessment information gathered before and during instruction to understand each student's progress to date and to inform future instructional planning.
5. Evaluate the effectiveness of instruction.
6. Evaluation of the effectiveness of the curriculum and materials in use. (p.2)

Some researchers have categorized classroom decisions which use assessment information. Ahmann and Glock (1981) arranged classroom decisions that use assessment information into three broad areas: (a) appraisal of the academic achievement of individual students; (b) diagnosis of learning difficulties of an individual student or an entire class; and (c) appraisal of educational effectiveness of a curriculum, instructional materials and procedures, and organizational arrangements. Guerin and Maier (1983) identified applications for student assessment information to make decisions about the instructional process, which included: (a) establishing goals and objectives, (b) selecting instructional strategies, (c) implementing instructional programs, (d) monitoring student progress toward goal attainment, and (e) evaluating and reporting outcomes.

Testing has effects on different aspects of students' lives other than their progress through the educational process. Kirkland (1971) in reviewing multiple studies
reported the effects of tests on students' self-concept, motivation, level of aspiration, study practices, and anxiety level. A study conducted by Green and Stager (1986) was designed to measure the attitudes of teachers towards testing and appropriate use of tests. The instrument developed by these researchers consisted of five subscales; standardized test effects, standardized tests results-use, value of classroom tests, fairness of classroom tests, and effectiveness of classroom tests. They concluded that teachers viewed classroom tests as effective methods for: (a) motivating students, (b) directing learning, (c) identifying problems, and (d) communicating with parents. In addition, Green and Stager considered classroom assessment methods to be valuable tools in measuring students' knowledge and progress, as well as the effectiveness of instruction.

Hansen (1989) concluded that teachers have a strong preference for classroom assessment activities. In this study, teachers were asked to rank the importance of assessment activities. The results were: performance assessments were first, oral questioning strategies were second, teacher-made tests were third and classroom assignments were fourth. Information generated from these assessment activities allowed the teachers to determine
whether a student had learned what was being taught in class. After this determination had been made, teachers know whether or not students are ready to progress to the next unit or level of the subject being taught. This assessment information was also used by teachers for determining grades.

Dorr-Bremme and Herman (1986) reported that the results of tests and other assessment activities can be and are used for many different purposes by teachers. Assessment results served the functions that are most central to the daily routines of teachers. The following purposes were most frequently cited by teachers: (a) deciding what to teach, (b) deciding how to teach to students of different achievement levels, (c) keeping track of how students are progressing, (d) determining how to adjust their teaching, and (e) evaluating and grading students’ performance. Teachers used assessment results less frequently in deciding whether to refer students who are needing special instruction, or for the counseling, advising and directing of students. Even though the teachers deemed these last activities as important teaching responsibilities, they believe that these decisions should be based several assessment results. Dorr-Bremme and Herman emphasized that teachers rarely make instructional decisions based on one
type of assessment activity. In their study they found that a number of teachers tended to routinely consult several types of assessment results in reaching an educational decision.

Dorr-Bremme and Herman (1986) reported that assessment results provided information that was considered useful to principals for making institutional decisions. Information generated from assessment methods may influence administrative decisions in several ways. It was considered useful in: (a) planning curriculum, (b) communicating with parents on student progress, and (c) reporting to school district administrators. It should also be noted that principals tended to rate the results of teachers' classroom testing as more crucial than the results of any other type of paper-and-pencil measure. Teachers' opinions, judgments and recommendations carried more weight than any type of test results for the principals they surveyed.

Assessment results influenced teachers' initial educational planning efforts, placement of students to learning groups, and counted heavily in calculating students' grades (Dorr-Bremme & Herman, 1986). "The various teacher designed strategies of achievement assessment cumulatively shape students' learning environment, academic
Newman and Stallings (1982) concluded that teachers use teacher-made tests extensively. They further noted that teachers spend a considerable amount of time constructing, administering, scoring, and interpreting the results of these tests. They determined that the three most popular uses for information from teacher-made assessment methods were: diagnosing strengths and weaknesses; assessing academic achievement; and assessing mastery of instructional units. Other popular reasons cited by teachers for teacher-made test were; assessing student growth, assigning grades to students, and planning for educational instruction.

Hall, Villeme and Phillippy (1985) investigated how beginning teachers assigned weights to the results of different assessment methods in making important educational decisions. The results of their research suggested that beginning teachers used student assessment results to: provide evidence of student academic progress, promote and retain students, promote student self-evaluation, motivate student learning, diagnose student weaknesses, determine the adequacy of teaching, and judge the adequacy of instructional materials. These beginning teachers
considered teacher-made tests most important for student self-evaluation and motivating students to learn.

There have been a variety of ways to classify the uses for assessment information depending upon the instructional model used and the organizational framework that one chooses to use. Gronlund (1981) contended that "within any decision area there are numerous sub-questions to be answered as well as functional overlap among the various areas, and a wide array of different types of evaluation data might be useful in any particular situation" (p.5). In the following section, the nine uses of assessment data which were used in this study will be addressed.

Specific Instructional Decisions Used in the Study

Kubiszyn and Borich (1984) defined instructional decisions as the nuts-and-bolts types of decisions made by teachers. They further stated that instructional decisions made at a lower level often affect the decisions made at higher levels. The following decision areas, gleaned from the literature, were considered to be representative of the general types of instructional decisions made by classroom teachers: (a) planning for instruction, (b) diagnosing student weaknesses, (c) monitoring student progress towards course objectives, (d) motivating students to learn, (e)
evaluating effectiveness of instruction, (f) evaluating instructional materials, (g) encouraging students to assess their own work, (h) assigning grades, and (i) grouping students for instructional activities. The following section will provide support for their selection and inclusion.

Planning for Instruction

A number of instructional strategies are considered by teachers before selecting the particular teaching method or instructional material that they believe will aid the student in attaining some preset goal (Yeh, 1980). Yeh (1980) further stated that teachers gather student assessment information so that they are better able to match instruction to the needs of students. Gronlund (1985) stated that student assessment is for the primary purpose of improving learning and instruction, and that all other uses of this information are secondary. Gronlund (1981), in an earlier book, stated that assessment information should be used by teachers for constantly making changes in instructional practices to better meet the needs of their students.

Teachers may not put a lot of faith in the use of testing in helping them to plan learning activities (Shulman, 1980). Shulman further stated that teachers do
not focus on outcomes, objectives, or goals, rather they
tend to focus on activities more than content. Their
attention was usually more focused on what the class would
do and what will be covered rather than on the preset
outcomes (Kershaw, 1993). Teachers planning for instruction
considered more than the student reaching the expected
outcomes. They also planned for student involvement, pacing
and grouping (Shulman, 1980).

Satterly (1981) believed that knowledge generated from
student performance provides information which may help in
improving instruction. Satterly (1989) stated "Where
teachers are clear as to the aims and objectives of
instruction and are able to state in advance the criteria by
which children may be said to have attained those
objectives, assessment is not seen as a time wasting
appendage to classroom practice, but as an integral part of
planning of effective instruction" (p.4). Satterly also
stated that "assessment potentially equips teachers to
define and teach for objectives which are suitably poised
for the abilities and aptitudes of the pupils in question"
(p.5). Gronlund (1981) believed that plans for student
assessment should ideally be made at the same time that
instructional plans are formulated.
Gronlund (1981) stated "the evaluation instruments used in classroom instruction do more than anything else to convey instructional intent to pupils" (p.485). When students know that some item is going to be on the test, they tend to study that area more (Milton, 1982). When teachers share instructional objectives with their students they help to clarify the learning process. Gronlund (1981) further implied that there will be little influence on learning if the evaluation instrument does not reflect instructional objectives. Gronlund emphasized that the results of research is conflicting about whether sharing the learning objectives with the students is helpful or not to the learning process. He further stated that when students know what to study, they tend to concentrate in that area and overlook the more complex areas of understanding, application and interpretation.

**Diagnosing Student Weaknesses**

Determining student deficiencies is an important aspect of assessment. Ahmann and Glock (1981) compared a teacher to a master gardener with the analogy that when a gardener has plants that do not grow well, there is a reason. They begin to ask themselves what the different reasons are for this lack of plant growth. Teachers are much the same when they have a student that is not learning. They begin to ask
themselves questions regarding what might be the reasons. Assessment directed towards diagnosis had two major purposes (Ahmann & Glock, 1981). These purposes were to place students when beginning instruction and to determine the causes of students' learning difficulties. Satterly (1989) indicated that assessment designed to reveal students' strength and weaknesses strives to identify learning needs and from which remedial strategy can be determined. Ahmann and Glock (1981) stated that the goal behind assessment for diagnosis purposes is to determine the best viable instructional situation for students in terms of their present learning condition. Teachers should use both classroom and standardized assessment results more in making diagnostic decisions (Kershaw, 1993).

The diagnostic use of assessment requires information about the specific difficulties and deficiencies that student have in learning during instruction (Hopkins & Antes, 1985). Hopkins and Antes indicated that teachers should identify those learning difficulties that are specific to the learner so that direction may be given to the decisions about needed remediation. 

**Monitoring Student Progress Toward Course Objectives**

One of the purposes for using tests and other assessment tools during the instructional process has been
to monitor student progress toward course objectives (Gronlund, 1981). When the assessment is ongoing throughout the educational process it is called formative assessment. The formative use of assessment instruments provides continual feedback to both the student and teacher pertaining to the successes and/or failures of the learning process. With periodic assessment, teachers are provided with the necessary information to allow them to adjust their instructional activities to better meet their students’ needs. Gronlund (1981) stated that formative evaluation measures tend to be teacher-made and include written mastery tests as well as observational techniques.

Rudman (1987) stated that assessment activities in the past have had tended to focus on summative rather than formative uses. With summative assessment, neither the teacher or student have the information available to them so that they make some type of adjustments in their teaching or learning style. Rudman felt that teachers that used formative assessment do not use it as a whole and he stated that "there is little evidence to indicate that teachers use their own tailor-made test analytically to identify key factors upon which to build learning experience" (p.74).

Hopkins and Antes (1985) indicated that formative evaluation is conducted over small bodies of content or a
specific skill. Whereas, summative evaluation tends to be over larger quantities of materials or a variety of skills. They further emphasized that formative evaluation help to determine if specific objectives are being met. Summative evaluation rarely focuses on one objective, but rather a number of objectives. A formative assessment instrument identifies where instruction has been successful, learning has been accomplished, and if the intended outcomes were met. Decisions about further instruction can be based on information from preceding instructional activities.

Communicating Student Achievement

Duvall (1994) indicated that feedback is an important aspect of the assessment process. Duvall further stated that students should know that the information gathered during the assessment process was used as a tool for improvement and not to punish. Students are also motivated from this feedback of information because they feel that they are a part of the assessment process. Blanchard (1983) stated that feedback of result was the number one motivator of people. Students want to know that the time they have invested in their studies has made a difference (Duvall, 1994). Kirkland (1971) in a review of literature consistency found that feedback provided from test results promoted learning, as long as students made an attempt to do
well. Natriello and Dornbusch (1984) suggested that students should receive frequent and challenging assessments. Their rationale behind these periodical assessments were that students would also be receiving feedback on a regular basis. Feedback that focuses the students' attention upon their achievement of educational objectives will enhance self-efficacy, encourage effort and reduce attention to social comparisons (Crooks, 1988).

Satterly (1989) stated that all learners require some type of indication that verifies if they are on the right track or provide corrective information if they are not. Results from assessment methods provide teachers with feedback regarding what students have or have not learned. These same methods, once marked and returned to the students, provide them with feedback about their strengths and weaknesses (Linn, 1983). Linn did emphasize that a test score by itself does little to identify the nature of a problem. He further stated that much more specific information should be provided when a test has been returned with marks and comments which may include recommendations for corrective action.

Gagne (1985) implied that the utility of feedback during the achievement of newly learned skills should not be overlooked. He further stated that when topics were being
learned, feedback for the correct accomplishment of each subsections could be of considerable value in increasing the efficiency of learning. Angelo and Cross (1993) stated that teachers could have a positive impact upon students by letting them know what the assessment results were, how these results were interpreted, and what the teacher intends to do with these results.

**Motivating Students to Learn**

Crooks (1988) stated that there has been too much emphasis placed on the grading function of classroom assessment activities and too little on its impact in assisting students to learn. Natriello and Dornbusch (1984) suggested that evaluation of student performance by teachers is the primary mechanism for encouraging student effort on school tasks. They identified six conditions believed to be necessary to insure the appropriate amount of student effort on school tasks:

1. The school organization must distribute a set of rewards and penalties perceived by students as important or central in their lives.
2. These rewards and penalties must be connected to the evaluation students receive.
3. Students must see a connection between their effort on school tasks and the evaluation they receive.
4. Evaluations for performance must be at approximately the same level as the evaluations received for similar performances by other students (reliable evaluation).
5. Students must be exposed to an appropriate reference standard for performance.
6. Students must receive evaluations that are sufficiently frequent and challenging to direct their efforts on school tasks. (p.5)

Evaluating Effectiveness of Instruction

The student is the main focus for assessment, yet the instructional program deserves an equal amount of attention (Kershaw, 1993). "When learning does not occur, it is just as appropriate to question instructional procedures as it is to examine student performance" (Guerin & Maier, 1983, p.20). Lien (1980) stated that one of the purposes for assessment activities is to help evaluate educational methods and procedures. Lien further indicated that this purpose was commonly overlooked. Guerin and Maier (1983) stated that weaknesses in teaching methods and classroom management could be difficult to detect. They suggested that teachers systematically check the stated objectives, teaching methods, and materials which may reveal the source of student problems and lead to improved instruction.

"Teachers appear not to evaluate their day to day activity in terms of general assessments of achieved outcomes, but rather attend to variations in student involvement" (Shulman, 1980, p.70.). An example that Shulman gave was when teachers were asked what they achieved in class they commonly respond that so many pages of subject matter were covered and that the students were involved.
Bott (1996) stated that assessment should be used as a basis for improving instruction. He further stated that teachers should be critical of their teaching efforts and listed the following questions that could aid teachers in this critique:

1. Who is achieving as well as I had hoped?
2. In what ways can they be encouraged to make even greater progress?
3. Who is having trouble?
4. Where are they having trouble?
5. Why are they having trouble?
6. What method(s) of teaching can I use that might aid in improvement?
7. How can these method(s) best be carried out?

Evaluating Instructional Materials

Gronlund (1981) emphasized that it is important to recognize the linkage between use of curriculum materials, instructional objectives, and assessment practices. Curriculum materials were based on stated objectives and then validated through assessment procedures. This procedure has provided assurance to the teacher that the evaluation of student learning will be directly related to the objectives of the unit. Gronlund emphasized that during the early stages of curriculum development or use, assessment data provides information to teachers so that they may determine the effectiveness of curriculum material and identify areas where revisions may be needed.
Beginning teachers were found to have a greater willingness to use assessment results in making a determination about the adequacy of their instruction rather than drawing inferences of the adequacy of the instructional materials they use (Hall, Villeme, & Phillippy, 1985). They further concluded, that perhaps beginning teachers accepted greater accountability for their own teaching action than for the material with which they work.

Grouping Students for Instructional Activities

Stiggins and Bridgeford (1986) stated that the selective grouping of students to maximize learning from instructional activities is a common practice used by teachers. The achievement aspects of students within groups has the potential to affect all instructional activities. These activities include: (a) the analysis of instructional goals, (b) lesson development, (c) selection of resource materials, (d) delivery of instruction, (e) writing of test items, and (f) interpreting test performance (Carey, 1988).

