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ASSESSMENT SKILLS OF TEACHERS:
A STUDY OF BLACK SOUTH AFRICAN TEACHERS

A DISSERTATION PRESENTED

by

L. MOHAPI MALAKA

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

DOCTOR OF EDUCATION

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School of Education

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ASSESSMENT SKILLS OF TEACHERS: A STUDY OF
BLACK SOUTH AFRICAN TEACHERS

A Dissertation Presented

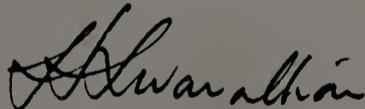
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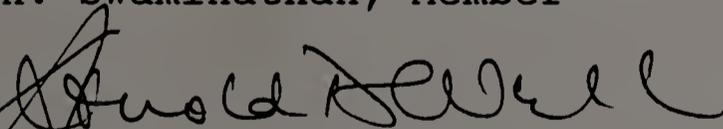
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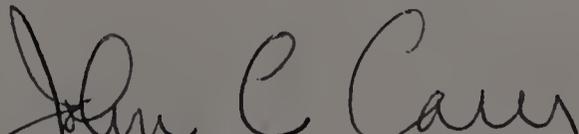
Ronald K. Hambleton, Chair



H. Swaminathan, Member



Arnold D. Well, Member



Bailey W. Jackson, Dean
School of Education

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ABSTRACT

ASSESSMENT SKILLS FOR TEACHERS:
A STUDY OF BLACK SOUTH AFRICAN TEACHERS

FEBRUARY 1995

L. MOHAPI MALAKA, B.A.(Paed)., UNIVERSITY OF THE NORTH

B.Ed., UNIVERSITY OF THE NORTH

M.Ed., UNIVERSITY OF MASSACHUSETTS AMHERST

Ed.D., UNIVERSITY OF MASSACHUSETTS AMHERST

Directed by: Professor Ronald K. Hambleton

Assessment of student learning is one of the most important aspect of the teaching learning process. Until recently, there has been a tendency in South Africa to narrow classroom assessments to the administration of achievement tests and sometimes to emphasize large-scale standardized testing. Assessment is now being broadened to include the collection of day-to-day assessment information about students, instructional material, and classroom climate. However, some studies in the United States have shown that teacher training in classroom assessment was rather inappropriate and irrelevant. This investigation, conducted in South Africa, was intended to survey teacher views about their assessment skills, classroom assessment practices and attitudes, and to develop a set of assessment skills for teachers.

This study surveyed a sample of 405 black teachers in the Department of Education and Training in South Africa. The results indicated that teachers would require formal training

in assessment to permit them to design their own tests, and increase the use of assessment activities in the classroom. Teachers believe that tests motivate students to study harder and provide the best way to determine what students have learned. They also felt that their assessment needs scanned everything from writing objectives to reporting scores to students and parents. On the basis of the survey results, a comprehensive set of fourteen objectives was prepared for the purpose of teacher training and the development of a teacher certification test.

This study should provide a basis for restructuring teacher training by providing more as well as better training in the assessment area.

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C H A P T E R 1

INTRODUCTION AND STATEMENT OF THE PROBLEM

1.1 Background

Assessment of student learning is one of the most important aspects of the teaching-learning process. Until recently in the United States, there was a tendency to narrow classroom assessment to mean only the administration of achievement tests (Popham, 1990) and sometimes to emphasize large-scale standardized testing (Stiggins, 1989). Assessment is now being broadened to include the collection of information about students, instructional material, instructional approaches and classroom climate (Airasian, 1991).

In South Africa, particularly in Black (African) education, classroom assessment has traditionally been defined narrowly as a separate part of a lesson presentation. Teachers were expected to teach lessons and later assess students' knowledge. The only available form of classroom assessment was through tests designed to evaluate students' mastery of content. The results from these tests were used for grading and promotion.

Consider the situation for Black South African students as they begin their education. They are not usually tested to identify their school readiness skills or to determine their potential learning skills and problems. They are classified into classrooms according to

their mother-tongue. In the course of instruction, teachers will give different types of achievement tests, e.g., monthly, quarterly, and half-yearly tests, depending on the policy of the school, to evaluate students' knowledge. At the end of the year, students are given an examination (achievement test) developed locally in a school by teachers for the purpose of making decisions on promotion. This process is repeated throughout sub standard A(Kindergarten) until standard 10(School leaving exam) when the students write an external examination. The standard 10 examination is used for certification and also as an entry to universities and colleges.

Throughout the entire education system in South Africa, assessment has been used mainly to provide information for making decisions on grades and promotions (Gronlund, 1993). Although this function is useful, it is nevertheless not the only one and certainly not the most important for improving student learning in the classroom.

Though the teaching-testing model used in South Africa is the main mode of assessment, the success of this model is far from guaranteed. It requires that lessons must not only be well-prepared but also meaningful to students for learning to take place. It also requires that tests must be designed in a way that they measure what is taught. In actual practice, (1) lessons are not always well-prepared, (2) students have difficulty learning the content, and (3) the quality of tests produced is poor.

After a careful examination of teacher's training curricula for Black teachers in South Africa, it was observed that teachers are trained to be able to prepare and deliver lessons to their classes. On the other hand, the only available form of training in classroom assessment is to show teachers the use of tests to evaluate lessons (Syllabus, Secondary Teachers Diploma & Primary Teachers Diploma, 1980). While this type of training is commendable, there is evidence that the training is not very effective and it falls short of embracing assessment in all its forms as an important aspect of the teaching-learning process. As a result of this limited and less than effective training, teachers are poorly informed about test development processes, evaluation of student work, grading of student papers and reporting scores, etc.

In as far as test development is concerned, overall, the majority of teachers are inclined to rely mostly on sentence-completion type-items and essay type-items. But teachers use both formats poorly. For example, in sentence-completion, the majority of items have three blanks, some blanks are at the beginning and at the end, and in some cases there are no blank lines. This type of item construction is contrary to the rules of constructing sentence-completion items. In the case of essay items, teachers rely mostly on the use of phrases such as "list", "describe", "discuss", "give", etc. These two forms of

item formats are popular among teachers in that they are easy to construct. However, for the majority of students it means that they are expected to memorize content. Although memorization of some facts may be good for students, in the long run it is difficult to build an educational system on memorization of facts. In as far as score reporting is concerned, the overall practice is to take scores obtained from an achievement test and rank-order them from top to bottom or good to poor. Test score ranking does not provide any remedial information for students and teachers.

Poor quality testing as well as a narrow perspective on assessment are associated with high failure rates found in schools as well as in subsequent drop-outs from school. The Department of Education and Training admits that the causes of the high drop-out rates in schools are not only due to poverty and political unrest but also due to the poor quality of teachers which extends of course to their deficiencies in the area of assessment (Cooper, 1992).