Encouraging Student Self-Assessment

Gronlund (1981) stated that judgements and reports made by students themselves is valuable in many areas of learning and development. There are some areas of the student learning process that the teacher's evaluation of student learning is inadequate unless this is supplemented and
complemented with the evaluation of students. "A complete picture of a pupil's adjustments, interests, and attitudes cannot be obtained without a report from the pupil" (p.456). Self-reports provide valuable information as to how students perceive themselves and how they want to be perceived by others. In addition, self-report techniques can be used to obtain information that is usually inaccessible by other means. This includes student interest, attitude, and personal feelings. Gronlund recommended several self-report techniques for student use: (a) self-tests, (b) rating scales, (c) interest inventories, and (d) personality measures.

Hedges and Axelrod (1995) indicated that the student self-assessment is necessary in all types of education. They further stated that students cannot always be dependent upon the teacher, or other persons, for assessment. Self-assessment skills are traits that will be a powerful tool for students in the future.

Angelo and Cross (1993) stated that student self-assessment is a technique that can be used to assess students' learning styles or preferred ways of learning. With the information provided by students, an instructor can determine what instructional methods may be best suited for students. This technique needs to be used early in the
academic year or semester so that students may benefit fully from it (Angelo & Cross, 1993).

Slapar (personal communication, August 29, 1996) stated that teachers in technical education have yet to realize how videos could be used more for student self-assessment. He further stated that videos have been used as a means for self-assessment in the field of physical education for some time now. This technique for student self-assessment has been used little in the field of technical education.

Assigning Grades

"Test results are a major variable in determining whether a student enters a program, passes a course, is allowed to go to a higher level or leaves a program" (Green & Stager, 1986, p.144). Turner, in Rothman (1995), explains, "No single indicator provides the entire picture of a child's performance. They're like bathing suits: They're revealing in what they show, but what's crucial is what they hide" (p.9). Teachers tend to agree that tests should not be the sole basis for grades, yet many teachers indicated that tests do provide the primary basis for student grades in their classrooms (Angelo & Cross, 1993). This was supported by the conclusion reached by Gullickson (1984), who stated that teachers agreed that tests should not serve as the only means for the ultimate judgement of
student progress—grades. Bott (1996) further emphasized this point and stated that test should serve as an objective basis for grades, yet these test scores should not be the sole basis for grades.

Even though instructors may use accurate assessment information in determining grades this can be offset by other things which are considered in calculating grades. Sometimes the assessment information which is used in determining grades has little to do with student achievement. Student grades are often reduced because of tardiness, failure to bring material to class, excessive absence from class, work turned in late, and cheating (Hills, 1991).

Use of Assessment Methods in Decision-Making

Prior to the 1980s, the focus of research in assessment was not focused on the classroom, but rather upon the area of standardized forms of assessment (Stiggins & Bridgeford, 1985). Teacher-developed assessments have not been examined in depth. Stiggins and Conklin (1992) stated that although we were in an outstanding position to construct and administer high-quality, large-scale testing programs in the early 1980s, we were far less able to teach teachers how to address the task demands of the day-to-day measurement of student achievement. (p.11)
They further stated that assessment and measurement is an integral part of the classroom environment and far more than just an outcome variable. According to Lazar-Morrison, Polin, Moy, and Burry (1980) little was known about the kinds of assessment activities which provided teachers with the information needed to support their judgements on student performance. "In the literature, teacher-made assessments, curriculum embedded tests, and district constructed tests have been inspected much less closely than the more formal measures" (p.7). They further suggested that there was an enormous need to study other types of assessment to determine how they serve teachers.

Teacher's ability to conduct a variety of assessment practices should produce a rich source of data to be used in the decision-making process (Shulman, 1980). It was recommended that ways be sought to help teachers document, in a more calibrated manner, the observations which they make so frequently in the classroom. Shulman (1980) made reference to the assessment practices of a physician in emphasizing the range of activities that a teacher could be expected to perform.

The physician uses observation, interview, touching and feeling, as well as testing, and develops an assessment and a plan by aggregating across those sources of information rather than by giving almost total weight to any one source and subordinating the others to it. (p.69)
Six general categories of classroom assessment methods were identified from the review of literature, as representing the various individual assessment instruments or procedures which teachers use to create information for decision-making. The groups of assessment methods were referred to as: (a) objective paper and pencil items, (b) standardized test scores, (c) performance assessments, (d) informal observations, (e) essay type items, and (f) portfolios.

The Center for the Study of Evaluation's Test Use in Schools Project generated national data on classroom achievement assessment (Dorr-Bremme, 1983). This study investigated the kinds of tests teachers administer in their classrooms, the kinds of information teachers need from tests to make decisions about their students, and how teachers use this information to make decisions. Teachers reported that for the initial grouping or placing of students in a curriculum, changing students from one group to another, and assigning grades, teachers used their own observations, students' classwork, and teacher developed tests as crucial or important sources of information. Standardized test results were rarely found to be important in deciding on student grades, but were considered more often for the beginning of the year planning and assignment
of students to instructional groups (Dorr-Bremme, 1983; Dorr-Bremme & Herman, 1986).

Dorr-Bremme (1983) stated that if testing programs were to be useful for teachers, they must take into account the teacher's routine thinking and practices in assessing student achievement. This study found that the types of assessment that teachers rely upon most heavily have three common characteristics:

1. Immediate accessibility: teachers can give them when they choose and see the results promptly.
2. Proximity between their intended purposes and teachers' practical activities.
3. Consonance, from teachers perspectives, between the content they cover and the content taught. (p.5)

In addition, Dorr-Bremme (1983) indicated that teachers perceived their use of assessment techniques as accurate measures of the instruction they had provided.

In a further analysis of the national survey, Dorr-Bremme and Herman (1986) made additional comments concerning teachers assessment practices. They reaffirmed that teachers place less emphasis on formal test results than they do upon information they gather themselves. Yet, teachers had rated formal test scores as somewhat important. Teachers tended not to rely on only one type of assessment in making instructional decisions. "Not only do a good number of teachers routinely consult several types of assessment results in reaching each decision listed, they
consider many as equally crucial or important" (p. 38). Teachers placed more emphasis on the tests they constructed themselves, their own observations of students' classroom work or performance, and their own judgements in making educational decisions (Dorr-Bremme & Herman, 1986).

Instructional circumstances tended not to influence teachers' use of external test results. Dorr-Bremme and Herman (1986) stated that "external test results become more important to teachers only when something or someone impels or induces teachers to treat them as more important" (p. 96).

In reference to informal observation types of assessment activities, Guerin and Maier (1983) stated that teachers notice first the dominant details of a student's behavior that are readily observable and these can be easily recalled to memory. They also stated that this assessment technique, if not properly used, could result in an incomplete patchwork of knowledge and new data that was casually gathered by the teacher tended to reinforce the initial opinion that was developed. Guerin and Maier (1983) believed that "such observations tend to focus on the extraordinary features of a student's behavior and are in part limited by the perceptual skill of the teacher" (p. 6).

Hedges and Axelrod (1995) stated that direct observation of students enabled the teacher to make
judgements about their social interaction, work habits, and problem solving abilities. They further indicated that this technique could be used to assess individual students or groups of students and these observations could be formal or informal. Bott (1996) emphasized the importance of having a well planned observation that was based on course or lesson objectives and/or standards of behavior. This removes the observation from the subjective to the objective realm for the teacher.

Gullickson (1984) reported that teachers believed that teacher-made tests served their needs best when evaluating students. Essay tests were the next most useful, with standardized tests and oral quizzes being somewhat less than useful. Gullickson also reported that teacher developed tests, teacher observations, and curriculum embedded tests served information needs more effectively than did standardized tests. Teachers indicated that tests facilitated evaluation and were the best means of assessing individual student learning (Kershaw, 1993).

Hall, Villeme, and Phillippy (1985) conducted a study which investigated beginning teachers' use of teacher-prepared tests, district-wide standardized tests, and statewide minimum competency tests results in making critical educational decisions. Teacher-prepared tests and
statewide minimum competency assessment instruments were perceived as about equal in making critical decisions by beginning teachers. State assessment test results were considered most important in decisions about academic progress, diagnosis of student weaknesses, judgements about the adequacy of teaching, and judgements regarding the adequacy of instructional materials. Teacher-prepared tests were considered most important for student self-assessments and motivating student learning. Although both standardized tests and teacher-made tests were viewed as important in selecting types of educational decisions, none were judged by beginning teachers to play a clearly dominant role. This finding would support that test users keep in mind that their primary purpose was to provide information that was applicable to the assessment method being used and that this data needed to be supplemented with other sources of information.

Stiggins and Bridgeford (1986) examined the role and relative importance of teacher-made objective tests, published tests, structured performance assessments and unstructured performance assessments used in classroom decision-making. The decision areas included: (a) diagnosing students, (b) grouping students, (c) grading students, (d) evaluating students, and (e) reporting
assessment information. Teacher-made objective tests were considered most important when making decisions related to diagnosing students, assigning grades, evaluating the effectiveness of an instructional treatment, and reporting achievement results. When forming instructional groups, all three types of tests were weighted approximately the same. Both structured and unstructured performance assessments were found to be only slightly less useful than objective tests in all of the same decision areas.

Hall, Carroll, and Comer (1988) conducted a study to examine the perceptions of teachers regarding the weight given to the results from three major test types in making educational decisions: teacher-prepared, nationally standardized, and state competency tests. It was found that new teachers gave greater weight to their own self-made tests and to statewide assessment tests than to their districts standardized test in making decisions affecting learning and instruction.

Griswold (1988) reported that teacher observation and judgement, and teacher-made objective tests were used thoroughly for classroom assessment purposes. Teachers used observation and judgement more than any of the other assessment methods and were most concerned with improving these forms of testing. Teacher-made tests were the second
most used for classroom assessment. The least used method by teachers were standardized achievement tests.

**Attitudes Towards Assessment**

Some instructors thought that the evidence of learning provided by tests to be somewhat inaccurate, of limited value, and largely irrelevant for the purposes of education, while others relied upon the information generated by tests to provide them with the basis for improving instruction and enhancing learning (Kershaw, 1993). This raises the question of why do some teachers resist assessment activities while others use the results from these activities extensively? This question remains unexplored and unanswered. Very little research has been conducted on teachers' attitudes toward the practice of classroom assessment (Green & Stager, 1985).

Many of the earlier studies conducted in the area of testing focused upon attitudes toward standardized testing. Yeh (1980) reported that teachers with eight years or less of teaching experience tended to be more doubtful of testing than their more experienced peers. Further, the less seasoned teachers were less optimistic about the degree to which instruction actually influenced student performance on standardized tests. Goslin (1967) proposed that a
relationship existed between teachers' opinions and the practical use of standardized test scores. It was concluded that educators who believe in the usefulness and accuracy of standardized tests, made greater use of such scores than did teachers who were less confident of the value of such tests.

The current trend towards accountability has raised the concern that teachers' intuition will be substituted by the current zeal for data-based decision-making (Rudman, 1987). For tests to be used effectively as part of the instructional process, teachers need to: (a) perceive the positive points of reliable and valid testing and test use, (b) be willing to use results from tests for more than grading, (c) increase their knowledge and understanding of testing, and (d) convey positive feelings about tests to their students (Green & Stager, 1986). To be able to do this, teachers should have positive feelings towards tests themselves (Green, 1990). Green and Stager (1986) indicated that the attitudes teachers have toward the tests they give and the practice of testing can influence different aspects of education: (a) the quality of tests given; (b) the significant of test scores; (c) the means for which test information is used; (d) the evaluations made by students and teacher; and (e) the students perceptions of themselves, the school, and the instructional process.
In their review of literature, Schafer and Lissitz (1987) concluded that although teachers may be inadequately trained to use measurement practices, they saw assessment as an important component of their professional role and feel positive towards it. Kershaw (1993) stated that even though Schafer and Lissitz did not identify a relationship between level of competence and attitude, Rudman (1987) did. Rudman asserted that teacher familiarity with testing, amount of teaching experience, and student performance on tests all have an impact on the attitudes that teachers hold toward assessment. McKee and Manning-Curtis (1982) concluded that teachers with a solid knowledge base in measurement were found to have more positive attitudes toward tests than did teachers without a knowledge base in measurement.

Gullickson (1984) concluded that teachers perceived tests as important instructional tools that were worth the time and effort required for their use. Participants in the study agreed "that tests increase student effort, affect student self-concept, create competition, improve student interaction and in general improve the learning environment" (p.247).

Green and Stager (1985) found that "teachers who use tests more often have somewhat more positive attitudes toward the effectiveness of classroom tests than do teachers
who use tests less frequently” (p.8). The relationship between teachers’ attitudes towards assessment and their reported use of classroom tests were low, but consistently positive, suggesting that a true relationship between attitude and test use might exist (Kershaw, 1993).

Green (1990) conducted a study to assess the differences in teacher opinions about testing and test use between preservice teachers (senior and sophomores) and inservice teachers with varying years of experience. It was found that there were no significant differences within groups and the opinions of both teachers and preservice teachers about classroom testing were generally positive. Opinions about the use of standardized tests from both groups were less positive.

In a prior study, Green and Stager (1986) determined that a relationship of practical significance between attitudes of teachers and their use of tests did not exist. Green and Stager suggested that the relationship between test use and attitude was “... probably affected by numerous other factors such as accountability demands, students’ expectations and expectations of peers” (p.148). In addition, they indicated that the relationship of attitudes and social desirability responding needs to be
further investigated because the attitudes on the rating scale could have been faked.

Constraints and Assessment Use

"Necessary and sufficient resources must be available for teachers to implement any new idea—and the systematic use of test data to improve instruction is a relatively new idea" (Yeh, Herman, & Rudner, 1981, p. 9). Hall, Carroll, and Comer (1988) investigated the relationship of assessment use to degree of autonomy in teaching. It was found that the more autonomous teachers were in terms of their stated behavior, the less inclined they were to use the results of nationally standardized and state minimum-competency tests that had been imposed upon them. The authors concluded that teacher perceived autonomy potentially serves as an interceding factor in the application of test results in the classroom.

Gullickson (1984) stated that teachers identified the lack of assistance and insufficient time as constraints in the assessment process. A majority of teachers were found to: (a) prepare and score their tests without assistance, (b) receive inadequate support in the development/analysis/interpretation of test they administer, (c) have insufficient time to prepare tests, and (d) state
that the availability of publisher-made tests were not an important criterion in selecting curricular materials. Stiggins and Bridgeford (1985) supported Gullickson's conclusion that teachers deemed the lack of time as a constraint in the assessment process. They found that "... teachers frequently reported concern about their ability to effectively integrate assessment, given the time constraints imposed by the classroom" (p.282).

Fielding, Shaughnessy, and Duckworth (1986) initiated a study to investigate the use of recommended assessment practices offered through teacher inservice. It was found that one of the primary concerns of the respondents was that resources (test scoring machines and goal referenced test-items banks) were not available. In addition, recommended assessment practices presented through in-service activities required teachers to invest more time in the assessment process. Fielding et al. (1986) stated that a weakness found in in-service training was that the programs were too brief, given the complex objectives they were conveying. Teachers indicated that they needed more time to translate what they were learning into useful and high quality teaching and testing materials.

In a study conducted by Yeh et al. (1981) it was found that the availability of aides was associated with greater
use of assessment information. It was hypothesized that a classroom aid may help with the considerable amount of record keeping required. In addition, these individuals help in making instructional alternatives possible which enables the teachers to make good use of test data for instructional decision-making and implementing those decisions. Without the resources of aides, teachers may have been less motivated to use test data because they lacked the resources to carry out individualized instruction.

Teachers were concerned about the quality of assessment and were further frustrated with the lack of time that was available to deal with this problem (Stiggins & Bridgeford, 1985). In a study conducted by Griswold (1988), it was found that teachers need more time if meaningful assessments are to be developed or improved.

**Teacher Competence in Assessment**

Newman and Stallings (1982) reported that four of the six purposes for testing -- assessing achievement, assessing mastery, assigning grades, and planning instruction were related to a teacher’s knowledge of testing. The American Federation of Teachers, National Council on Measurement in Education, and the National Education Association (1990)
developed a set of standards to assist in the improvement of training and certification of programs in measurement and assessment for teacher competence in student assessment.

The standards were intended for use as:

(a) a guide for teacher educators as they design and approve programs for teacher preparation;
(b) a self-assessment guide for teachers in identifying their needs for professional development in student assessment;
(c) a guide for workshop instructors as they design professional development experiences for inservice teachers; and
(d) an impetus for educational measurement specialists and teacher trainers to conceptualize student assessment and teacher training in student assessment more broadly than has been the case in the past. (p.1)

The standards for teacher competence in educational assessment of students stated that teachers should skilled in:

(a) choosing assessment methods appropriate for instructional decisions;
(b) developing assessment methods appropriate for instructional decisions;
(c) administering, scoring, and interpreting the results of both externally-produced and teacher-produced assessment methods;
(d) using assessment results when making decisions about individual students, planning teaching, developing curriculum, and school improvement;
(e) developing valid pupil grading procedures which use pupil assessments;
(f) communicating assessment results to students, parents, other lay audiences and other educators; and
(g) recognizing unethical, illegal, and otherwise inappropriate assessment methods and uses of assessment information (American Federation of Teachers et al., 1990, p.4).
Standard four specifically addresses the usefulness of assessment information. Teachers should be able to:

(a) use accumulated assessment information to organize a sound instructional plan for facilitating students' educational development;
(b) use assessment results to evaluate instruction and curriculum through the proper interpretation of results; and
(c) stay informed about the results of local, regional, state, and national assessments and about their appropriate use for pupil, classroom, school, district, state, and national educational improvement. (p.4)

"Teacher training in measurement and assessment has had and will continue to have, an effect on teacher assessment use" (Kershaw, 1993, p.51). Carter (1984) stated that increased knowledge of testing should better equip teachers to make important value judgments about the usefulness of different testing approaches. In particular are the approaches that are related to personal instructional goals and practices.

In the review of literature conducted by Newman and Stallings (1982) it was found that over the last 25 years there has been trivial changes in the status of teacher measurement competency. The competency level of teachers in classroom assessment calls into question the adequacy of teacher preparation units for assessment responsibilities (Kershaw, 1993). Gullickson and Hopkins (1987) noted that preservice instruction in educational measurement was not
adequate to develop the level of desired skills because of the complexity of the assessment process. In a study conducted by Schafer and Lissitz (1987) teachers were reported to be ill-trained to use accepted measurement practices as seen by their performance on tests of measurement principles and by an analysis of their tests. Schafer and Lissitz claimed that a significant proportion of teachers and administrators did not receive training in measurement methods and there is not much pressure from school personnel for such training.

Hills (1991) addressed the current situation by stating that "on a large scale, schools, their administrators, and their teachers apparently do not know or do not attend to what are sound and proper assessment practices" (p.544). Carter (1984) reported that teachers were insecure about their knowledge in the "basic principles of item writing" (p.60). It was reported that the primary reason that this problem exists is that no one takes courses in student evaluation and few institutions have complete courses that are solely devoted to measurement. Hills (1991) emphasized this when only four states were identified that had a legal requirement that preservice teachers take at least one course in this area. Carter (1984) provided three
recommendations for the improvement of both preservice and inservice programs:

(a) the scope and sequence in preservice measurement courses should be reexamined in light of teacher's insecurity about the strength of their background in testing;

(b) present preservice measurement courses should be critiqued to determine whether the content runs parallel with testing activities at the local district and classroom level; and

(c) teacher inservice programs should be focused on enhancing teachers' knowledge of testing and on enabling them to tackle different testing issues.

(p.60)

Stiggins, Griswold, and Wikelund (1989) found that teachers who "lacked training in the teaching and assessment of higher order thinking skills tended to assess them less often" (p.244). Other findings from this study indicated that teachers believed in the importance of developing critical thinking skills and that such thinking skills could be taught in an educational setting. However, they were less certain about the assessability of thinking skills and rated their ability to assess such skills as lower than their ability to teach them.

Schafer and Lissitz (1987) concluded that personnel conducting research in the area of educational measurement, are not teaching formal measurement courses that are required for certification in the majority of teacher education programs. Gullickson and Hopkins (1987) found that when professors had additional time available for
classroom instruction on assessment, the time was used for statistics and standardized testing rather than test development, non-test techniques, and grading.

Gullickson and Ellwein (1985) found that although the "theoretical implications of test analysis have been made clear, empirical evidence of the benefits for instruction, and students achievement are lacking" (p.17). Gullickson and Hopkins (1987) concluded that "experienced faculty know that even a full course (without an overdose of statistical computations) is minimal preparation for providing the range of quantitative and qualitative evaluation methods needed to grasp and apply the proper role of measurement/evaluation in instructional design" (p.15).

Gullickson (1984) stated that the average instructor does not appreciate what was learned in college measurement courses nor is this knowledge pertinent to their classroom testing needs. The implication is that many teachers learn assessment practices through on-the-job experiences. Although teachers appeared to be comfortable in their knowledge of assessment, Gullickson (1984) stated that "teachers perceived themselves as having an adequate knowledge of testing . . ." may be ". . . much less prepared than what is desirable" (p.245). Hills (1991) indicated that the most serious problem with teacher competence in
this area was the fact that the primary means of assessment, the classroom test, is "often severely flawed or misused" (p.541).

"Not all research has led to such dismal conclusions regarding the status of measurement and assessment training" (Kershaw, 1993, p.54). Fleming and Chambers (1983) examined the weaknesses and strengths of teacher-constructed tests in the Cleveland School District. It was found that training programs addressing item construction and tests as measurement of student learning were needed. Shutz (1980) minimized the importance of formal assessment training and indicated that anyone interested in acquiring test design and construction skills could gain them by consulting texts in measurement and evaluation. Shutz expressed that these measurement skills can be acquired by any Bachelor of Arts level person within a few months of on-the-job training.

Teachers were not currently rewarded for their efforts in improving their own assessment abilities. Hills (1991) stated that "one would have a difficult time finding in the entire U.S. even a single teacher whose career was adversely affected by abysmal ignorance of skills" (p.545). Any rational student training to be a teacher can quickly determine that being competent in student assessment is at best a frill (Hills, 1991).
Gullickson and Hopkins (1987) concluded that the considerable constraints imposed on educational measurement courses, will continue to cause students to be ill-prepared for classroom evaluation tasks. Strong differences exist in respect to what measurement instruction preservice teachers should receive. Gullickson and Hopkins further stated that teachers have not learned or very rarely apply those concepts that receive emphasis in measurement instruction.

Newman and Stallings (1982) suggested that an emerging trend was the addition of more measurement course work in teacher training programs. It was found that more than three-fourths of the inservice teachers studied had completed one or more courses in measurement. They suggested that the trend was moving towards emphasizing whole courses in measurement, rather than the segment status that now exist.

**Teacher Characteristics**

Teachers' demographic and background characteristics have been recognized as factors which can explain variations in teacher competence and in particular teacher use of assessment. Ryan (1960) found, in a study of more than 6,000 teachers, significant differences in teacher's classroom behavior due to variable such as age, gender, and
teaching experience. Years of teaching experience was found to be related to different patterns of assessment use (Yeh, et al., 1981). It was further found that those teachers with less than eight years of teaching experience were more likely to use the results of their own objective paper and pencil test rather than the results from required, standardized, or curriculum embedded test.

Class, subject, and group size were variables that influenced teacher effectiveness (Brophy & Good, 1986). Doerfert (1989) examined the relationship between teacher’s professional knowledge competence and type of teacher preparation, program area, type of school, age, gender, related work experience, and education level. Significant differences were found to exist for age, gender, type of school, and level of education in their relationships with professional knowledge competence.

Newman and Stallings (1982) found that several teacher background characteristics were correlated with classroom assessment competency. It was determined that younger teachers, teachers with less teaching experiences, and teachers with higher degrees tended to score higher on an instrument which measured an understanding of classroom assessment principles.
Conceptual Model for the Study

A conceptual model for this study, depicted in Figure 1, was based on the review of literature and a previous study (Kershaw, 1993). The use of student assessment information in educational decision making was examined. The study focused on the relationships between use of assessment information and perceived competence in assessment, attitude toward assessment, perceived constraints to assessment activities, and selected instructor characteristics: age, gender, education level, teaching experience, related work experience, and program area. Attitude toward assessment, perceived constraints in the assessment process, and perceived competence in assessment were seen as being interrelated, yet dependent upon teacher characteristics.
Figure 1. Conceptual Framework of the Relationship Between Independent Variables and Technical and Occupational Instructors' Use of Student Assessment Information.
CHAPTER 3

METHODOLOGY

The methodology used to conduct the research is described in this chapter. The methodology is organized and presented in the following sections: (a) research design, (b) population and sampling, (c) instrumentation, (d) data collection, and (e) data analysis.

Research Design

This descriptive-correlational study was designed to explore and describe the assessment practices of Ohio post-secondary technical and occupational instructors. The study examined the use of assessment information obtained from six types of student assessment methods in addressing nine instructional decisions. The nature and strength of relationships between assessment use and instructor attitudes, instructor competence in assessment, constraints to assessment, and instructor characteristics were examined.
The dependent variable in this study was instructor use of student assessment information in making instructional decisions. Independent variables included instructor attitudes toward assessment, instructor's competence in assessment, and potential constraints faced by instructors while conducting assessment activities.

Potential constraints faced by instructors while conducting assessment activities included the following: money, time, technology, assistance, training and education, and availability of materials. Instructor's characteristics in addition to attitude and competence which had potential relationships with assessment use were identified in the literature. The instructor characteristics included in this study were: age, gender, educational level, teaching area, teaching experience, and related work experience.

Population and Sampling

The target population for this study was all full-time post-secondary technical instructors in the State of Ohio during the spring of 1996. This population consisted of 1,815 full-time instructors. A random sample of 318 individuals was drawn from the population as recommended by Krejcie and Morgan (1970) with a 95% confidence level of obtaining a representative sample of the population.
Table 1 illustrates the number and percent of respondents in each program area.

<table>
<thead>
<tr>
<th>Program Area</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>3</td>
<td>1.92</td>
</tr>
<tr>
<td>Business Occupations</td>
<td>41</td>
<td>26.28</td>
</tr>
<tr>
<td>Marketing</td>
<td>5</td>
<td>3.21</td>
</tr>
<tr>
<td>Family and Consumer Sciences</td>
<td>2</td>
<td>1.28</td>
</tr>
<tr>
<td>Trade and Industrial</td>
<td>10</td>
<td>6.41</td>
</tr>
<tr>
<td>Health Occupations</td>
<td>60</td>
<td>38.46</td>
</tr>
<tr>
<td>Engineering</td>
<td>20</td>
<td>12.82</td>
</tr>
<tr>
<td>Human Services</td>
<td>2</td>
<td>1.28</td>
</tr>
<tr>
<td>Other</td>
<td>13</td>
<td>8.33</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>156</td>
<td>100.00</td>
</tr>
</tbody>
</table>

*Information was not available from two respondents.

Table 1: Number and Percent of Respondents by Program Area (n = 158)*

Fraenkel and Wallen (1996) indicated that there were four major threats to external validity in a descriptive study. These threats were frame error, sampling error, selection error, and non-response error. A frame error is said to be present when there is a difference between the intended target population and the actual population. The researcher wrote to the administrators responsible for
technical and occupational education at each post-secondary public institution in Ohio requesting names and addresses of all full-time technical and occupational instructors at their institutions. A week after the initial letter was sent out, the administrators that had not responded to the initial request were telephoned and reminded of the initial request. Two weeks after the initial request, another telephone call was placed to the institutions that failed to responded to the second request for the list of names and addresses. In the second phone call a college catalog was requested by the researcher. With the names obtained from the administrators and the names produced from a listing of full-time instructors within the course catalog a comprehensive list of instructors was produced. This was done to control for frame error, however, more than eight percent were in a category other than a technical occupational category.

Sampling error is defined as the difference between sample and population measures (Fraenkel & Wallen, 1996). With this sample size (n=318) it was assumed that the population would be properly represented 95% of the time.

Selection error is said to occur when some individuals have a greater or lessor chance of being selected than other individuals within the target population. This error can
result from the use of a non-representative or non-probabilistic sample. Selection error was controlled by the researcher by eliminating duplicate names from the population list.

Non-response error is when subjects were selected for the study, but were not located, failed to respond, refused to respond, or did not return the questionnaire for any reason. Non-response error was controlled by statistically comparing a randomly selected group of non-respondents to respondents. A 10% random sample of non-respondents was used to ensure a large enough number for conducting a t-test. An examination of the data revealed that there were no violations of the assumptions for the t-test.

**Instrumentation**

The five-part survey used for this research was adapted from a survey used in a similar research study (Kershaw, 1993), although, post-secondary instructors were used rather than secondary teachers. Permission was obtained from this researcher for the use and alteration of the instrument. The dependent variable, instructor use of assessment information, was measured in Part I of the instrument. Instructors were asked to indicate the extent to which they use information from six types of assessment methods in
addressing nine different instructional decisions. The six types of assessment methods used in the study included: objective paper and pencil methods, standardized test scores, performance assessments, informal observations, portfolios, and essay methods.

The participants in this study were asked to indicate the extent to which they use results from each of the six assessment methods in making nine different types of instructional decisions. The instructional decisions addressed were: planning for instruction, diagnosing student weaknesses, monitoring student progress toward course objectives, motivating students to learn, evaluating the effectiveness of instruction, evaluating the instructional materials used, encouraging students to assess their own work, assigning grades, and grouping students for instructional activities. A five-point Likert-type scale ranging from “never use” to “always use” was used.

Part II of the questionnaire was designed for measuring the first independent variable, competence in assessment. The respondents were asked to indicate the perceived level of their competence in the assessment process. The competency statements used for this section were based upon “Standards for Teacher Competence in Educational Assessment of Students” (American Federation of Teachers, National
Council on Measurement in Education, & National Education Association, 1990). A five-point Likert-type scale was used which ranged from "not competent" to "extremely competent".

Instructors' attitudes toward assessment were measured in Part III of the instrument using a semantic differential scale. This scale consisted of eight bi-polar adjectives which represents the concept of assessment. A seven-point scale was used for each pair of adjectives. Respondents were asked to place a check mark between the adjectives at the point that best indicated how they would described their attitude towards the overall assessment process.

Part IV of the instrument was designed to measure the perceived constraints that instructors may face during their assessment activities. Major constraints that were identified in the literature included: time, money, assistance, technology, training and education, autonomy in making assessment related decisions, and the availability of assessment materials. A five-point Likert-type scale was used that ranged from "strongly disagree" to "strongly agree". Participants were asked to indicated their level of agreement or disagreement with nine constraint statements.

The personal characteristics of each instructor were measured in Part V of the questionnaire. Respondents were
asked to provide personal information regarding each of the following characteristics:

Gender: the sex of the individual;
Teaching experience: number of years employed in the profession of teaching;
Related work experience: number of years of related work experience prior to or concurrent with teaching,
Teaching area: current technical/occupational area that best described their current teaching area. These areas included agriculture, business occupations, marketing, family and consumer sciences, trade and industrial, health occupations, engineering, human services, and other;
Level of education: the highest level of education achieved: high school diploma or equivalent, some college, associates degree, bachelors degree, some graduate work, masters degree, doctorate degree, or other;
Present age: the reported age of the respondent in years.

A panel of experts was used to establish content and face validity for the survey instrument. The panel consisted of three community college instructors, four professors of vocational education, one Ohio Department of
Education supervisor, and one staff member from the Ohio Board of Regents. The panel of experts ensured that the instrument had clearly defined statements and questions, made suggested changes to statements and questions, offered suggestions for the addition or deletion of statements and questions, and made comments on the format and general appearance of the survey instrument. The recommendations were incorporated into the instrument.