It is apparent that these students, among other compelling factors to repeat classes and in some cases to leave school, are not adequately prepared intellectually and therefore they are not ready to write the examinations. Lack of intellectual preparation and readiness to write end-of-year examinations can be seen as arising in part from lack of good teaching-learning processes in schools. And, even when students are ready,

they must contend with poorly designed and constructed final examinations.

In preparing for any instructional program, the main concern is how to improve student learning. To respond to this concern, attention need to be given to the methods and materials of instruction. However, the role of assessment in the instructional process needs to be considered, too. When properly developed and used appropriately, assessment can contribute to effective instruction and enhance student learning. The main goal of assessment is to improve learning, and it can do so in a number of ways, e.g., providing for placement testing necessary for the beginning of instruction, diagnostic testing, end of instruction, as an aid in retention and transfer of learning, to student motivation, to student evaluation, in evaluating instructional effectiveness, etc. Therefore the time seems right to realize not only the importance of classroom assessments but also that good quality assessments are inseparable from meaningful student learning.

1.2 Statement of the Problem

In recent years, there has been increasing interest to resolve educational problems with a view to improving student learning. However, the problem of improving student learning does not seem to be satisfactorily addressed. Perhaps, one reason for the lack of improvement

is that research efforts have focused on only one side of the issue, viz, the instructional part of the teachers' responsibility. It has to be recognized that teachers in every classroom, in addition to keeping discipline and providing instruction, are involved with assessing students performance and making decisions about the classroom climate, quality of instruction, as well as student learning. There must be recognition that without sound assessment and sound decision-making in classrooms, teachers cannot provide effective and good quality instruction (Airasian, 1991).

During the last decade, however, as teachers were lagging behind in assessment skills, assessment has become increasingly important and more complex. There is a need more than ever before to be able to identify the learning needs of students. It has been discovered that most students who in the past have been identified as normal, are now being identified as having symptoms of some form of learning disabilities. Therefore, as discoveries are made in the psychological, health, sociological and other related fields of study, there should be a related shift in the sophistication of assessment of students in classrooms to keep up with those changes (Bachor, 1989). Further, because of great need to provide scholarship to students, classroom assessments are needed as a tool for selecting students for various types of educational awards (Marso & Pigge, 1990).

In order to fulfill the classroom needs that require assessment, attention must be given to the training of teachers and also emphasize their responsibility in assessment, grading and reporting students' test scores and how these relate to promotions and certification. Teachers must be made aware of the importance of testing in the classroom to assess instruction and student learning. Teachers must be trained to use classroom assessments as a basis to diagnose learning problems and to suggest remedial work (Carey, 1988). Teachers must be encouraged to embrace their responsibility of classroom assessment more seriously. In sum, teachers do not appear to know very much about assessment, and in recent years, assessment has become more complicated because of the focus on performance measures.

1.3 Purpose of the Study

Problems that can arise as a result of lack of emphasis on classroom assessment were described in the previous sections. Of particular importance are teacher qualifications, expertise, attitudes, as well as what teachers should know and be able to do to conduct valid assessments in their classrooms.

In view of the educational reform that is gradually taking over in South Africa, and in view of some of the deficiencies in teacher training in the assessment area that have been documented, it seemed appropriate to build

a strong foundation of current technical knowledge, and practices, and to propose meaningful changes.

Specifically, this study was designed to address two purposes:

- A. to answer six questions about teacher assessment knowledge and practices:
 - (1) What do teachers know about assessment and what are their attitudes?
 - (2) What kinds of assessments do classroom teachers carry out?
 - (3) What is the nature and extent of assessment training for teachers?
 - (4) What areas of improvement would teachers like to see in their assessment skills?
 - (5) How can these assessment skills be made available?
 - (6) What would be the format and contents of successful teacher training programs in the assessment area?
- B. to prepare a list of teacher assessment skills and to begin the process of instrument development to assess teacher assessment competencies,
 - (1) prepare a list of objectives describing the measurement competencies of teachers, and
 - (2) develop expanded objectives to facilitate the preparation of a teacher certification test.

The data collection phase of this study was carried out in South Africa. The participants were Black (African) teachers teaching in primary and secondary schools under the Department of Education and Training.

C H A P T E R 2

REVIEW OF THE LITERATURE

2.1 Introduction

Over the last two decades, it has been established that classroom assessment plays an important role in the education of children (Airasian, 1991; Stiggins, 1989). However, according to Miller and Erickson (1985), classroom assessment is one aspect of education that has been talked about but not very well addressed in practice. The reasons are (1) time pressure, (2) inadequate test construction skills, (3) incorrect judgements about students' ability levels (Randhawa, 1990), and (4) low teacher attitudes about assessment.

Classroom assessment, whether formal or informal, is a means through which teachers can begin to understand their students. Students should be assessed on a regular basis to determine how to optimize their potential to learn. Effective teaching requires that instruction must be at the level of each student. To ensure that teacher instruction is suitable, relevant and effective, it must also be assessed periodically (Randhawa, 1990).

Teachers in classrooms are involved constantly with assessing students on a daily basis. The purpose of this assessment is to enable teachers to plan, carry out, and monitor instruction, maintain order and discipline,

determine student achievement and their grading (Airasian, 1991).

Good quality and defensible decisions can only be made with valid and reliable information about students, resources and facilities. Therefore, gathering such information is the responsibility of the teachers who are instructional designers. Thus it is essential for teachers to have the know-how for gathering relevant information to make necessary classroom decisions.

One purpose of the review in this chapter is to highlight the nature of classroom assessments by providing an overview of teacher training and the attitudes of teachers towards classroom assessments. A second purpose is to review the literature about classroom assessment activities and the skills needed by teachers to enable them to carry out these activities. First, classroom assessment and the purposes of classroom assessment are described. Then, classroom assessment is examined as part of the teachers' responsibility.

2.2 Classroom Assessment

Classroom assessment is defined as a process of collecting, interpreting, and synthesizing information to help facilitate decision-making (Airasian, 1991).

Classroom assessment is therefore not merely a task of taking paper-and-pencil tests, scoring and assigning grades. It entails a broad range of information teachers

collect about their students, instructional material, methods of instruction and classroom climate (Airasian, 1991).

Classroom assessments are determined in the main by the nature of decisions teachers make in a classroom situation. Airasian (1991) identified three important purposes of classroom assessment: (1) to provide teachers with perceptions and practical knowledge of students' characteristics, (2) to plan instructional activities and monitor the progress of instruction, and (3) to help in carrying out grading, reporting and providing feedback of students' performance.