After the instrument was revised, it was pilot tested for reliability using a group of respondents from a community college outside of Ohio. A test-retest method was also used to test the reliability of the instrument over a period of time. The time interval between the test and retest was two weeks. The results from test #1 and test #2 were compared for percent agreement with values that ranged from .85 to .92 for each item. Items were said to be in agreement if the response from the initial test agreed (strongly agree or agree) or disagreed (strongly disagreed or disagreed) with that of the retest. An exact match was needed if the initial response was in the neutral category. Measures of internal consistency were calculated from the data obtained from the first test of the test/retest method. Cronbach's Alpha ranged from .77 to .94 for each of the six sections of Part I, .85 for the 21 summed items in Part II,
.81 for the semantic differential in Part III, and .54 for the sum of the 9 items in Part IV. Nunnally (1976) indicated that reliability coefficients of .50 to .60 may suffice in early stages of research in a domain when determining its dimensions.

**Data Collection**

The data for this study were collected using a modified version of Dillman’s (1978) Total Design Method. The instrument used for this study was printed in a twelve page booklet form. No questions were placed on the front or back cover. Different colors of paper were used for the two mailings. Yellow paper was used for the booklets in the first mailing and blue paper was used in the second mailing.

The first mailing of questionnaires was sent out on May 26, 1996. Enclosed in the first mailing was a cover letter emphasizing the importance of the study and the confidentiality of responses, a pre-addressed stamped envelope, and the questionnaire itself. Each questionnaire was coded to assist the researcher in the follow-up of non-respondents. The participants were given a week to return the completed questionnaire.

A post card reminder was sent out one week after the first mailing of the questionnaire to all participants in
the study (June 3, 1996). This post card reminded participants of the importance of the study and the importance of each response. The post card also thanked the individuals if they had already returned their completed survey. It further asked the non-respondents to take the time to complete and return the questionnaire.

Approximately two weeks after the first mailing (June 12, 1996) a second packet was mailed to all non-respondents. This packet included the questionnaire, a pre-addressed and stamped envelope, and a cover letter to again emphasize the importance of returning the completed questionnaire. The final correspondence with the participants included a second post card reminder which was sent to all non-respondents on June 22, 1996. July 13, 1996 was the deadline for accepting completed surveys.

Questionnaire were received from 170 instructors which represented an overall response rate of 53%. Of the 170 surveys returned, 93% (158) were useable. This represented a useable response rate of slightly less than 50%.

A 10% random sample of non-respondents was selected and contacted by telephone. However, in order to obtain the 10% sample it was necessary to contact slightly more than 20% of the nonrespondents. Differences between non-respondents and respondents on each part of the questionnaire were compared
using a t-test. The significance level of alpha for this

test was set at .05. No significant differences were found

between the two groups for each part of the questionnaire,

however an over sampling of the nonrespondents was conducted
to obtain this information, therefore the results of this

study technically cannot be generalized beyond the

respondents.

Data Analysis

The data collected for this study were analyzed using

the statistical package SPSS for Windows computer program.

Descriptive statistics provided measures of central tendency

and variability for organizing, summarizing and analyzing
differences and likenesses between groups. Pearson’s $r$

coefficient, point bi-serial correlation coefficients, and

Cramer’s $V$ were used to summarize the magnitude and
direction of the relationship between variables. The Davis

(1971) conventions were used to describe the measures of

association and are presented in Table 2. Semi-partial,

stepwise multiple regression analysis was used to determine

the variance in use of assessment information as explained

by selected independent variables.
<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Description</th>
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<tbody>
<tr>
<td>.70 or higher</td>
<td>Very Strong Association</td>
</tr>
<tr>
<td>.50 to .69</td>
<td>Substantial Association</td>
</tr>
<tr>
<td>.30 to .49</td>
<td>Moderate Association</td>
</tr>
<tr>
<td>.10 to .29</td>
<td>Low Association</td>
</tr>
<tr>
<td>.01 to .09</td>
<td>Negligible Association</td>
</tr>
</tbody>
</table>

Source: Davis, (1971)

Table 2: Conventions Used to Describe Measures of Association

Semi-partial multiple regression was used to calculate the unique relationships between independent variable sets and the dependent variable—use of assessment information in making instructional decisions. The stepwise entry method of independent variables into the multiple regression models was used based on the exploratory nature of the study, the fact that interval, ordinal, and nominal variables were investigated, and the lack of theory to guide the order in which variables were entered into the equation. The independent variables that were entered into the regression equation were: competence in the assessment process, constraints of the assessment process, instructor’s attitude toward the assessment process, program area, educational level, years of teaching experience, age, gender and, years of work experience.
The purpose of this study was to describe technical and occupational instructors' use of assessment information and to determine the variables which contribute to its use in making educational decisions. This chapter reports findings related to the following: (a) characteristics of the respondents, (b) instructors' use of assessment information, (c) instructors' perceived competence in assessment, (d) instructors' attitudes toward assessment, (e) instructor perceived constraints to assessment, (f) relationships between dependent and independent variables, and (g) multiple regression models.

Characteristics of the Respondents

Within this section a descriptive profile of the sample of post-secondary technical and occupational instructors is presented. These instructors are described in terms of age and gender, years of related work and teaching experience,
program area and level of education. Statistics reported include frequencies, percentages, measures of central tendency and measures of variability.

**Age and Gender**

The descriptive statistics related to the age and gender of the respondents are reported in Table 3. Less than one-half (44.2%) of the instructors in the sample were between the ages of 40 and 49 years of age. Instructors between the ages of 50 and 59 accounted for 27.3% of the sample while 16.2% were between the ages of 30 and 39. The youngest instructor in the study was 25 years of age while the eldest was 67. Of the 158 respondents, 57% were female and 43% were male.
### Characteristics

<table>
<thead>
<tr>
<th>Age</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 30</td>
<td>3</td>
<td>1.9</td>
</tr>
<tr>
<td>30 - 39</td>
<td>25</td>
<td>16.2</td>
</tr>
<tr>
<td>40 - 49</td>
<td>68</td>
<td>44.2</td>
</tr>
<tr>
<td>50 - 59</td>
<td>42</td>
<td>27.3</td>
</tr>
<tr>
<td>60 and over</td>
<td>16</td>
<td>10.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>154</strong>a</td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Mean = 47.03 SD = 9.4
Minimum = 25 Maximum = 67

### Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>90</td>
<td>57.0</td>
</tr>
<tr>
<td>Male</td>
<td>68</td>
<td>43.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>158</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Information was missing for four respondents on age.

Table 3: Age and Gender of Instructors (n=158)

### Years of Related Work Experience and Teaching

In Table 4 the data is summarized for years of related work experience and teaching experience. Post-secondary instructors had an average of approximately 11 years of related work experience and 15.49 years of teaching experience. Slightly more than one-third (34.4%) of the respondents indicated that they had 0-5 years of related work experience. Approximately one-fourth (24.7%) indicated they had 6-10 years of work experience, and 18.8% of...
respondents indicated they had 11-15 years of work experience. Approximately one-fifth (22.1%) indicated they had 16 or more years of work experience.

One-third (33.3%) of the instructors had 10 or less years of teaching experience, and 40.4% indicated they had taught 11 to 20 years. Slightly more than one-fourth (26.3%) had 21 or more years of experience as an instructor.
### Years of Related Work Experience

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>53</td>
<td>34.4</td>
</tr>
<tr>
<td>6-10</td>
<td>38</td>
<td>24.7</td>
</tr>
<tr>
<td>11-15</td>
<td>29</td>
<td>18.8</td>
</tr>
<tr>
<td>16-20</td>
<td>19</td>
<td>12.3</td>
</tr>
<tr>
<td>21-25</td>
<td>5</td>
<td>3.3</td>
</tr>
<tr>
<td>26-30</td>
<td>6</td>
<td>3.9</td>
</tr>
<tr>
<td>31-35</td>
<td>4</td>
<td>2.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>154</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Mean = 10.96  SD = 7.92  
Minimum = 0.0  Maximum = 35

### Years of Teaching Experience

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>20</td>
<td>12.8</td>
</tr>
<tr>
<td>6-10</td>
<td>32</td>
<td>20.5</td>
</tr>
<tr>
<td>11-15</td>
<td>27</td>
<td>17.3</td>
</tr>
<tr>
<td>16-20</td>
<td>36</td>
<td>23.1</td>
</tr>
<tr>
<td>21-25</td>
<td>19</td>
<td>12.2</td>
</tr>
<tr>
<td>26-30</td>
<td>18</td>
<td>11.5</td>
</tr>
<tr>
<td>31 or more</td>
<td>4</td>
<td>2.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>156</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Mean = 15.49  SD = 8.34  
Minimum = 1    Maximum = 38

*Information was not available from four respondents on years of related work experience.  ^Information was not available from two respondents on years of teaching experience.

Table 4: Instructors’ Years of Related Work and Teaching Experience (n = 158)
Program Area

Descriptive statistics for the program areas for the respondents are presented in Table 5. Health occupations instructors made up the largest group of the respondents (38.5%) and was followed by business occupations (26.3%). Four of the areas (agriculture, marketing, family and consumer sciences and human services) comprised less than eight percent of the respondents. The other category was made up of individuals that indicated teaching areas such as math and physics for technical education, general education for technical and occupational education, legal, information systems, tourism, computer science, technology, and environmental. These instructors indicated that their programs did not fall within the program areas listed.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>3</td>
<td>1.9</td>
</tr>
<tr>
<td>Business Occupations</td>
<td>41</td>
<td>26.3</td>
</tr>
<tr>
<td>Marketing</td>
<td>5</td>
<td>3.2</td>
</tr>
<tr>
<td>Family and Consumer Sciences</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>Trade and Industrial</td>
<td>10</td>
<td>6.4</td>
</tr>
<tr>
<td>Health Occupations</td>
<td>60</td>
<td>38.5</td>
</tr>
<tr>
<td>Engineering</td>
<td>20</td>
<td>12.8</td>
</tr>
<tr>
<td>Human Services</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>Other</td>
<td>13</td>
<td>8.3</td>
</tr>
<tr>
<td>Total</td>
<td>156a</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*aInformation was not available from two respondents.

Table 5: Program Area of Instructors (n=158)
Level of Education

Table 6 is used to display the data for the instructors' level of education. Over three-fourths (80%) of the respondents had earned a graduate degree. Fewer than 10% of the respondents had a bachelors degree or less. Instructors that indicated the other category made up over one percent of the sample and included instructors who indicated their highest level of education was that of advanced certification.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associates Degree</td>
<td>5</td>
<td>3.2</td>
</tr>
<tr>
<td>Bachelors Degree</td>
<td>9</td>
<td>5.8</td>
</tr>
<tr>
<td>Some Graduate Work</td>
<td>15</td>
<td>9.7</td>
</tr>
<tr>
<td>Masters Degree</td>
<td>106</td>
<td>68.4</td>
</tr>
<tr>
<td>Doctorate</td>
<td>18</td>
<td>11.6</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>155*</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Information was not available from three respondents.

Table 6: Instructors Level of Education (n=158)

Instructors Use of Assessment Information

The use of assessment information for educational decision-making collected from six methods are displayed in Table 7. Each assessment method was scored on a five-point
Likert-type scale in terms of its use in addressing selected educational decision areas. The ordinal scale was as follows:

1 = Never
2 = Rarely
3 = Sometimes
4 = Very Often
5 = Always

Information generated from objective paper and pencil methods were reported most often (Mean=3.92) by instructors in making educational decisions. Instructors indicated they always (Mode=5) use objective items in making decisions for assigning grades (67.7%), monitoring student progress toward course objectives (52.5%), evaluating effectiveness of instruction (47.5%), evaluating instructional materials (36.7%), and encouraging students to assess their own work (36.7%). They further indicated that they very often (Mode=4) use objective items when making decisions about diagnosing student weakness (43.7%) and planning for instruction (42.4%). The decision area of motivating students to learn was bimodal between always use (Mode=5) and very often use (Mode=4) as reported by 31.6 percent of the instructors. Instructors signified that they tend to never use (Mode=1) objective methods for grouping students for instructional activities.
<table>
<thead>
<tr>
<th>Decision Objective Areas*</th>
<th>Standardized Test Scores</th>
<th>Performance Assessment</th>
<th>Informal Observation</th>
<th>Portfolios</th>
<th>Essay Items</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mode % (n)</td>
<td>Mode % (n)</td>
<td>Mode % (n)</td>
<td>Mode % (n)</td>
<td>Mode % (n)</td>
</tr>
<tr>
<td>1. 4 42.4 156</td>
<td>4 36.1 154</td>
<td>4 36.7 154</td>
<td>4 57.0 151</td>
<td>2 25.9 154</td>
<td></td>
</tr>
<tr>
<td>2. 4 43.7 151</td>
<td>4 34.2 148</td>
<td>4 44.3 148</td>
<td>1 53.8 146</td>
<td>2 26.6 150</td>
<td></td>
</tr>
<tr>
<td>3. 5 52.5 149</td>
<td>5 32.3 150</td>
<td>4 39.2 147</td>
<td>1 56.3 147</td>
<td>2 27.8 149</td>
<td></td>
</tr>
<tr>
<td>4. 31.6 152</td>
<td>5 36.7 150</td>
<td>5 40.5 150</td>
<td>1 55.7 149</td>
<td>1 27.2 149</td>
<td></td>
</tr>
<tr>
<td>5. 47.5 151</td>
<td>5 35.4 147</td>
<td>4 36.7 148</td>
<td>1 58.9 147</td>
<td>1 27.2 149</td>
<td></td>
</tr>
<tr>
<td>6. 5 36.7 148</td>
<td>5 33.5 145</td>
<td>4 33.5 145</td>
<td>1 54.4 144</td>
<td>1 31.0 147</td>
<td></td>
</tr>
<tr>
<td>7. 5 47.5 149</td>
<td>4 32.3 146</td>
<td>4 32.3 146</td>
<td>1 51.3 145</td>
<td>1 25.3 146</td>
<td></td>
</tr>
<tr>
<td>8. 5 67.7 152</td>
<td>5 21.5 146</td>
<td>5 21.5 146</td>
<td>1 57.0 148</td>
<td>3 24.1 149</td>
<td></td>
</tr>
<tr>
<td>9. 1 42.8 145</td>
<td>1 24.1 144</td>
<td>4 24.1 144</td>
<td>1 72.2 144</td>
<td>1 63.3 145</td>
<td></td>
</tr>
</tbody>
</table>

Overall Mean | 3.92 | 1.90 | 3.78 | 3.64 | 1.78 | 2.49 |
Overall SD | .70 | 1.01 | .76 | .71 | .97 | 1.06 |

Decision Areas:
1. Planning for instruction
2. Diagnosing student weaknesses
3. Monitoring student progress toward course objectives
4. Motivating students to learn
5. Evaluating effectiveness of instruction
6. Evaluating instructional material
7. Encouraging students to assess their own work
8. Assigning grades
9. Grouping students for instructional activities

*Bimodal item with modes of 4 and 5

Table 7: Use of Assessment Information Generated From Six Assessment Methods (n=158)
Performance assessments were used very often by instructors (Mean=3.78) for instructional decision making. Instructors indicated they used information generated from performance assessments always (Mode=5) to make decisions in motivating students to learn (36.7%), evaluating the effectiveness of the instruction (35.4%), monitoring student progress toward course objectives (32.3%) and assigning grades (21.5%). Performance assessment information was used very often (Mode=4) by instructors for the decision areas of planning for instruction (36.1%), diagnosing student weaknesses (34.2%), evaluating instructional material (33.5%), encouraging students to assess their own work (32.3%) and grouping students for instructional activities (24.1%).