The first purpose is concerned with diagnosing students for potential problems, e.g., learning, emotional, or socio-economic problems which might hinder their successful learning in the classroom. The second purpose is concerned with the planning and the teaching of the lesson in the classroom. The third purpose is concerned with decisions regarding grading, grouping, interpreting test scores and making recommendations for promotions (Airasian, 1991).

Traditionally, testing has been regarded as separate from instruction (Duminy & Sohng, 1981). However, research results suggest that assessment is indeed one of the primary functions of teachers in the classroom: a typical teacher spends between 10% to 15% of her/his instructional time on the assessment of students' progress

and gathering information for diagnostic purposes (Newman & Stallings, 1982).

Assessments, grading, and evaluation of students have been identified as one of the teachers' six core job functions (Rosenfeld, Thurton, & Skurnik, 1986). Stiggins (1989) reported that teachers spent at least thirty percent of their instructional time on assessment related activities. Stiggins also found that teachers use assessment to inform a variety of their decisions and also serve other purposes to influence the quality of the learning experience provided to students. In a survey conducted in Alberta (Canada), it was found that teachers use up to 25% of their instructional time allocated to a subject for assessment activities (Rogers, 1992).

In summary, there is no doubt that assessment is one of the core responsibilities of teachers and takes up a considerable amount of their time. Unfortunately, up to now, no research in South Africa has been focused on classroom teachers and their assessment practices. Thus, research on classroom teachers regarding their use of assessment activities is long overdue.

2.3 Training of Teachers in Classroom Assessment

In examining the teacher training process in South Africa, one observes that it is characterized by incompleteness (Syllabus for Secondary Teachers' Diploma and Primary Teachers' Diploma, Department of Education and

Training, 1980). At present, the emphasis of teacher preparation is on the didactic approach, that is, the training of teachers to be able to adequately prepare and deliver a lesson to their classes. The teacher training curriculum is divided into three sections: (1) content expertise, (2) teaching methodology, and (3) practice teaching. While this division of curricula is commendable because of its relevance and appropriateness with respect to classroom needs, a key aspect of the teachers' classroom responsibilities is left out, i.e., classroom assessment. In the science of teaching course, prospective teachers are taught comprehensive theories of how to teach. Topics range from the preparation of objectives through to the classical teaching approaches, viz, deductive and inductive approaches. The only form of training in classroom assessment is to demonstrate the use of tests to evaluate lessons (Vrey, 1979).

It can be concluded from the nature of teacher training that comprehensive classroom assessment is regarded as training necessary for specialists, i.e. psychometric experts. It is assumed teachers do not need to know very much about testing because they are not expected to do very much with tests. Two important exceptions are the lesson tests and internal examinations needed to determine student grades and promotions. In the words of Popham (1990) which seems to apply well to the situation in South Africa, "...it was widely assumed that

whatever a classroom teacher really needed to know about testing could be picked up rather rapidly on the job" (p. xi). Unfortunately, on the job in South Africa probably means picking up inadequate procedures that prevail in the schools. Thus, there is no requirement for prospective teachers to complete a measurement course, and there is no measurement course available! This prevailing nature of training affects all teachers trained in the country because training is uniform.

A number of reasons have been identified for why classroom assessment training has been excluded from the teacher training curriculum (Stiggins, 1989). The following are relevant to the situation in South Africa: (1) tendency to focus on teaching rather than assessment of outcomes, (2) assessment courses regarded as academically demanding, (3) providing test items from textbooks, curriculum guides and previous examination papers, and (4) irrelevance of inservice training for classroom activities. Each of the four points will be considered next.

One reason for the neglect or exclusion of classroom assessment in South African teacher training is the tendency to focus on teaching rather than the assessment of outcomes. For example, in every classroom starting from lower primary through to high school, teachers are expected to teach the whole syllabus as outlined. At the completion of the syllabus, teachers are expected to

administer a test to determine the number of students to be promoted. Thus, promotion of students is based on their performances on the tests/examinations designed on the basis of the whole syllabus. Completion of the syllabus is the primary goal of teaching. Thus training places a high premium on the teaching and assumes that if teachers do a good job of teaching, students will learn. It is true that if teaching is done well, students will be able to learn. But it is also true that student learning cannot only be judged on the basis of the quality of teaching. A number of other factors such as the quality of tests, student potential to learn, student readiness, etc. are also important. Also, it is true that sometimes teachers may fail to communicate their lessons effectively. Therefore, it is necessary to evaluate not only how much students have learned but also whether the instruction was good enough. Thus, teachers need to be trained in comprehensive classroom assessments to be able to do evaluations of various aspects of the classroom activities including their own instruction.

Furthermore, the performance of teachers is judged in terms of how much content was covered and how many tests were given. However, the quality of work done and the number and quality of tests given are not judged in relation to the students' understanding and in the number of students who are promoted. Therefore, some readjustment of the training of teachers to include the responsibility

of ensuring good quality instruction as well as the development of good quality assessments is needed.

Historically, teaching as a profession has never been thought of as a career that involves anything other than giving instruction to students (Popham, 1990). Therefore assessment in general which might involve topics such as test development, types of tests, validity and reliability, descriptive statistics, etc., was regarded as academically demanding and therefore unsuitable in the training of teachers (Popham, 1990). Also, teachers were not expected to be trained in assessment because their assessment responsibility was narrowly defined to involve a small part of assessment, viz, designing unit tests (achievement).

There has been a tendency to provide items from other sources outside the classroom to help teachers perform their assessment activities. For instance, textbooks are often accompanied by unit and theme tests; subject specialists provide teachers in addition to new subject plans and model lessons, with a sample of tests; The Department of Examinations in the Department of Education and Training in South Africa, encourages teachers in schools to train students with question papers from previous examinations. Given the provision of test items from these external sources, it can be concluded that it was found to be unnecessary to train teachers to develop

their own assessment activities. Thus training teachers in assessment was not considered important.

From the definition of classroom assessment defined earlier, it is apparent that teachers should use assessment in their classrooms for a variety of purposes. In the first instance, assessment is used to inform teachers' decisions regarding perceptions and practical knowledge of students' characteristics, e.g., needs of students, selecting students for special services, etc. Secondly, assessment is used as a teaching tool such as, communicating achievement expectation to students, using assignments, classwork, projects, etc., as practice tests and also as assessments of achievement. Thirdly, assessments are used to carry out grading and reporting and also as a management tool. For teachers to use assessments in all of these contexts effectively, they must understand how each use relates to quality instruction and how each use impacts the quality of assessment.

Analysis of currently available teacher training courses in assessment reveals that only one use is given attention, viz, carrying out grading and reporting. Thus preservice training of teachers in classroom assessments is inadequate. It does not cover even one-third of the important uses of classroom assessment.