Informal observations were used very often (Mean=3.64) by instructors for making instructional decisions. Instructors indicated that they used informal observation always (Mode=5) for motivating students to learn (40.5%) and assigning grades (21.5%). They further indicated they used informal observations very often (Mode=4) when diagnosing student weaknesses (44.3%), planning for instruction (36.7%), evaluating the effectiveness of instruction (36.7%), evaluating instructional material (33.5%), monitoring student progress toward course objectives
(32.9%), encouraging students to assess their own work (32.3%), and grouping students for instructional activities (24.1%).

The use of assessment information from essay items (Mean=2.49), standardized test scores (Mean=1.90) and portfolios (Mean=1.78) were rarely used by instructors for making instructional decisions. Instructors indicated they sometimes (Mode=3) used essay items to make decisions about assigning grades but they rarely used (Mode=2) essay items when monitoring student progress toward course objectives (27.8%), diagnosing student weaknesses (26.6%) and planning for instruction (25.9%). They further indicated they never (Mode=1) used assessment information to make decisions regarding grouping students for instructional activities (63.3%), evaluating instructional materials (31.0%), motivating students to learn (27.2%), evaluating the effectiveness of instruction (27.2%), encouraging students to assess their own work (25.3%) and assigning grades (24.1%). Instructors indicated they never (Mode=1) used standardized test scores or portfolios to make decisions in all of the listed decision areas. The percentages associated with the decision areas under standardized test scores ranged from 47.5% to 72.2% and 51.3% to 72.2% under portfolios.
Instructors' Perceived Competence in Assessment

Table 8 provides the information regarding instructors' perceived level of competence in assessment. The questionnaire used a five-point Likert-type scale to rate competence using the following descriptors:

1 = Not Competent  
2 = Slightly Competent  
3 = Moderately Competent  
4 = Very Competent  
5 = Extremely Competent

Sixty-two percent of instructors considered themselves to be extremely competent (Mode=5) at grading objective paper and pencil items. They further rated themselves as very competent (Mode=4) on all other items except for two with percentages ranging from 23.4% to 55.1%. Thirty-four percent of the instructors ranked themselves as moderately competent (Mode=3) at interpreting scores of standardized achievement tests. When examining items for racial bias, instructors (27.2%) ranked themselves as slightly competent (Mode=2).
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mode</th>
<th>%</th>
<th>(n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Grading objective paper and pencil items</td>
<td>5</td>
<td>62.0</td>
<td>157</td>
</tr>
<tr>
<td>11. Preparing students to take tests</td>
<td>4</td>
<td>55.1</td>
<td>156</td>
</tr>
<tr>
<td>1. Select assessment methods for monitoring student learning</td>
<td>4</td>
<td>50.0</td>
<td>156</td>
</tr>
<tr>
<td>9. Matching items to intended learning outcomes</td>
<td>4</td>
<td>48.7</td>
<td>156</td>
</tr>
<tr>
<td>4. Selecting a representative sample of items to use for assessment purposes</td>
<td>4</td>
<td>47.5</td>
<td>155</td>
</tr>
<tr>
<td>2. Identifying weaknesses of assessment methods</td>
<td>4</td>
<td>46.8</td>
<td>156</td>
</tr>
<tr>
<td>6. Determining difficulty of items</td>
<td>4</td>
<td>46.2</td>
<td>156</td>
</tr>
<tr>
<td>13. Administering a performance assessment</td>
<td>4</td>
<td>45.6</td>
<td>155</td>
</tr>
<tr>
<td>20. Communicating assessment results to students</td>
<td>4</td>
<td>44.9</td>
<td>156</td>
</tr>
<tr>
<td>8. Writing directions for assessment methods</td>
<td>4</td>
<td>44.9</td>
<td>156</td>
</tr>
<tr>
<td>14. Grading a performance assessment</td>
<td>4</td>
<td>44.9</td>
<td>155</td>
</tr>
<tr>
<td>3. Developing a rating scale upon which to base student assessment</td>
<td>4</td>
<td>43.7</td>
<td>156</td>
</tr>
<tr>
<td>15. Evaluating an essay</td>
<td>4</td>
<td>42.4</td>
<td>154</td>
</tr>
<tr>
<td>5. Determining appropriate number of items for assessment methods</td>
<td>4</td>
<td>41.8</td>
<td>156</td>
</tr>
<tr>
<td>18. Using assessment results to organize an instructional plan</td>
<td>4</td>
<td>41.8</td>
<td>156</td>
</tr>
<tr>
<td>16. Validating test items</td>
<td>4</td>
<td>39.2</td>
<td>156</td>
</tr>
<tr>
<td>19. Using assessment results to monitor student learning</td>
<td>4</td>
<td>36.7</td>
<td>155</td>
</tr>
<tr>
<td>7. Examining items for gender bias</td>
<td>4</td>
<td>27.8</td>
<td>154</td>
</tr>
<tr>
<td>10. Evaluating a student portfolio</td>
<td>4</td>
<td>23.4</td>
<td>146</td>
</tr>
<tr>
<td>17. Interpreting scores of standardized achievement tests</td>
<td>3</td>
<td>30.4</td>
<td>147</td>
</tr>
<tr>
<td>21. Examining items for racial bias</td>
<td>2</td>
<td>27.2</td>
<td>153</td>
</tr>
</tbody>
</table>

Table 8: Instructors' Perceived Competence in the Assessment Process

The individual scores for the 21 assessment activities were summed to obtain a measure of overall competence in assessment and are presented in Table 9. To achieve the overall summed categories, a low of 21 and a high of 105 was used. For each individual category the number of statements was multiplied by the upper and lower response category.
For example, the slightly competent score was calculated by multiplying the total number of statements (21) times 1.5 which totaled 32 and was used for the lower score for this summated category. Then the total number of statements (21) was multiplied by 2.49 (the upper score for this category) and totaled 52. Total summated scores ranged from a low of 55 to a high of 100. Six percent of the instructors indicated that they were extremely competent in assessment activities, with scores ranging from 95 to 105. Over one-half (51.9%) of the respondents ranked themselves as very competent as indicated by the scores ranging from 74-94. Forty-two percent of the instructors perceived themselves as moderately competent in conducting various assessment activities with scores ranging from 53-73. None of the instructors rated their competency level as slightly competent or not competent.
Table 9: Summed Instructor Competency Scores (n = 158)

<table>
<thead>
<tr>
<th>Scale Value</th>
<th>Summed Score</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Competent</td>
<td>21 - 31</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Slightly Competent</td>
<td>32 - 52</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Moderately Competent</td>
<td>53 - 73</td>
<td>67</td>
<td>42.4</td>
</tr>
<tr>
<td>Very Competent</td>
<td>74 - 94</td>
<td>82</td>
<td>51.9</td>
</tr>
<tr>
<td>Extremely Competent</td>
<td>95 - 105</td>
<td>9</td>
<td>5.7</td>
</tr>
</tbody>
</table>

Mean = 76.5  SD = 10.76  Minimum = 55  Maximum = 100

Note. Missing data was recoded to the mean.

Instructors' Attitude Toward Assessment

A semantic differential scale was used to measure instructors' attitudes towards the overall assessment process. Instructors were asked to respond to eight bipolar adjectives which were on either end of a seven-point scale. Negative items were recoded. The modal responses are presented in Table 10. Slightly more than forty-nine percent of the instructors indicated they thought the assessment process was important (Mode=7). They further indicated that they held only a slightly less positive attitude (Mode=6) in terms of assessment being fair (34.2%), good (34.2%), efficient (32.9%), reputable (31.0%) and valuable (29.1%). Instructors indicated they held neither a positive nor negative attitude (Mode=4) toward assessment being relaxed (25.9%) or flexible (25.3%).
Table 10: Instructors' Attitudes Toward Assessment (n = 158)

To obtain an attitudinal score for use in investigating relationships between the dependent variable and other independent variables, the individual scores for the eight bi-polar adjectives were summed (Table 11). The possible range of summated scores was from 8 to 56. Instructors were considered to have a positive attitude toward assessment if their summed attitudinal score fell between 36 and 56, a neutral attitude with scores between 28 and 35 and a negative attitude towards assessment with scores between 8 and 27. Over four-fifths (81.1%) of the respondents had a positive attitude toward assessment. Fourteen percent of the instructors had a neutral attitude toward assessment, and slightly more than five percent of the instructors who responded had a negative attitude toward assessment.
<table>
<thead>
<tr>
<th>Summed Attitude Scores</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 - 11</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>12 - 19</td>
<td>1</td>
<td>.6</td>
</tr>
<tr>
<td>20 - 27</td>
<td>7</td>
<td>4.4</td>
</tr>
<tr>
<td>28 - 35</td>
<td>22</td>
<td>13.9</td>
</tr>
<tr>
<td>36 - 43</td>
<td>47</td>
<td>29.8</td>
</tr>
<tr>
<td>44 - 52</td>
<td>62</td>
<td>39.2</td>
</tr>
<tr>
<td>53 - 56</td>
<td>19</td>
<td>12.1</td>
</tr>
</tbody>
</table>

Mean = 42.65  SD = 8.19
Minimum = 19  Maximum = 56

Note. Missing data was recoded to the mean.

Table 11: Instructors' Summated Attitude Scores Towards Assessment (n = 158)

**Potential Constraints Faced by Instructors While Conducting Assessment Activities**

Instructors were asked to respond to nine statements related to the possible constraints they encountered in implementing assessment activities. A five-point Likert-type scale was used with the following descriptors:

1 = Strongly Disagree  
2 = Disagree  
3 = Neither Agree or Disagree  
4 = Agree  
5 = Strongly Agree

Table 12 contains the summary of the data for the instructors' responses to each of the possible constraint statements. Negative items were recoded. Sixty-one percent of the instructors indicated that they strongly agreed
that instructors should decide what assessment methods to use in the courses they teach, and almost one-half (48.1%) strongly agreed that equipment should be available to use in scoring tests. Slightly more one-third (37.3%) indicated they agreed (Mode=4) that additional planning time would allow them to use assessment methods more effectively, and 36.7% agreed (Mode=4) that funds should be provided to buy published assessment material. There was neither agreement nor disagreement (Mode=3) that instructors should have assistants to help them evaluate student work (36.1%), quality published assessment materials are easily located (36.1%), instructors should have an assistant to help them prepare student assessment activities (34.8%), and that college courses were helpful in preparing them to assess student learning (24.1%).
<table>
<thead>
<tr>
<th>Item</th>
<th>Mode</th>
<th>$%$</th>
<th>(n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Instructors should decide what assessment methods to use in the courses they teach</td>
<td>5</td>
<td>61.4</td>
<td>157</td>
</tr>
<tr>
<td>5. Equipment should be available for instructors to use in scoring tests</td>
<td>5</td>
<td>48.1</td>
<td>156</td>
</tr>
<tr>
<td>6. Additional planning time would allow me to use assessment methods more effectively</td>
<td>4</td>
<td>37.3</td>
<td>156</td>
</tr>
<tr>
<td>7. Funds should be provided to buy published assessment material</td>
<td>4</td>
<td>36.7</td>
<td>156</td>
</tr>
<tr>
<td>3. Instructors have access to published assessment materials</td>
<td>4</td>
<td>30.4</td>
<td>155</td>
</tr>
<tr>
<td>9. Instructors should have assistants to help them evaluate student work</td>
<td>3</td>
<td>36.1</td>
<td>155</td>
</tr>
<tr>
<td>4. Quality published assessment materials are easily located</td>
<td>3</td>
<td>36.1</td>
<td>155</td>
</tr>
<tr>
<td>2. Instructors should have an assistant to help them prepare student assessment activities</td>
<td>3</td>
<td>34.8</td>
<td>157</td>
</tr>
<tr>
<td>8. College courses were helpful in preparing me to assess student learning</td>
<td>3</td>
<td>24.1</td>
<td>153</td>
</tr>
</tbody>
</table>

Table 12: Instructors' Perceptions of Potential Constraints to Assessment

To obtain an overall measure of the instructors' perceptions of potential constraints that could be used to investigate relationships between dependent and independent variables, the summed scores on the potential constraint items were obtained for the respondents. For each individual category the number of statements was multiplied by the upper and lower response category. A maximum score of 45 points and a minimum score of nine points was possible when responses to the nine statements were summed. For example,
the disagree constraint score was calculated by multiplying the total number of statements (9) times 1.5 which totaled 14 and was used for the lower score for this summated category. Then the total number of statements (9) was multiplied by 2.49 (the upper score for this category) and it totaled 22. Frequencies and percentages of the summed scores are presented in Table 13. The summed constraint scores ranged from 17-41. Slightly more than 42% of the instructors agreed that they faced potential constraints to their assessment activities. Over one-half (55%) indicated that they neither agreed nor disagreed that potential constraints were present during the assessment process as indicated by the range of overall constraint scores of 23 to 31. Less than four percent of the respondents disagreed (1.2%) or strongly agreed (1.2%) that they encountered constraints during their assessment activities.
<table>
<thead>
<tr>
<th>Scale Value</th>
<th>Constraint Score</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>9 - 13</td>
<td>0</td>
<td>.00</td>
</tr>
<tr>
<td>Disagree</td>
<td>14 - 22</td>
<td>2</td>
<td>1.27</td>
</tr>
<tr>
<td>Neither Agree or Disagree</td>
<td>23 - 31</td>
<td>87</td>
<td>55.05</td>
</tr>
<tr>
<td>Agree</td>
<td>32 - 40</td>
<td>67</td>
<td>42.41</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>41 - 45</td>
<td>2</td>
<td>1.27</td>
</tr>
</tbody>
</table>

Mean = 30.82  SD = 3.97  
Minimum = 17  Maximum = 41

**Note.** Missing data was recoded to the mean.

Table 13: Overall Constraints to Assessment Scores (n = 158)

**Relationships Between Dependent and Independent Variables**

Correlations were used to identify relationships between the use of information from the six types of assessment methods and the independent variables.

Relationships between dichotomous and multichotomous nominal variables, multichotomous nominal and ordinal variables, and multichotomous and interval variables were investigated using a Cramer's V correlation; dichotomous nominal and interval variables were examined using point-biserial correlation; ordinal and interval variables relationships were examined using Spearman rank correlation.

Relationships between interval variables were examined using Pearson's product moment correlations. Associations between
dependent and independent variables ranged from negligible to substantial (Davis, 1971).

The relationships between the use of assessment information and the independent variables in the study are displayed in Table 14. Instructors' perceived level of competence in assessment was shown to have a low association with the use of information from portfolios ($r = .18$). Attitude towards assessment had a moderate association of $r = .33$ with instructors' use of assessment information derived from performance assessment. Constraints to the assessment process had a low association with instructors' use of standardized test scores ($r = .25$) and performance assessments ($r = .20$). Program area, for which the instructor taught, had a substantial association of $r_{cv} = .58$ with their use of essay assessment methods.
### Intercorrelations

<table>
<thead>
<tr>
<th></th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
<th>X5</th>
<th>X6</th>
<th>X7</th>
<th>X8</th>
<th>X9</th>
<th>Y1</th>
<th>Y2</th>
<th>Y3</th>
<th>Y4</th>
<th>Y5</th>
<th>Y6</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1 Competence</td>
<td>* .17</td>
<td>* .21</td>
<td>* .24</td>
<td>.59</td>
<td>* .19</td>
<td>.13</td>
<td>* .09</td>
<td>* .01</td>
<td>.05</td>
<td>.14</td>
<td>.13</td>
<td>* .18</td>
<td>.05</td>
<td></td>
</tr>
<tr>
<td>X2 Attitude</td>
<td>1.00</td>
<td>* .31</td>
<td>* .01</td>
<td>* .07</td>
<td>.50</td>
<td>.02</td>
<td>* .08</td>
<td>* .20</td>
<td>* .01</td>
<td>.12</td>
<td>* .33</td>
<td>.05</td>
<td>.15</td>
<td>* .03</td>
</tr>
<tr>
<td>X3 Constraints</td>
<td>1.00</td>
<td>* .04</td>
<td>* .06</td>
<td>.36</td>
<td>.09</td>
<td>* .02</td>
<td>* .16</td>
<td>.07</td>
<td>* .25</td>
<td>* .20</td>
<td>* .01</td>
<td>* .15</td>
<td>* .11</td>
<td></td>
</tr>
<tr>
<td>X4 Yrs Work Exper</td>
<td>1.00</td>
<td>* .19</td>
<td>.38</td>
<td>* .11</td>
<td>* .24</td>
<td>.12</td>
<td>* .01</td>
<td>.14</td>
<td>* .07</td>
<td>.07</td>
<td>* .05</td>
<td>.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X5 Yrs Teaching</td>
<td>1.00</td>
<td>* .52</td>
<td>* .25</td>
<td>* .63</td>
<td>.09</td>
<td>.09</td>
<td>* .14</td>
<td>* .04</td>
<td>* .06</td>
<td>.01</td>
<td>.09</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>X6 Program Area *</td>
<td>1.00</td>
<td>* .29</td>
<td>* .55</td>
<td>* .52</td>
<td>.47</td>
<td>.49</td>
<td>.49</td>
<td>.51</td>
<td>.50</td>
<td>* .58</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X7 Education Level *</td>
<td>1.00</td>
<td>* .20</td>
<td>* .37</td>
<td>* .01</td>
<td>* .08</td>
<td>.04</td>
<td>* .01</td>
<td>* .03</td>
<td>* .03</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>X8 Age</td>
<td>1.00</td>
<td>.09</td>
<td>.09</td>
<td>* .10</td>
<td>* .06</td>
<td>* .04</td>
<td>* .10</td>
<td>* .02</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>X9 Gender *</td>
<td>1.00</td>
<td>.03</td>
<td>* .14</td>
<td>* .14</td>
<td>.05</td>
<td>* .07</td>
<td>.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y1 Objective</td>
<td>1.00</td>
<td>* .22</td>
<td>.06</td>
<td>* .18</td>
<td>.04</td>
<td>.08</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y2 Standardized</td>
<td>1.00</td>
<td>.09</td>
<td>* .03</td>
<td>* .17</td>
<td>.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y3 Performance</td>
<td>1.00</td>
<td>* .48</td>
<td>* .31</td>
<td>.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y4 Informal Observations</td>
<td>1.00</td>
<td>* .24</td>
<td>.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y5 Portfolio</td>
<td>1.00</td>
<td>* .28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Y6 Essay</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note.** Unless otherwise noted reported coefficients are Pearson product-moment correlations. Relationships among dichotomous and multichotomous nominal variables are reported as Cramer's V correlations. Relationships among dichotomous nominal and interval variables are reported as Point-biserial correlations. Relationships among ordinal and interval variables are reported as Spearman rank-correlations. Relationships among multichotomous nominal and ordinal variables are reported as Cramer's V correlations. Relationships among multichotomous nominal and interval variables are reported as Cramer's V correlations.

*Multichotomous nominal variable.

*Dichotomous nominal variable.

*Ordinal variable.

* P<.05

Table 13: Intercorrelations Between Independent Variables and Assessment Methods (n=158)
Multiple Regression Models

Multiple regression analysis was used to identify the proportion of variance in the use of information from each of the assessment methods that could be accounted for by the linear combination of selected independent variables. To ensure that the regression models were adequate for generating valid data for use in making inferences, the assumptions underlying the regression models were examined for violations. The residuals were found to be normally distributed with a mean of zero; errors were independent as demonstrated by the normal probability plots; scatter plots indicated that residuals had a constant variance with no correlation with the predicted values of the dependent variables; and the Durbin-Watson test for each partial regression model was close to two, which indicated that the independent variables were independent from the residuals (Warmbrod, 1995). Multicollinearity among the independent variables was not a problem as (1) no correlation value exceeded $r=0.70$ and (2) equations with significant $R^2$ values all had partial regression coefficients that were significantly different from zero (Warmbrod, 1995).

A semi-partial regression model for each dependent variable was used to describe the unique variance contributed by each independent variable entered into
the equation. Stepwise entry of the variable was used since this study was exploratory in nature, and little previous research or theory was available to suggest hierarchical entry.

The semi-partial regression models for objective paper and pencil tests and informal observations resulted in none of the independent variables contributing significantly to this model. Table 15 presents the semi-partial regression on the use of standardized test scores. Two independent variables were shown to be significant in explaining the variation: Health Occupations (dummy coded variable) and Constraints. In each case the partial regression coefficient was shown to be significant at the .05 level with \( t \) values of 3.14 and 2.19 respectively. An interpretation of the partial regression coefficient for health occupations (\( b = .405 \)) indicated that those instructors in the health occupations areas were more likely to use standardized test scores than other program areas. Those instructors who felt potential constraints (\( b = .555 \)) in the assessment process tended to use standardized test scores more than those whose perceptions of potential constraints in the assessment process were lower.
The squared multiple correlation coefficient indicates that 12% of the variance in use of standardized test scores was accounted for by the linear combination of health occupations (program area) and potential constraints to assessment. This value was significant ($F = 10.11, p < .001$). The semi-partial statistics indicate that teaching in the program of health occupations uniquely accounts for 9.2% of the variance in use of standardized test scores while perceived constraints in assessment uniquely accounts for 2.8%.

<table>
<thead>
<tr>
<th>Variables</th>
<th>$\beta R^2$</th>
<th>$b$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Occupations</td>
<td>.092</td>
<td>.405</td>
<td>3.14</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>(Program Area)$^a$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential Constraints</td>
<td>.028</td>
<td>.555</td>
<td>2.19</td>
<td>.03</td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>.329</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Standard error = 1.01  
$R^2 = .120$  
Adjusted $R^2 = .108$  
For model: $F = 10.11, p < .001$

$^a$Multichotomous variables were dummy coded: Health = 1 and Other = 0

Table 15: Semi-Partial Regression of Use of Standardized Test Scores On All Independent Variables (n = 158) (Stepwise Entry)
The regression of use of performance assessment on all independent variables is illustrated in Table 16. The variable attitude was shown to significantly contribute to explaining 11.2% of the variance in the use of performance assessment. This model was considered to be significant ($F = 18.73, p < .001$).

The partial regression coefficient for instructors' attitude was considered to be significant with a $t$ value of 4.33 and $p < .001$. The more positive attitude that instructors had toward the assessment process ($b = .248$) the more likely they were to use performance assessments.

### Table 16: Semi-Partial Regression of Use of Performance Assessment On All Independent Variables ($n = 158$) (Stepwise Entry)

<table>
<thead>
<tr>
<th>Variable</th>
<th>$sR^2$</th>
<th>$b$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>.112</td>
<td>.248</td>
<td>4.33</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td></td>
<td>2.45</td>
<td></td>
</tr>
</tbody>
</table>

Standard error = .742  
$R^2 = .112$  
Adjusted $R^2 = .106$  
For model: $F = 18.73, p < .001$

The next statistical model regressed the dependent variable, use of portfolios, on all independent variables (Table 17). The program area of marketing (dummy coded
variable), perception of possible constraints to assessment, attitude towards assessment, and level of competence were shown to explain 17% variance in the use of portfolios. The program area of marketing uniquely accounted for 6.5% of the variance in use of portfolios; perception of possible constraints to assessment uniquely contributed 2.9%; attitude towards assessment uniquely contributed 4.3%; and competence level contributed 3.3%.

The partial regression coefficients for marketing (program area), perception of possible constraints to assessment, attitude towards assessment, and competence level were shown to be significant at $p< .05$. The results indicated marketing instructors ($b=1.53$) tended to use portfolios more than instructors in other program areas. Instructors that had a higher perception of possible constraints to assessment ($b= -.581$) tended to use portfolios less than those with lower perceptions of possible constraints to the assessment process. Instructors with more positive attitudes towards assessment ($b=.184$) and higher level of competence ($b=.367$) tended to use portfolios more than instructors with less positive attitudes and weaker competence in assessment.
<table>
<thead>
<tr>
<th>Variables</th>
<th>$\hat{b}$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing (Program Area)*</td>
<td>1.53</td>
<td>3.49</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Potential Constraints</td>
<td>-0.581</td>
<td>-3.30</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.184</td>
<td>2.38</td>
<td>.018</td>
</tr>
<tr>
<td>Competence</td>
<td>0.367</td>
<td>2.46</td>
<td>.015</td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Standard error = .935
$R^2 = .17$
Adjusted $R^2 = .15$
For model: $F = 7.37$, $p < .001$

*Multichotomous variables were dummy coded: Marketing = 1 and Other = 0

Table 17: Semi-Partial Regression of Use of Portfolios On All Independent Variables ($n = 158$) (Stepwise Entry)

Table 18 displays the results from the regression of use of essay type assessment methods on marketing (program area) and business occupations (program area). The squared multiple correlation coefficient indicated that 6.4% in use of essay type assessment methods was uniquely explained by the linear relationship of the independent variables in the regression model. This model was significant at $F= 5.08$ with $p< .001$.

Marketing (program area) and business occupations (program area) were each found to uniquely contribute a small but significant amount of variance in use of essay
assessment methods. Marketing (program area) accounted for 3.3% of unique variance in use of essay assessment methods, and business occupations accounted for 3.1% of unique variance.

The partial regression coefficients for the program areas of marketing and business occupations (when dummy coded) were shown to be significant ($p < .05$). Instructors in marketing were more likely to use essay assessment methods ($b = 1.26$) than instructors in all other program areas. Similarly, business occupations instructors were more likely to use essay assessment methods ($b = .448$) than instructors in all other program areas.

<table>
<thead>
<tr>
<th>Variables</th>
<th>$sR^2$</th>
<th>$b$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing (Program Area)$^a$</td>
<td>.033</td>
<td>1.26</td>
<td>2.51</td>
<td>.013</td>
</tr>
<tr>
<td>Business Occupations (Program Area)$^a$</td>
<td>.031</td>
<td>.448</td>
<td>2.23</td>
<td>.027</td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td></td>
<td></td>
<td>2.35</td>
</tr>
</tbody>
</table>

Standard error = 1.077
$R^2 = .064$
Adjusted $R^2 = .052$
For model: $F = 5.08$, $p < .001$

$^a$Multichotomous variables were dummy coded: Marketing = 1 and Other = 0. Business Occupations = 1 and Other = 0

Table 18: Semi-Partial Regression of Use of Essay Methods On All Independent Variables (n = 158)(Stepwise Entry)
CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This descriptive study was designed to describe instructors' use of assessment methods in post-secondary technical and occupational classrooms and laboratories. The study investigated the relationships between use of student assessment information and characteristics of post-secondary technical and occupational instructors in Ohio. The instructor characteristics that served as the independent variables in this study were the following: instructor attitude towards assessment, potential constraints to the assessment process, instructor perceived level of competence in assessment, years of work experience, years of teaching experience, program area, education level, age, and gender.

Summary of Procedures

Recent research conducted on the quality and effectiveness of education on measurement and assessment for
general education instructors has implied that these individuals may not be acquiring the appropriate skills that are necessary to use different assessment skills effectively. If this is true for general education instructors, what are the assessment skills needed by post-secondary technical and occupational instructors? Information on the assessment skills needed and use of assessment information by technical and occupational education instructors was not available.

The purpose of this study was to describe assessment activities, problems, attitudes, and perceptions of Ohio post-secondary technical and occupational education instructors. The specific objectives of this study were to:

1. Describe Ohio post-secondary technical and occupational education instructors in terms of the following demographic characteristics: age, gender, related work experience, teaching experience, program area taught, and educational level.

2. Describe Ohio post-secondary technical and occupational education instructors' perceptions of the use of student assessment information in making instructional decisions.
3. Describe how Ohio post-secondary technical and occupational education instructors perceive potential constraints they face while conducting assessment activities.

4. Describe Ohio post-secondary technical and occupational education instructors' attitudes toward the assessment process.

5. Describe Ohio post-secondary technical and occupational education instructors' perceptions of their level of competence in the assessment process.

6. Examine the relationships between Ohio post-secondary technical and occupational education instructors' use of assessment information and the following:
   a. selected demographic characteristics,
   b. perceived level of competence in the assessment process,
   c. their attitudes toward assessment, and
   d. potential constraints faced by instructors while conducting assessment activities.

7. Determine the proportion of variance in Ohio post-secondary technical and occupational education teachers' perceived use of assessment information
in instructional decision making that can be explained by the independent variables of attitude toward assessment, competence in the assessment process, potential constraints faced by instructors while conducting assessment activities, and selected demographic characteristics.

Data for this study were collected through the use of a mailed questionnaire. A five-part questionnaire was modified by the researcher, validated by a panel of nine experts, and assessed for reliability. To measure internal consistency, Cronbach's alphas were calculated and ranged from .77 to .94 for each of the six sections of Part I, .85 for the 21 summed items in Part II, and .54 for the sum of the nine items in Part IV of the instrument. Test-retest data were collected to test for consistency over time. Results from the test-retest method ranged from .85 to 92.

The instrument was mailed to a random sample of post-secondary technical and occupational instructors in Ohio (n=318). Usable responses were received from 49.7% of those surveyed (n=158). To account for non-response error, a 10% random sample of non-respondents was selected and interviewed by telephone. However, in order to obtain the 10% sample it was necessary to contact slightly more than
20% of the nonrespondents. Differences between non-respondents and respondents on each part of the questionnaire were compared using a t-test. No significant differences were found between non-respondents and respondents on the variables of interest.

Frequencies, percentages, measures of variability and central tendencies were used to profile the Ohio post-secondary technical and occupational instructors within the sample. Measures of association were used to determine the linear relationships between use of assessment information and competence in assessment, attitude towards assessment, constraints to assessment, and all demographic and background characteristics. Semi-partial multiple regression analyses were used to determine the proportion of variance in the use of each assessment method that could be explained by linear combination of statistically significant independent variables.

**Summary of Findings**

The following section summarizes the findings of this study. It is organized by the study's objectives.

**Demographic and Background Characteristics of the Sample**

This study examined six demographic and background characteristics for the sample which included age, gender, years of teaching experience, years of work experience,
program area, and level of education. From the variable of age it was found that 44.2% of the sample were in an age group which ranged from 40-49 years. Slightly more than twenty-seven percent of the sample were between 50-59, and 16.2% were between 30-39 years of age. Instructors ranged in age from 25 to 67 with a mean age of 47.03. Gender data revealed that females comprised 57% and males 43% of the sample.

Years of teaching experience ranged from one to 38 years with the mean being 15 years of experience. The largest group of instructors (23.1%) taught for 16-20 years while the smallest group (2.6%) taught for more than 31 years. In terms of related work experience, 12.3% had 16-20 years of related work experience prior to or concurrent to teaching, 18.8% had 11-15 years, and 24.7% had 6-10 years. Slightly more than thirty-four percent had 0-5 years of related work experience.

Health occupations comprised the largest group in the study with 38.5% of all instructors. Business occupations also contributed a large portion of instructors to the study with 26.3%, and was followed by engineering at 12.8%. Agriculture, family and consumer sciences and human services contributed less than two percent each.
The majority of the respondents had completed a graduate degree (80%). Slightly less than ten percent had completed some graduate work, and less than six percent had a bachelors degree.

Use of Assessment Information

Instructors rated assessment information provided from objective paper and pencil methods (Mean=3.92) as being more useful in making instructional decisions than information from the other five assessment methods. Performance assessment was rated second highest by instructors for providing information in making decisions (Mean=3.78). Information derived from informal observations was rated third (Mean=3.64), essay items were fourth (Mean=2.49), and standardized test scores rated fifth (Mean=1.90). Portfolios provided information that was deemed of the least use by instructor in making educational decisions (Mean=1.78).