2.4 Nature and Extent of Assessment Training of Teachers

In the previous section, the point was made that assessment training of teachers involved, amongst other things, teaching teachers to be able to design tests for the purpose of evaluating lessons. Furthermore, the point was made that since the training of teachers was uniform throughout the country, the nature of training described affects all teachers trained in South Africa. Therefore the nature and extent of training of teachers in assessment skills was limited to the design of unit tests. Furthermore, no research has been undertaken in South Africa to examine the general quality of teacher assessments in the schools.

However, research in the U.S. has found that teachers who reported training in assessment skills, thought that the training was inappropriate and irrelevant (Boothroyd, 1992). In one study of seventh and eighth grade science and math teachers, it was found that 65% of the teachers who reported to have completed one measurement course in training said that their training was focused on standardized testing, e.g., stanines, grade equivalent scores and how to interpret the scores from these tests. Only 15% reported that their training involved constructing and critiquing classroom test items (Boothroyd et al., 1992).

The emphasis on standardized testing in assessment training is not surprising. Since the testing movement

started in the early 19th century, emphasis in the U.S. has been placed on standardized testing. In fact in recent years it has been customary to report standardized test results for schools and school districts in the newspapers! The results are that administrators and teachers have become quite critical of standardized testing.

Research on test use in the schools has been rare and limited (Harnisch & Switzer, 1991). This was the time when

... large scale assessment priorities had dominated the field so thoroughly for so long that scholars had failed to even sense, let alone acknowledge, there might be a different set off priorities related to other uses of assessment, such as in the classroom" (Stiggins & Conklin, 1992, p. 50).

Therefore, nearly all the major studies of testing in the schools had focused on the role of standardized tests (Goslin, 1967; Kellaghan, Madaus & Airasian, 1982; Rudman, 1980; Salmon-Cox, 1981). In a special issue of the Journal of Educational Measurement in 1983 on the "state of the art integrating testing and instruction, the editor said:

Linking testing and instruction is a fundamental and enduring concern in educational practice. . . . Fundamental questions about how well achievement test items reflect both student knowledge and the content of instruction are clearly at the heart of the matter . . . [yet] The contributors [to this issue] were asked to limit their conception of achievement testing to include standardized achievement tests, curriculum embedded or locally developed domain-referenced and proficiency tests, and state assessments (Stiggins et al., 1992, p. 50).

Thus, teacher-made tests were systematically and deliberately excluded from the journal.

The domination of standardized testing proved to be narrow and restrictive for classroom teachers. Standardized testing represented only a fraction of the assessments that take place in the classroom. Because of the attention given to standardized testing, very little is known about the nature, role and quality of classroom assessment. Thus the training of teachers fell short of addressing the real day-to-day classroom tasks of assessment. In a recent study on testing in high schools (Boothroyd et al., 1992) it was concluded that there was abundant knowledge about teachers' attitudes about norm-referenced standardized tests, but very little was known about the teachers or student perceptions of the day-to-day tests used in the classroom.

From the foregoing discussion, it could be said that emphasis given to standardized testing has almost overshadowed the importance of classroom assessment. The time has come to clarify the distinction between standardized testing and classroom assessment. Undoubtedly, both these forms of assessment have their place in schools.

2.5 Assessment Activities Carried Out in the Classroom

Research on classroom assessment in South Africa is non-existent. Evidence of information given here comes

from question papers and tests given by classroom teachers. Some of the information is drawn from my experience both as a teacher and an administrator in South Africa for seven years.

The nature of assessment carried out in a classroom bears testimony to the training teachers received. In a typical classroom assessment, teachers are interested in measuring the scholastic achievement of students. The scholastic achievement is measured in the following ways; (1) classwork (homework) which students are expected to do in class or at home, (2) designing unit tests based on a series of classworks and amount of content taught, and (3) designing examinations based on a series of tests and the completion of the syllabus. This process of assessment is similar in all classes, i.e., elementary and secondary schools.

Through these assessments, teachers establish a working knowledge of students' abilities. For the most part these perceptions of students' abilities become the basis of their assessments. These perceptions also become the basis of interaction between students and teachers. There is no form of standardized testing that is used to collaborate the perceptions that teachers have about students' performance.

Given the situation as described above, quality assessments are lacking in classrooms. It provides further evidence of the lack of adequate preservice training. For

evidence, I examined in 1992, 200 teacher-made tests. These tests were taken from a variety of primary (elementary) and high schools. The tests represented what could be classified as monthly tests, quarterly tests, half year tests, and trial tests (standard 10). These tests and their questions were analyzed with respect to (1) their quality of presentation, (2) quality of instructions, (3) test formats, and (4) the quality of questions. Here are the main findings:

1. In almost all the tests, the quality of typing was poor. Letters were faint to the extent that they were difficult to read. Some of the words that were rewritten as corrections were wrong and they were difficult to follow. The typing was done with half spaces between lines and that made the tests hard to read. It was hard to distinguish between headings and instructions. Pages from the tests were not numbered and in most cases not bound together and therefore it was often difficult to follow the sequence of items in the tests. There were lots of misspelled words.
2. Although most questions had instructions, there were a number of question papers that did not have instructions. Tests on languages were among the majority that had instructions, whereas content subjects, particularly, math, were among those that did not have instructions. When instructions were available, they tended to be inadequate. For

instance, there was a tendency to use abbreviations, such as, "State whether the ff are T or F," "Give one word for the ff abbreviations," etc.

3. The types of questions that were used varied from one grade to the other and from one content area to the other. There was a tendency to use multiple-choice questions on higher standards (grades) compared to lower standards. In most cases, the multiple-choice questions consisted of a question and three answer choices. The three answer choices were not appropriate given the fact that the test was meant for middle to higher standard. Sentence completion tests were the most favored test formats in almost all the standards. This happened because they are easy to construct especially for teachers who are inexperienced or not sure of the content area and have therefore some difficulty in test construction. However, it was one of the most misused test formats. Some of the problems were, (a) no blank spaces provided, (b) three or more blank spaces that were needed to be filled up in some cases, and (c) blank spaces at the beginning and at the end of the item.
4. The True/False format was also one of the favorite test formats especially for the middle to higher standards. Though most of the questions were well done, there were problems: (a) the words "true" and "false" were abbreviated, (b) phrases were too simple

and short. In the scoring key "true" was the right answer in 90% of the items. Matching format was used almost exclusively in higher standards. In the tests reviewed the majority of the items had problems. One of the obvious problems was that the columns to be matched had an equal number of questions and responses. In some cases the column of responses had one more response compared to the column of questions. This is contrary to the standard rules where the column of responses is required to have at least two or more responses than the column of questions especially for the higher standards. Essay-type questions were found in almost all the tests in the middle to high standards in one form or the other. These essay type questions ranged from a five marks description question to a hundred marks discussion question. Essay type questions constituted more than fifty percent of the total marks in a test. Three conclusions follow from this review of teacher-made tests in South Africa:

1. Teachers are poorly-informed about item writing rules to the point where they are not aware that they are giving points away on some items, and in some items they are making the test items unfairly difficult for the students.
2. Most of the marks are allocated for items which demand knowledge of the content and memorization. In

the lower standards, this is achieved by the use of sentence completion and in the higher standards, it is achieved by the use of essay type items.