Potential Constraints to Assessment

Over one-half (55.1%) of the instructors neither agreed nor disagreed that they faced potential constraints while conducting their assessment activities. Slightly more than forty-two percent of instructors were in agreement that they faced potential constraints when conducting assessment activities, while slightly more than one percent disagreed.
potential constraints affected their assessment activities. For four of the nine items developed to measure potential constraints, instructors neither agreed nor disagreed that these potential constraints affected them in their assessment activities. Instructors did agree that additional planning time would allow them to use assessment methods more effectively, funds should be provided to buy published assessment material and instructors should have access to published assessment materials. Instructors strongly agreed that they should decide what assessment methods to use in the courses they teach and that equipment should be available for instructors to use in scoring test.

Instructors' Attitude Toward Assessment

Post-secondary instructors reported having a more positive (81.1%) than negative (5%) attitude towards assessments. The remaining instructors (13.9%) in this study reported being neutral in their attitude towards assessment.

Perceived Level of Competence in Assessment

A measure of perceived competence in assessment was calculated using post-secondary instructor responses to 21 competency statements. The summed scores across the 21 statements indicated that slightly less than six percent of technical and occupational instructors considered themselves
to be extremely competent in the overall assessment process, 51.9% to be very competent, and 42.4% to be moderately competent. None of these instructors considered themselves to be slightly competent or not competent in assessment.

Relationships Between Dependent and Independent Variables

Potential constraints faced by instructors when conducting assessment activities was found to have a low association with the use of standardized test scores ($r = .25$) and performance assessment ($r = .20$). Attitude towards assessment had a moderate positive association ($r = .33$) with the use of performance assessment. Program area had a substantial association ($r^2 = .58$) with the use of essays as an assessment method, and competence in assessment had a low positive association ($r = .18$) with instructor use of information from portfolios as an assessment method.

Regression of Dependent Variable Upon the Independent Variable

Program area was dummy coded and entered into the multiple regression models. The demographic variable of program area was shown to account for a small but significant amount of variation in instructors' use of certain assessment methods.

It was found that instructors within different program areas placed more weight upon the use of portfolios as an
assessment tool. The program area of marketing accounted for more than six percent of the variation of using portfolios in making instructional decisions. However, there was not a statistically significant association between program area and the use of portfolios as an assessment method. Program area was found to have a substantial association ($r^2 = .58$) with the use of essay methods for making educational decisions. Two program areas (marketing and business occupations) each accounted for slightly more than three percent of the variation in the use of essay methods in making instructional decisions.

Instructors' attitudes toward assessment had a moderate positive association ($r = .33$) with the use of performance assessment and was found to explain 11.2% of the variation in instructors' use of the assessment method. Attitude towards assessment was also found to explain 4.3% of the variation in instructors' use of portfolios as an assessment method.

Potential constraints faced by instructors during the assessment process only explained 2.8% of the variation in the instructor's use of both standardized test scores and portfolios. There was not a statistically significant association between attitude towards assessment and use of portfolios, yet when it was entered into a regression model
with three other variables (marketing, constraints, competence) it explained 4.3% of the variation in instructors' use of portfolios as an assessment method.

Competency level was found to contribute only 3.3% of the variation in instructors' use of portfolios. While competence accounted for a small percent of variation in instructors' use of portfolios as an assessment method, it did not explain a significant amount of variance in the use of objective paper and pencil methods, standardized test scores, performance assessments, informal observations, and essay assessment methods.

Conclusions

This section contains the conclusions that were reached based upon the findings from this study. Comparisons also are made to previous research on the use of assessment for the support of these conclusions. As a reminder, an attempt was made to control for nonresponse error by comparing nonrespondents to respondent. Over sampling of the nonrespondents was necessary to obtain a sufficient number of respondents to make a comparison using a t-test. Therefore, the results of this study technically cannot be generalized to the population.
Demographic and Background Characteristics of the Sample

Health occupations had the largest number of instructors that responded to the survey. The second highest number of respondents were from business occupation programs, followed by engineering. Agriculture, family and consumer sciences and human services made up only a small percentage of respondents. The majority of respondents had a graduate degree.

Use of Assessment Information

Previous studies on assessment found that academic teachers tended to use objective tests and informal observation the most (Yeh et al., 1981; Dorr-Bremme, 1983; Gullickson, 1984; Stiggins & Bridgeford, 1985; Dorr-Bremme and Herman, 1986; Stiggins & Conklin, 1992; Kershaw, 1993). Results from this research study support the findings of previous studies. Respondents reported using performance assessments somewhat more than informal observations. Stiggins and Conklin (1992) found that academic teachers placed more reliance on their own objective type assessment activities rather than on performance assessments for making instructional decisions. Stiggins and Conklin also found that writing and speech teachers placed a heavier reliance on performance tests than did other teachers of academic subjects. Since technical and occupational instructors
teach subjects that involve many student performance activities, it was somewhat surprising that objective paper and pencil methods of assessment were used more than performance assessments. Kershaw (1993) found that secondary vocational teachers tended to place more emphasis upon the use of performance assessments than any other assessment methods. He concluded that the emphasis on use of performance assessment by secondary teachers was partly due to the use of a competency-based curriculum within vocational education.

Standardized test scores were found to be of little use in making instructional decisions by the respondents. This study supported the findings from other studies (Goslin, 1967; Yeh et al., 1981; Green, 1990; Kershaw, 1993) regarding the lack of use of standardized test scores by educators in making educational decisions. The use of standardized testing, even after many years of availability, continued to be minimal.

Portfolios were found to be the least used source of information for decision-making. Although this assessment method continues to be promoted as an effective assessment method within education, instructors who responded tended not to use the information generated from portfolios. A reason for the low usage of portfolios may be that they were
a relatively new way of assessing students in post-secondary technical and occupational programs. Post-secondary instructors may not have realized the importance of this long-term assessment method and may have yet to build this method into their overall assessment system.

Potential Constraints to Assessment

Post-secondary technical and occupational instructors within this study were split between agreeing and neither agreeing nor disagreeing regarding potential constraints to the assessment process. The results of this study were similar to those findings reported by Gullickson (1984). Kershaw (1993) also found similar results in his study of secondary vocational teachers. In addition to the predominately neutral findings, other studies found that limited time for planning was the constraint which received consistent higher levels of agreement.

Instructors' Attitude Toward Assessment

For the most part, the respondents had positive attitudes toward assessment and were in agreement with those reported by Green (1990) where attitudes of both preservice and experienced teachers towards classroom assessment were positive. Additionally, Kershaw (1993) found that secondary teachers tended to have a positive attitude toward assessment. The positive attitudes possessed by these post-
secondary instructors may be due to fact that they understand the importance of assessment and know that it is an integral part of the overall instructional process.

**Perceived Level of Competence in Assessment**

Technical and occupational educators in this study reported that they perceived themselves to be moderately to extremely competent in the assessment process. These results were in line with findings from Gullickson and Hopkins (1987) that described teachers as being comfortable in their knowledge and abilities related to the assessment process. Dorr-Bremme (1983) also concluded that teachers perceived their use of assessment techniques as accurately measuring the effects of their instruction.

Results from this study in the area of the competency level of instructors in assessment were in conflict with other similar research. Previous research found that teachers were lacking the necessary skills in assessment selection, development, and use (Newman & Stallings, 1982; Carter, 1984; Hills, 1991). In addition, Gullickson and Hopkins (1987) and Schafer and Lissitz (1987) supported the position that preservice courses have not been adequate in developing the level of desired assessment skills in teachers.
From previous research, there has been evidence to suggest that teachers may tend to exaggerate their level of competence in assessment when data is obtained in a self-reported manner. Marso and Pigge (1989) found that teachers, principals, and supervisors do not agree on the proficiency level of teachers’ test construction and test planning proficiencies. Teachers tended to rate themselves as much more proficient in assessment than did their supervisors or principals. Findings reported by Green and Williams (1989) indicated that teachers with less training in tests and measurements perceived themselves to be more knowledgeable about interpreting standardized test scores than teachers with more training in this area.

If the instructors’ perceived competence levels can be interpreted as being exaggerated, then the findings that 42.4% of instructors reported a moderate level of competence in assessment becomes more important. The higher levels of perceived competence, the small significant relationship between perceived competence and the use of portfolios, and the past research that identified the deficiencies of teacher assessment skills suggest the potential need for the upgrading of technical and occupational education instructor competence in assessment practices.
Relationships Between Dependent and Independent Variables

Program areas had a substantial association with the use of essays as an assessment method. This finding tended to indicate that respondents from marketing and business occupations used essay methods more than their counterparts in other technical and occupational programs. Competence in assessment had a low positive association with instructor use of information from portfolios as an assessment method indicating that respondents who perceived themselves as more competent in assessment tended to be more likely to use portfolios as a means of assessment.

A moderate relationship was present between attitude and use of performance assessment, which conflicts with some of the previous research. Green and Stager (1986) concluded that the relationship between attitude and assessment use was of no practical importance. Kershaw (1993) also concluded that the relationship between attitude and assessment use was of little importance. The results of this study indicated that although attitude may not be important in the use of all the different types of assessment methods, it was of some importance when using performance assessment.
Regression of Dependent Variable Upon the Independent Variables

This study failed to demonstrate that instructor characteristics accounted for much of the variation in their use of assessment information. Age, gender, years of teaching experience, years of related work experience, and educational level did not account for a significant proportion of the variation in the respondents' use of any assessment method. Findings from this study were similar to Kershaw (1993). These findings were not in agreement with a study conducted by Yeh (1981) who found that years of teaching experience was related to different patterns of assessment use.

Though there was not a statistically significant association between program area and standardized test scores, it was found that the health occupations program area explained nine percent of the variation in the instructors' use of standardized test scores. This may have been due to the use of standardized test scores as an entry and exit requirement for students in many health occupation programs.

Program area was found to have a substantial association with the use of essay methods for making educational decisions. Two program areas (marketing and
business occupations) each accounted for three percent of the variation in the use of essay methods in making instructional decisions. This indicated that essay methods may be used more by instructors in marketing and business occupation programs than instructors in other program areas.

This study was unable to support the claim that potential constraints faced by instructors while conducting assessment activities played a major part in explaining variation in instructor use of assessment methods. The use of two assessment methods (portfolios and performance assessments) were shown to be related to constraints faced by instructors while conducting assessment activities, but a very small proportion of variance was explained by these constraints.

Competence accounted for a small percent of variation in instructors' use of portfolios as an assessment method, however, it did not explain a significant amount of variance in the use of objective paper and pencil methods, standardized test scores, performance assessments, informal observations, and essay assessment methods. These findings were slightly different than what Kershaw (1993) found. Kershaw found that competence in assessment contributed a significant, yet small portion of variance in teachers' use of objective paper and pencil methods, use of performance
assessment and use of informal observation. He further concluded that there was little practical variance explained with portfolios, essays, and standardized tests.

Recommendations

Recommendations from the results of this study will be made for practice and future research. Based upon the review of literature, the findings of this study, and the previous conclusions, the following recommendations are proposed.

Recommendations for Research

1. Because this study was able to explain only a small amount of variance in post-secondary technical and occupational instructors' use of assessment methods, it is recommended that each of these methods be studied independently. Also, it is suggested that qualitative research be conducted on each of the assessment methods to help identify other variables that may contribute additional variance in explaining the use of assessment information in making educational decisions. Open-ended responses could be collected regarding instructor attitude towards assessment, competence in assessment, and potential constraints in the assessment process.
2. Since attitude towards the overall process contributed little to understanding the use of assessment by instructors, it is recommended that future research relate this attitude towards the specific assessment methods. What are instructors' attitudes towards objective paper and pencil assessment methods, standardized testing, performance assessment, informal observations, portfolios, and essay methods? Information gathered on the attitudes towards each assessment method may explain more about the use of these methods by educators.

3. Individual competence in assessment was rated rather high by instructors in this study, yet it only explained a small proportion of variation in the use of assessment methods. It is recommended that future research investigate the level of competence of the instructors in each assessment method. What level of competence do instructors have when dealing with objective paper and pencil assessment methods, standardized testing, performance assessment, informal observations, portfolios, and essay methods? Information generated on the level of competence with each
assessment method may find different levels of competence within each assessment method. Research such as this may also identify strengths and weaknesses that instructors have related to the assessment process. This data would be valuable to in-service and pre-service teacher education programs in updating their courses and workshops.

4. Instructors rated their level of competence on the high side in this study, yet it explained little of the variation in the use of assessment methods. This may indicate that instructors overstated their competence level. For future research on the level of instructors' competence, it is suggested that self-reported competence levels be compared with observed instructors' competence level. In addition, since competence in certain areas has been found to be related to education within that area, it is recommended that research be undertaken to collect information at the different colleges and universities (within the different vocational areas) to determine how many of the courses in the pre-service technical and occupational education curriculum concentrate on
assessment methods as well as what assessment methods are emphasized within these courses.

5. To provide technical and occupational instructors with ideas on how the different types of assessment can be used within their specific programs, it is recommended that research be conducted to investigate and collect examples of how instructors (within the different program areas) use the different assessment methods. If instructors are able to see specific ways that these assessment methods are used, they may be better able to implement these assessment techniques within their individual programs.

6. Recent emphasis on the development of national skill standards will have an impact upon assessment in technical and occupational programs. Future research should investigate whether and how technical and occupational instructors are using these standards as an assessment tool.
7. It is recommended that the findings from this research be compared to what is being taught in pre-service and in-service teacher education programs. It may be that instructors are only assessing students with methods with which they are familiar.

8. The general population has started calling for public educational institutions to be more accountable. One measure of accountability is the level of proficiency of the students. Students tested with a variety of assessment methods will provide more evidence to the public that these students are learning what they are supposed to learn. With this in mind, instructors need to be able to use different kinds of assessment methods. The public is no longer just interested in the product of post-secondary technical and occupational programs, they are also interested in the process in these programs. It is recommended that assessment use by educators be investigated at all levels of education.
Recommendations for Practice

1. Findings from this study indicate that certain demographic characteristics have little bearing on the use of different assessment methods. These characteristics include years of teaching experience, years of related work experience, educational level, and age. This suggests that either assessment practices change very little as an instructor gains instructional and educational experiences or that instructor assessment strategies and preferences developed early in their careers are changed very little over a period of time. With this in mind, it is recommended that pre-service and in-service educators provide a curriculum that includes different assessment methods and how these methods can be used in the different program areas. Post-secondary educational institutions should provide some means of recognizing those instructors that use different assessment methods within their individualized programs.

2. National skill standards are being developed or have been developed for different technical and occupational areas. Since our population is
becoming more mobile, it is suggested that post-secondary technical and occupational instructors determine how students within their program areas can meet national skill standards.

3. Post-secondary technical and occupational instructors within this study were not using standardized test results. Instructors within the different program areas need to be educated about how they may use standardized test scores to enhance their programs and student achievement.

4. It is recommended that technical and occupational instructors continue to use performance assessments within their programs. The use of other assessment methods may not be as appropriate for measuring learning in such a performance based environment.

5. Data gathered from this study indicated that the different types of assessment methods are not evenly used. This could be due to the lack of understanding by instructors of other assessment techniques. The different assessment methods may be prime candidates for topics of in-service opportunities for instructors.
6. Student achievement levels can vary by the different ways they are assessed, so it is important students are provided the opportunity to demonstrate their knowledge and skill level in a variety of ways. Within the field of education, certain assessment methods tend to be used more than other assessment methods. Instructors should determine how and whether these assessment methods can be used within their program areas, but they should not shift all of their assessment activities to just one method.

7. There is a saying that "we teach how we are taught". If this is true about teaching, then it may also be appropriate for assessment. University faculty should use different types of assessment methods within their classes to serve as examples for their students.
APPENDIX A

Instrument
ASSESSMENT IN POST-SECONDARY TECHNICAL/OCCUPATIONAL EDUCATION

USING INFORMATION FOR MAKING INSTRUCTIONAL DECISIONS
INTRODUCTION

This questionnaire consists of five parts with directions provided at the beginning of each section. Please answer all questions. All answers will be kept confidential.