3. The nature and quality of these teacher-made tests provides further evidence of the need to train teachers in assessment skills.

In spite of the nature and quality of these tests, teachers attached tremendous importance to their tests. Almost every discussion affecting students is based on the student performance on these tests, for example, grading, scholarship awards, testimony on character, etc. In most cases, whenever there was lack of correlation between students scores from teacher-developed tests and the external examinations, blame was placed on the external examinations. Teachers believed that their scores were legitimate and represented the "real" ability of their students unlike the external examinations where external examiners were perceived as outsiders and who did not have any substantial knowledge of the students. Therefore, external exams were often seen as unfair to students. Teachers may be correct in their criticism of external examiners and exams but their own tests appear to have many shortcomings as well, and there is little evidence that they are capable of providing valid criticisms of any exams, their own or external exams.

Given the nature and quality of teacher-developed tests and the importance teachers attach to these tests,

it seems to be a great oversight in South Africa that teachers are not trained to develop good quality assessments.

2.6 Attitudes of Teachers Towards Classroom Assessment

Teachers tended to have negative attitudes toward assessment in the classroom (Randhawa, 1990). Different teachers hold different types of attitudes towards assessment. Variables thought to be related to teacher attitudes towards assessment are: (1) subject matter taught; (2) sex; and (3) ethnicity of the teacher (Harnisch, 1991). In a study of science and math teachers and their use of classroom testing, it was found that math teachers are more likely to use classroom assessment developed in the class than science teachers (McMorris et al., 1992). A study by Green and Stager (1986-87) found that male teachers have a more positive attitude towards all aspects of testing than females. Furthermore, teachers who considered their own test results to be of value and who viewed tests as generally effective and fair seemed to use tests more extensively (Randhawa, 1990).

Harnisch et al. (1991) summarized the characteristics of teachers who have negative attitudes toward assessment in the following way:

1. Teachers who view testing and teaching as two separate events are teachers who exhibit considerable skepticism of assessment techniques.

2. There is widespread belief that teachers are skeptical about the values of external assessment information yielded by tests not devised by teachers themselves.
3. Testing takes time away from teaching (Harnisch & Switzer, 1991).

From the foregoing discussion, it is apparent that the attitudes of teachers towards assessment is important because it affects their assessment activities in the classroom. One of the ways of dealing with this problem is to provide adequate preservice training and also inservice training to teachers in the field. Goslin (1967) and Yeh (1978) have found that the more knowledgeable teachers are, the more likely they will use test information for various possible instructional applications. The expectation is that training teachers in assessment skills would lead to an improvement in knowledge of assessment which will enable them to use assessment information more effectively and extensively (Harnisch et al., 1991).

2.7 Classroom Assessment Skills for Teachers

In the previous sections, the importance of classroom assessment was documented. In this section, the skills that are relevant for the training of teachers in assessment will be examined. It has been found that the number of purposes for which teachers administer tests and the number of item types teachers employ were related to their knowledge of measurement and evaluation (Newman & Stalings, 1982). Teachers with higher levels of professed

competence tended to use tests for more and appropriate purposes and to use more item types (Randhawa, 1990).

Therefore there seems little doubt that training teacher in assessment skills will have a positive effect towards improving assessment in schools.

In an effort to meet the need for assessment skills for teachers, there has been a joint publication on Standards for Teacher Competence in Educational Assessment of Students by the American Federation of Teachers, the National Council on Measurement in Education, the National Education Association, and the American Association of Colleges for Teachers. In identifying the needs of a beginning teacher, these groups have included measurement as one of the skills needed by beginning teachers and they offered seven broad measurement competencies for the beginning teacher (Randhawa, 1990). The National Teacher Examination has included diagnosis of student learning problems as one of the five important skill components (Hufker, 1982). The National Council for Accreditation of Teacher Education has included as current standards the "design and use of evaluation and measurement methods " and the knowledge of different "assessment techniques" within its professional studies component (Schafer, 1990, p.1). Furthermore, according to Stiggins (1992), teacher education programs must include assessment because expertise in measurement is not available to teachers in the field from any other source. Thus, if there is

agreement about the need for training teachers in assessment, the question is, what do teachers need to know to be able to carry out efficient and effective assessment?

Mayo (1964) suggested four content categories in measurement and evaluation: construction and evaluation of classroom tests; standardized tests; uses of measurement and evaluation; and statistical concepts. Mayo's suggestions seem to portray the era in which standardized testing dominated testing in schools. Also, unfortunately, teachers do not consider statistical analysis of tests or items as extremely important because they put more emphasis on non-test data (Randhawa, 1990). However, Mayo's suggestions provide further evidence on the importance of teaching teachers about how to construct and use tests.

In a study by Gullickson and Hopkins (1987) to determine the relative perspectives of teachers' and professors' on measurement and evaluation, he found that there were significant discrepancies between teachers' and professors' ratings for the content categories. Content on which there was agreement was preparation of examinations, administering and scoring tests, and general assessment information. Content on which there was no agreement was, non-test evaluation activities, formative evaluation, summative evaluation, legal issues, and statistics. Professors differed significantly with teachers on the

need for learning statistics. According to Randhawa (1990), this difference of opinion between teachers and professors is not surprising because as Beck and Stetz (1979) suggested, the measurement specialists had relatively inaccurate perceptions of teacher testing behaviors and needs. Popham and Hambleton (1990) suggested four topics for both preservice and inservice training. Their topics were presented in terms of skills teachers need to acquire to be proficient in assessment: basic concepts; test selection; test construction; and uses of tests. The topics suggested are good and seem legitimate for classroom use. However, the topics seem rather technical too and omit some of the less formal aspect of classroom activities.

Stiggins and Conklin (1992) suggested the following comprehensive list of topics: uses of assessment; providing a clear and stable target; assessment as an interpersonal activity; tools to assess achievement; tools to assess other traits; measuring the quality of assessment; providing feedback; and focus on assessment policy. Stiggins and Conklin' (1992) list of topics is comprehensive and inclusive of most of the classroom activities. However, this list seems too extensive and might present problems in the planning process of the assessment skills because of some overlaps. Clearly there is a need to carefully evaluate the major topics offered by researchers in the literature, to further develop the

topic into more specific objectives that would form the basis for developing a teacher training program, and to carry out the work in relation to South African teachers.