Please take a moment to familiarize yourself with the key terms that will be used throughout the questionnaire.

Assessment: Refers to the overall process of gathering and using information on student knowledge and performance. Instructors commonly use this information for measuring learning and improving instruction. The six items below are methods used to assess student knowledge and performance.

1. **Objective paper and pencil methods**: These are classroom tests, quizzes or exercises that are generally made up of multiple-choice, true/false, matching, and short-answer questions.

2. **Standardized test scores**: This category covers locally purchased, state-wide, and nation-wide tests. These tests may be either norm referenced or criterion referenced. Examples of such tests would include American College Testing Service of Student Skills for Entry Transfer (ASSET) and Adult Basic Education test.

3. **Performance assessment**: These are planned activities in which you observe students in the process of doing things or for which you examine products created by students. This assessment would have pre-specified purposes, exercises, observations and scoring procedures. Examples of performance assessment could include certification/licensure tests, individual projects, group projects, oral presentations, and experiments.

4. **Informal measures**: These are methods used in a spontaneous way with naturally occurring classroom/laboratory events. The two methods in this category are observations you make and oral questions you ask.

5. **Portfolios**: A portfolio is a collection of student work which reflects student achievement over time. Examples of what portfolio might contain are drawings, photographs, written documents, tests, notes, and especially comments from the student, teachers and peers.

6. **Essay-type methods**: These items require extended written responses to questions, problems or situations. Responses will not be as structured as in objective methods. Examples include essay test items and written papers.
PART 1
USE OF ASSESSMENT INFORMATION

Directions: For each question below please indicate the extent to which you use results from each of the six assessment methods in making instructional decisions. Circle the number which best indicates your response by using the following scale.

Key: 1 = Never
2 = Rarely
3 = Sometimes
4 = Very Often
5 = Always

Example:

1. When communicating student achievement to the individual student, how often do you use the results from each of the following assessment methods?
   a. Objective paper and pencil methods ............. 1 2 3 4 5

By circling 3, this individual indicated that objective paper and pencil methods were sometimes used in providing information when communicating student achievement with the individual student.

1. When planning for instruction, how often do you use the results from each of the following assessment methods?
   a. Objective paper and pencil methods ............. 1 2 3 4 5
   b. Standardized test scores ......................... 1 2 3 4 5
   c. Performance assessments ......................... 1 2 3 4 5
   d. Informal observations ............................ 1 2 3 4 5
   e. Portfolios .............................................. 1 2 3 4 5
   f. Essay methods ...................................... 1 2 3 4 5

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2. When diagnosing student weaknesses, how often do you use the results from each of the following assessment methods?

   a. Objective paper and pencil methods .................. 1 2 3 4 5
   b. Standardized test scores ............................... 1 2 3 4 5
   c. Performance assessments ............................... 1 2 3 4 5
   d. Informal observations .................................. 1 2 3 4 5
   e. Portfolios ............................................... 1 2 3 4 5
   f. Essay methods .......................................... 1 2 3 4 5

3. When monitoring student progress toward course objectives, how often do you use the results from each of the following assessment methods?

   a. Objective paper and pencil methods .................. 1 2 3 4 5
   b. Standardized test scores ............................... 1 2 3 4 5
   c. Performance assessments ............................... 1 2 3 4 5
   d. Informal observations .................................. 1 2 3 4 5
   e. Portfolios ............................................... 1 2 3 4 5
   f. Essay methods .......................................... 1 2 3 4 5

4. When motivating students to learn, how often do you use the results from each of the following assessment methods?

   a. Objective paper and pencil methods .................. 1 2 3 4 5
   b. Standardized test scores ............................... 1 2 3 4 5
   c. Performance assessments ............................... 1 2 3 4 5
   d. Informal observations .................................. 1 2 3 4 5
   e. Portfolios ............................................... 1 2 3 4 5
   f. Essay methods .......................................... 1 2 3 4 5

5. When evaluating the effectiveness of your instruction, how often do you use the results from each of the following assessment methods?

   a. Objective paper and pencil methods .................. 1 2 3 4 5
   b. Standardized test scores ............................... 1 2 3 4 5
   c. Performance assessments ............................... 1 2 3 4 5
   d. Informal observations .................................. 1 2 3 4 5
   e. Portfolios ............................................... 1 2 3 4 5
   f. Essay methods .......................................... 1 2 3 4 5
6. When evaluating the instructional materials you use, how often do you use the results from each of the following assessment methods?

   a. Objective paper and pencil methods ...................................
   b. Standardized test scores ...................................................
   c. Performance assessments ............................................... 
   d. Informal observations ...................................................
   e. Portfolios ........................................................................ 
   f. Essay methods ............................................................... 

   Never  Always
   (Circle one answer on each)

   1  2  3  4  5

7. When encouraging students to assess their own work, how often do you use the results from each of the following assessment methods?

   a. Objective paper and pencil methods ...................................
   b. Standardized test scores ...................................................
   c. Performance assessments ............................................... 
   d. Informal observations ...................................................
   e. Portfolios ........................................................................ 
   f. Essay methods ............................................................... 

   Never  Always
   (Circle one answer on each)

   1  2  3  4  5

8. When assigning grades, how often do you use the results from each of the following assessment methods?

   a. Objective paper and pencil methods ...................................
   b. Standardized test scores ...................................................
   c. Performance assessments ............................................... 
   d. Informal observations ...................................................
   e. Portfolios ........................................................................ 
   f. Essay methods ............................................................... 

   Never  Always
   (Circle one answer on each)

   1  2  3  4  5

9. When grouping students for instructional activities, how often do you use the results from each of the following assessment methods?

   a. Objective paper and pencil methods ...................................
   b. Standardized test scores ...................................................
   c. Performance assessments ............................................... 
   d. Informal observations ...................................................
   e. Portfolios ........................................................................ 
   f. Essay methods ............................................................... 

   Never  Always
   (Circle one answer on each)

   1  2  3  4  5

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## PART 2

### COMPETENCE IN ASSESSMENT

**Directions:** Each statement below represents an instructor competency in the assessment process, e.g. **communicating assessment results to students.** For each statement, circle the number at right which best represents your perceived level of competence.

**Key:**

1 = Not Competent  
2 = Slightly Competent  
3 = Moderately Competent  
4 = Very Competent  
5 = Extremely Competent

**Example:**

1. Selecting methods for the assessment of student performance ........................................ 1 2 3 4 5

By circling 2, this individual perceived his/her competence level as **slightly competent** for selecting methods for the assessment of student performance.

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<thead>
<tr>
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<th>Not Competent</th>
<th>Extremely Competent</th>
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1. Selecting assessment methods for monitoring student learning ........................................ 1 2 3 4 5
2. Identifying weaknesses of assessment methods ........................................ 1 2 3 4 5
3. Developing a rating scale upon which to base student assessment ........................................ 1 2 3 4 5

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<td>Selecting a representative sample of items to use for assessment purposes</td>
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<td>5</td>
<td>Determining appropriate number of items for assessment methods</td>
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<td>2</td>
<td>3</td>
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<td>6</td>
<td>Determining difficulty of items</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>7</td>
<td>Examining items for gender bias</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>8</td>
<td>Writing directions for assessment methods</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>Matching items to intended learning outcomes</td>
<td>1</td>
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<td>10</td>
<td>Evaluating a student portfolio</td>
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<td>11</td>
<td>Preparing students to take tests</td>
<td>1</td>
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<td>Grading objective paper and pencil items</td>
<td>1</td>
<td>2</td>
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<td>13</td>
<td>Administering a performance assessment</td>
<td>1</td>
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<td>14</td>
<td>Grading a performance assessment</td>
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<td>15</td>
<td>Evaluating an essay</td>
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<td>16</td>
<td>Validating test items</td>
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<td>Interpreting scores of standardized achievement tests</td>
<td>1</td>
<td>2</td>
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<td>18</td>
<td>Using assessment results to organize an instructional plan</td>
<td>1</td>
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<td>19</td>
<td>Using assessment results to monitor student learning</td>
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<td>2</td>
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<td>20</td>
<td>Communicating assessment results to students</td>
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<td>2</td>
<td>3</td>
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<tr>
<td>21</td>
<td>Examining items for racial bias</td>
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<td>2</td>
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PART 3
YOUR ATTITUDE TOWARD ASSESSMENT

Directions: The term assessment is described below using eight pairs of opposite adjectives. Place a check mark within each scale (✓:) that best indicates how you would describe your attitude toward the overall assessment process. The closer you place a check to one of the adjectives the stronger it describes your attitude towards assessment.

Example: The adjectives "Positive" and "Negative" are given. You believe that "Positive" best describes your attitude towards assessment. You would place your check mark as follows:


If "Positive" only slightly represents your attitude towards assessment then you would place your check mark as follows:

Negative ___ : ___ : ___ : ___ : ✓ : ___ : ___ Positive

Always place your check mark in the middle of the space.

Like this
: ___ : ✓ : ___ :
Not like this
: ___ : ___ : ___ :

Respond to each set of adjectives by placing a check mark in the appropriate location.

Assessment

PART 4

CONSTRAINTS IN ASSESSMENT

Directions: Each statement below represents a potential constraint you may face when conducting assessment activities. For each statement below, please circle the number to the right which best indicates your level of agreement or disagreement. Remember, there are no right or wrong answers.

Key:

1 = Strongly Disagree
2 = Disagree
3 = Neither Agree or Disagree
4 = Agree
5 = Strongly Agree

Example:

1. Instructors should have a secretary to assist them typing student tests .................................... 1 2 3 4 5

By circling 4, this individual indicated that he/she agrees with the statement that he/she should have a secretary to assist him/her in typing student tests.

1. Instructors should decide what assessment methods to use in the courses they teach .................................... 1 2 3 4 5

2. Instructors should have an assistant to help them prepare student assessment activities .................................... 1 2 3 4 5

3. Instructors do not have access to published assessment materials .................................... 1 2 3 4 5

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4. Quality published assessment materials are difficult to locate ........................................ 1 2 3 4 5
5. Equipment should be available for instructors to use in scoring tests ...................................................... 1 2 3 4 5
6. Additional planning time would allow me to use assessment methods more effectively ............................. 1 2 3 4 5
7. Funds should be provided to buy published assessment material ................................................................. 1 2 3 4 5
8. College courses were of little help in preparing me to assess student learning ........................................... 1 2 3 4 5
9. Instructors should have assistants to help them evaluate student work ......................................................... 1 2 3 4 5

(Circle one answer on each)
PART 5
GENERAL INFORMATION

Directions: We would like to ask some information about your background. All information will remain confidential. Please check or fill in the appropriate response.

1. Indicate your gender.

   _____ FEMALE
   _____ MALE

2. How many years have you been employed as an instructor?

   _____ YEARS

3. How many years of work experience do you have in the subject area you are teaching? This should not include your years of teaching.

   _____ YEARS

4. Which of the following categories best describes the area in which you presently teach? (Check only one)

   _____ AGRICULTURE
   _____ BUSINESS OCCUPATIONS
   _____ MARKETING
   _____ FAMILY AND CONSUMER SCIENCES
   _____ TRADE AND INDUSTRIAL
   _____ HEALTH OCCUPATIONS
   _____ ENGINEERING
   _____ HUMAN SERVICES
   _____ OTHER (please specify) ____________________

5. Please check your highest level of education attained.

   _____ HIGH SCHOOL DIPLOMA OR EQUIVALENT
   _____ SOME COLLEGE
   _____ ASSOCIATE DEGREE
   _____ BACHELOR DEGREE
   _____ SOME GRADUATE WORK
   _____ MASTER'S DEGREE
   _____ DOCTORATE
   _____ OTHER (please specify) ____________________

6. Your present age:

   _____ YEARS

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APPENDIX B

Cover Letter
May 21, 1996

FIELD(1)

Dear FIELD(2):

The public is demanding community colleges and technical institutes be more accountable for student learning outcomes. To document the effectiveness of post-secondary technical/occupational education, instructors can rely on locally and state developed assessment techniques, nationally recognized instrumentation, and occupational licensure/certification. Additionally, the daily information that instructors collect in the classroom and laboratory also has tremendous potential for use in documenting and enhancing student learning. However, information on the use of assessment data by post-secondary technical/occupational education instructors for making educational decisions is not available.

We are conducting a study of Ohio post-secondary technical/occupational education instructors to identify the characteristics of assessment practices used in their classrooms and laboratories. You are one of 318 post-secondary technical/occupational instructors from Ohio that were randomly selected to participate in this study. In order for the results of the study to truly be representative, it is important that each survey be completed and returned in the self-addressed stamped envelope provided. Please return your completed survey by May 31, 1996.

You may be assured of complete confidentiality. The survey has an identification number in order for us to follow-up non-respondents. Your name will never be placed on the survey itself and we will be reporting group data only. It will take approximately 20 minutes to complete this survey. Participation in this study is completely voluntary.

Thank you for your time and assistance.

Sincerely,

Greg Belcher
Graduate Research Associate

N. L. McCaslin
Professor
APPENDIX C

Postcard Reminder
June 3, 1996

Last week a questionnaire seeking information about your experience in using student assessment information was sent to you. If you have already completed and returned it to us please accept our sincere thanks. If not, please take time to do so today. The questionnaire was sent to only a small, but representative sample of technical instructors. It is very important that your information be received so that the results will accurately represent all post-secondary technical instructors in Ohio.

If by some chance you did not receive the questionnaire, or it got misplaced, please call me at (614) 292-6321 and we will get another one in the mail to you immediately.

Sincerely,

Greg Belcher
The Ohio State University
June 12, 1996

FIELD(1)

Dear FIELD(2):

About two weeks ago you were sent a questionnaire seeking information on how post-secondary instructors are using assessment information gathered from their students. The information generated from this study will help to document the sources of information that are important to instructors for making various instructional decisions. As of today, we have yet to receive your completed questionnaire.

We are writing you again because of the importance each completed questionnaire adds to the study. You are part of a small group of post-secondary instructors that has been randomly selected to represent the entire population of post-secondary occupational/technical instructors in the State of Ohio. In order for the results to be truly representative of this population your response is important and needed.

If you have already mailed your questionnaire please disregard this notice. In the event that your questionnaire has been misplaced, a replacement has been enclosed. Please take a moment to complete the questionnaire and return it in the enclosed, stamped envelope. It is important that the questionnaire be completed and returned by June 22, 1996. Should you have any questions please feel free to call us at (614) 292-4624.

Thank you for your cooperation. I am looking forward to hearing from you soon.

Sincerely,

Greg Belcher
Graduate Research Associate

N. L. McCaslin
Professor
APPENDIX E

Second Postcard Reminder
June 22, 1996

Last week you were sent a second questionnaire seeking information about how you use student assessment information to make instructional decisions. I would like to ask you once again if you could please take a few minutes to fill out and return this questionnaire.

The information that you provide will help to supply a better understanding of how postsecondary instructors collect information on student learning and also how they use this information. Since you were randomly selected, it is important that we receive your response so the results of this study can be generalized to all postsecondary technical/occupational instructors in the State of Ohio.

Thank you for your assistance and enjoy the rest of the summer.

Sincerely,

Greg Belcher
The Ohio State University
APPENDIX F

Comparison of Respondent to Nonrespondents
### Table 19: Comparison of Respondents to Nonrespondents on Selected Variables

<table>
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<tr>
<th>Variables</th>
<th>Respondent (n=154)</th>
<th>Nonrespondent (n=15)</th>
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<th>p</th>
</tr>
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<td>Assessment Methods</td>
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<td>Competence in Assessment</td>
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<td>Constraint to Assessment</td>
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<td>Age</td>
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<td>Years of Teaching Exp.</td>
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<td>1.26</td>
<td>.22</td>
</tr>
</tbody>
</table>

Table 19: Comparison of Respondents to Nonrespondents on Selected Variables
REFERENCES


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