Current research in the U.S. on classroom assessment and numerous problems found in schools in South Africa with respect to student learning problems point to the importance of paying attention to the training of teachers in the area of classroom assessment. This literature review on classroom assessment indicate that a beginning has already been made in defining the problem. What remains to be done is to articulate specific assessment skills relevant for use by teachers in the classrooms.

C H A P T E R 3

RESEARCH METHOD

This chapter is organized into two parts. Part A covers the survey research study and Part B addresses the development of a curriculum for teachers in classroom assessment.

3.1 Part A: Research Plans

3.1.1 Introduction

To achieve the first purpose of the study a descriptive study was designed to address four major objectives; (1) to determine the nature and extent of preservice training of teachers in assessment skills in South Africa, (2) to determine the assessment procedures teachers use in the classroom, (3) to assess teachers' attitudes towards assessment, and (4) to pilot test an assessment skills checklist for preservice and inservice training of teachers.

In order to achieve these four objectives as outlined above, a survey instrument was used to collect information. The survey was designed to collect information from black teachers currently employed by the Department of Education and Training in South Africa. Since preservice training for all black teachers in the country is the same, information was collected from schools which were within easy access to the researcher.

Care was also taken to include both levels of schools, primary and secondary schools, teachers with a variety of backgrounds such as qualifications, experience, gender, subjects taught and classes taught.

3.1.2 Research Techniques for Data Collection

In most studies on classroom assessment, the practice has been to administer a test to teachers to find out how much they knew about classroom assessment (Plake, Impara & Fager, 1993; Gullickson & Hopkins, 1987; Boothroyd, MacMorris & Pruzek, 1992; Stiggins & Conklin, 1992; Harnisch et al., 1991; Dorr-Bremme, 1983; Newman, 1981). This approach was appropriate because the goal was to find out how much teachers knew about classroom assessment (Burke, 1985; Goddard, 1986). In order to supplement the information collected through the survey administration, some other data collection methods are often used, such as attitudinal surveys (Harnisch et al., 1991), item judgement tasks (Boothroyd, MacMorris & Pruzek, 1992; Stiggins & Conklin, 1992) and interviews (Boothroyd, MacMorris & Pruzek, 1992; Stiggins & Conklin, 1992).

Data collection for this study was done solely through mail questionnaires. The reason for mail questionnaires was to reach a large number of teachers. Second, mail surveys seemed quite suitable for collecting data on the issues of interest. More expensive and time consuming methods of data collection seemed unnecessary.

The usefulness of the mailed questionnaire is supported in the study by Carberry (1992) where it was reported that this technique expands the potential geographic coverage of the survey, and accordingly, ensures greater validity of results because it enables the researcher to draw a large, more representative sample of the population under study. Furthermore, since the sample respondents were teachers, it seemed appropriate to use written questionnaires. According to Entwistle and Nisbet (1972), written questionnaires are appropriate and suitable when the respondents are "well able to understand the subtleties of the written word and have technical knowledge" (p. 113).

However, mail questionnaires have shortcomings such as an inability to get in-depth information, and low return rates can pose problems. In as far as in-depth information is concerned, an attempt was made in the construction of the questionnaire to cover as many topics as possible. Also, in the topics covered, attention was given to the clarity of the questions. In order to facilitate accurate, honest, clear as well as comprehensible responses, the questionnaire was designed to rely on both objective-type and open-ended questions. There were six open-ended questions which corresponded to the main questions of the study. Their purpose was to provide more in-depth information to consolidate objective type questions. Further, to avoid low return rates, the

questionnaire was not mailed to individual participants. Rather, groups of participants were identified and approached in schools and asked to respond to the questionnaire. Administrators were requested to monitor the collection of surveys in their schools.

3.1.3 The Design of the Survey Instrument

The questionnaire for this study was developed based on the surveys developed by MacMorris et al. (1992), Gullickson (1987), Harnisch et al. (1991), Rudman (1980), Stiggins and Conklin (1992). The questionnaire was divided into four sections. Section one covered question three of the study which dealt with the training of teachers in assessment. This section covered all aspects of teacher training. Information was collected about whether teachers have been trained or not, the extent of training, and also about the sources of any knowledge of assessment.

Section two covered question two of the study which dealt with classroom assessment practices of teachers. Interest was focussed on gathering all the information about the nature of assessment activities carried out in the classroom. Questions included in this section required information on what teachers were doing in their classroom, e.g., planning, teaching, and assessment. Questions also required specific information on different assessment activities such as, type of item format used,

sources of items, frequency of assessment, on how much time teachers spent in assessment.

Section three of the survey addressed the first question of the study which dealt with the attitudes of teachers towards classroom assessment. Interest was focussed on gathering information about the attitudes of teachers towards assessment. Attitudes were assessed in five areas: motivation, self-concept, grading, planning, and allocation of time in assessment.

The fourth, fifth and sixth questions of the study which dealt with assessment skills for teachers and modes of training were addressed in section four of the survey. Interest was centered on gathering information on the assessment skills that teachers should have in the classroom. Questions in this section were designed to collect information on various topics on teacher training such as, assessment concepts, uses of assessments, assessment as an interpersonal activity, test development, feedback strategies and ethics of assessment, as well as how training should be carried out, e.g., preservice, inservice, etc. Also, there were six open-ended questions which corresponded to the main questions of the study. Their purpose was to collect in-depth information. At the end of the questionnaire, respondents were asked to provide relevant demographic information about themselves.

A variety of formats were used in the survey. In section one, the respondents were asked questions where

they were expected to circle numbers next to the response choices. In section two, the respondents were asked questions where they were expected to provide a percent estimate of the time and items and also to circle numbers next to the response choices. In section three, the respondents were asked to indicate the degree of agreement (based on a five-point Likert scale) with each item. In section four, the respondents were asked to indicate the degree of importance (based on five-point Likert sale) of each item and providing ticks next to their response choices. There were also open-ended questions. The Likert scale is a tool commonly used in educational research. According to Entwistle and Nisbet (1972), "a Likert scale makes few statistical assumptions and it is a widely used method of attitude measurement" (p. 128).

A field-test of a the survey shown in Appendix A was conducted by administering the questionnaire to South African teachers currently studying in the United States. Approximately 10 South African teachers currently studying in the United States agreed to participate. Initially, contact was made with these teachers by phone (for those whose phone numbers were available) and they were asked to participate in the pretest. A questionnaire and a returned stamped envelope were send to the teachers and a brief message was included (to those who did not get a phone call) explaining how their addresses were obtained. Follow-up phone calls were made to ensure that all

questionnaires were returned. Results from the pretest were used to refine the questionnaire. Some American teachers and graduate students at the University of Massachusetts were also asked to participate in a field-test of the survey.

3.1.4 Selection of the Sample

Since teacher training in South Africa is the same (uniform) for all African teachers, the selection of participants did not require a complex sampling plan. However, it was interesting and useful to know how different backgrounds of teachers impacted on the overall responses. Thus, in the selection of participants, care was taken to ensure that the respondents consisted of teachers from different backgrounds.

Participants were chosen from both primary and secondary schools throughout South Africa. An attempt was made to involve schools in three provinces, Transvaal, Orange Free State and the Cape. At least two volunteers in each province were identified to assist in the administration of the questionnaire. With the help of volunteers, an average of four schools were identified in the three provinces with the option of getting two more schools in the Transvaal province. The option of getting an additional two schools was possible because of the availability of extra volunteers. The schools targeted

were mainly state schools that had an average of twenty-five or more teachers. The chosen schools were situated both in urban areas and in the homelands which were semi-urban and semi-rural.

Further, a letter was written to each school principal of participating schools to explain the merits of the study. The principals were asked to administer the questionnaire during a staff meeting.

Upon agreeing to participate, a date for administering the questionnaires was arranged. After completion, volunteers in each province collected questionnaires from the schools. Approximately 300 participants were targeted for the study.

3.1.5 Procedure

Four steps were followed in completing the study: (1) sending out questionnaires; (2) collecting questionnaires; (3) data analysis; and (4) preparing a write-up of the findings.

3.2 Part B: Development of the Curriculum in Classroom Assessment

3.2.1 Introduction

In Chapter 1, the problems of inadequate classroom assessment as well as lack of training of teachers in South Africa were identified (Duminy, 1981; Vrey, 1979). In Chapter 2, the literature review showed the importance of training teachers in classroom assessment (Boothroyd et

al., 1992; Harnisch et al., 1991; Popham, 1990; Randhawa, 1992; Stiggins & Conklin, 1992). Attempts that were made to provide teachers with necessary training were discussed in Chapter 2. However, the skills that were suggested fell short of the classroom needs of teachers (Boothroyd et al., 1992; Mayo, 1964; Popham & Hambleton, 1990; Stiggins & Conklin, 1992). It was also pointed out that the reason for the failure was that research on classroom assessment was not adequate and relevant to the needs of classroom teachers (Gullickson, 1986; Mayo, 1964; Stiggins & Conklin, 1992).

However, in the U.S. and Canada, significant progress has been made towards solving the problem of classroom assessment skills for teachers (Airasian, 1991; Stiggins & Conklin, 1992). Unfortunately, classroom assessment skills for teachers in the U.S and Canada cannot be imported wholesale to South Africa because of the unique needs of teachers from one country to the other. However, classroom assessment skills for teachers in South Africa will be developed on the basis of the work that has already been done in the U.S. and Canada. Therefore this part of the chapter is concerned with describing the development of specific classroom assessment skills for teachers in South Africa and the development of a certification test.

3.2.2 Curriculum

Curriculum in this context is understood to be a set of skills put together for use as a guide for teaching. In putting together the curriculum for teachers in classroom assessment, information from literature review, textbooks, current survey research and personal experience were relied upon.

In order to put together the assessment skills for teachers, two points were kept in mind: (1) the overall needs of teachers as professionals and (2) the unique needs of teachers at different levels of schools, that is, teachers at primary (elementary) and secondary (technical)(high) schools. Therefore the assessment skills curriculum for teachers was tailor-made to suite all levels of needs of teachers.

3.2.3 Outline of Resource Material

As mentioned in the previous section, the development of the curriculum was based on the literature review, textbooks, current survey research, the assessment component of teacher training programs already in place in South Africa, and personal experience. Of particular importance was the use of resource materials (modules) compiled under the auspices of the National Council on Measurement in Education (NCME) in the U.S. and the variety of textbooks used in colleges for teacher training in classroom assessment and measurement.

3.2.4 Assessment Skills for Teachers

Assessment skills for teachers were prepared in the form of objectives to be attained by teachers. From these objectives, "expanded objectives" were developed to facilitate the development of the certification test (Popham, 1990). In total, 14 expanded objectives or sometimes called "item specifications" were developed for the purpose of designing a certification test for teachers.

3.2.5 Evaluation of Teachers

After the instruction of teachers on classroom assessment skills, it is important to measure their mastery of the material. Therefore the purpose of the evaluation of teachers after training will be to determine their knowledge and skills in the area of classroom assessment and their need for remediation.

The evaluation will consist mainly of paper and pencil tasks. A variety of item formats were used in the construction of the test, e.g., objective items such as, multiple-choice, sentence completion, etc; constructed response items were also used. The product was a draft of a test that could be used to assess the competencies of teachers in the area of assessment. A copy is contained in Appendix B.

C H A P T E R 4

RESULTS OF THE SURVEY

4.1. Introduction

The responses of teachers to the survey are summarized in this chapter. A total of 600 surveys were sent to Black South African teachers and a total of 50 surveys were sent to Black teachers currently studying in the United States. About 380 surveys were returned by Black South African teachers for a response rate of 63%. Twenty surveys were returned by teachers in the United States for a response rate of 40%.

Data are reported in two ways: (1) the demographic characteristics of the respondents, and (2) the findings in terms of the main research questions of the study. Table 1 contains the demographic characteristics of the respondents.

Some important characteristics of the respondents are as follows: 54% of the respondents were females and 42% were males; 51% of the teachers had three-year teacher training, 24% had two year training and 21% were university trained or had university degrees; about 78% of the teachers had three or more years of teaching experience and about 19% had teaching experience of two or less years; about 54% of the teachers were teaching in high schools and about 44% were teaching in the primary schools. Also, 22% of the teachers taught languages, about

10% taught social sciences, 8% taught physical sciences, 7% taught natural sciences, and 6% taught commercial sciences.

4.2 Investigation of the Research Questions

4.2.1 What is the Nature and Extent of Assessment Training?

Table 2 contains a summary of the responses about the nature of teacher training. The summary of responses are based on the scale: 1 = No Training, 2 = Little Training and 3 = Considerable Training. Across all the items that were based on training on teaching activities (skills), teacher responses had a mean of 2.2 and a standard deviation of 0.74. On all items that addressed assessment activities, teacher responses had a mean of 1.6 and standard deviation of 0.79. Clearly, teachers had less training in the area of assessment.

Table 3 contains a summary of teachers' responses to questions concerning sources of training in assessment and how they judged their assessment knowledge. On the sources of training (where multiple responses were possible), 51% reported that they acquired their assessment expertise through their own experiences in the classroom, 46% reported that they acquired their expertise through preservice training at the colleges, and 38% reported that interaction with colleagues and the teachers' guides and textbooks had been helpful in acquiring information on assessment. Few teachers (14%) reported that the

professional literature was a source of their assessment training.

Concerning teachers' knowledge of classroom assessment, 61% of the teachers reported that they felt their knowledge of classroom assessment practices was good or excellent while about 24% reported that their knowledge was adequate. Only about 4% of the teachers in the survey felt that their knowledge of classroom testing was poor.

4.2.2 What Kinds of Assessments do Classroom Teachers Carry Out?

Table 4 contains a summary of the pertinent teachers' responses. The majority of teachers (51%) reported that they spent less than an hour per week with classroom assessment activities and 11% reported that they spent over two hours a week for classroom assessment activities. The remaining 28%, indicated that they spent between 1 and 2 hours. With respect to the amount of time teachers spend on classroom testing, the majority of teachers (50%) reported that they spent less than an hour and 18% reported that they spent more than three hours. The remaining 20% indicated they spent between 1 and 2 hours per week.

Concerning test related activities, i.e., reviewing and selecting assessments, development of their own assessments, administration of tests, and providing feedback, the majority of teachers reported that they spent between one and two hours per week. However, on

scoring and recording, the majority of teachers (75.4%) reported that they spent more than two hours per week. With respect to time spent per week in test related activities, 30% reported that they spent less than an hour and 37.1% reported that they spent more than two hours. The remaining 23% spent between 1 and 2 hours per week.

Table 5 contains information on the sources and nature of items for classwork and classroom tests. With respect to classwork, the majority of teachers (58.6%) reported that they obtained more than 20% of their items from the textbook guides and 44.9% reported that they developed between 10% and 20% of their items.

With respect to classroom tests, the majority of teachers reported that they obtained more than 20% of their items from textbook guides and previous external exam papers. With regard to the item types on classroom tests, matching and short-answer were the most frequently used, essay questions were next most frequently used, and multiple-choice items were the least frequently used.

On the open-ended question (43) concerning how teachers would develop classroom tests, 57% indicated that they started with a review of subject matter and then proceeded to focus on the quality of items. On how much time they spent, 39% of the teachers reported that they spent approximately an hour; 5% reported that they spent whatever time was needed, 4% reported they spent approximately three hours, and 2% indicated that they

spent more than a day to prepare a test. 41% of teachers indicated that they used previous exam papers and textbook guides in generating test items.

Table 6 contains information on the ways in which teachers set grades. About 47% of teachers reported that they used 10% or less information from classroom observation and participation. The majority of teachers indicated that they used more than 10% of information from classroom tests and exam results in assigning student grades. Major contributions to grades appeared to be classroom tests, examinations, and effort and attitude. Less important were standardized tests, classroom observation and participation and homework (classwork).

Table 7 contains information on the frequency of classroom tests, development of test plans, and the use of item analysis. On the frequency of classroom tests, 32% of the teachers reported that they give classroom tests several times a year and about 29% of the teachers reported that they give tests several times a month. 20% of the teachers indicated they gave tests about once a month. With respect to the preparation of test plans prior to the writing of test items, 52.4% reported that they prepare a test plan and 31% reported that they did not prepare a test plan. About 8% did not have an opinion.

On the use of item analysis, 27% of the teachers reported that they performed item analysis and 23% reported that they do not perform item analysis. About 32%

of the teachers reported that they did not have an opinion.

4.2.3 What are Teacher Attitudes About Assessment?

Table 8 contains the attitude statements about assessment organized into several categories. For each statement, the percent of teachers disagreeing, indicating neutrality, or agreeing, is reported.

On items that measure the teachers' perception of the availability of time and use of textbook tests, 66% of the teachers reported that they did not have enough time to prepare tests (16). 68% indicated that the availability of textbook tests should be a consideration in the selection of textbooks (28).

On items measuring the use of tests, 63% of teachers seemed to feel that they could use tests more effectively if they knew how to interpret them (18). But teachers were divided on the issue of the effectiveness of tests with improved training (17).

With respect to the training of teachers, 72% of the teachers felt that the training they received adequately prepared them to be able to construct tests (32). But they did not feel as strongly that knowledge of testing principles was important compared to other competencies teachers need (31). However, 59% of the teachers felt that a college course in educational assessment should be required for teachers to receive certification (30).

With regard to the usefulness of tests on student grading, 80% of the teachers felt that tests provided the basis for student grades (19). They also felt that tests provided the best way to determine what students have learned (22) and that student performance on a test is a good indication of how well they learned the material(24). Teachers also felt that cheating on tests was a significant problem (27).

On statements that measured the usefulness of tests for motivating students to learn, 80% of the teachers felt that students were motivated to study harder when they knew they would be tested (20). About 83% of the teachers also felt that students worked on achieving their best on classroom tests (21) and thought that taking tests provided valuable learning experiences (29).

With regard to items that measured the usefulness of tests for instructional planning, teachers were divided about the value of tests as instructional tools (15), though 75% felt that tests enabled them to focus on what they were teaching (23). Teachers also felt that they chose test items to reflect their instructional emphasis (25) and that the test results affected the way they taught (26).

On the open-ended question (42) about teacher perceptions about the value of teacher-made tests, 51% of the teachers reported that teacher-made tests were good; 65% reported teacher-made tests helped them evaluate what

was taught; 24% reported that tests helped teachers to evaluate student progress; and 16% felt that tests encouraged students to participate in classroom activities.

4.2.4 What Skills do Teachers Think They Need in Assessment?

Table 9 contains a summary of teacher responses to the items about the importance of assessment skills for teachers. In general, teachers overwhelmingly agreed (over 80%) that they needed training on all the skills listed on the survey. No additional skills were suggested.

On the open-ended question (44) which addressed areas of assessment where training was needed, 50% of the teachers felt that they needed training on the skills mentioned in items 33-40; only 8% felt that they did not need any training.

4.2.5 How Can Training in Classroom Assessment be Made Available to Teachers?

As to how formal training in classroom assessment could be made available, teachers felt that training should be brought about through inservice (57%) or preservice (17%) training.

4.3 Discussion

Research on classroom assessment is a topic that requires extensive attention because of the important role

it plays in the improvement of education for children. Teachers in this study reported that they received more training on teaching skills than on assessment skills. They reported that they acquired their assessment expertise, mainly, through their experience in the classroom. This situation seems unacceptable. However, surprisingly, teachers reported that their knowledge of assessment was good. This surprising result may be due in part to their lack of knowledge about classroom assessment. This seems particularly true since teachers were unanimous that they needed training on all the assessment skills listed in the survey.

With respect to assessment carried out in the classroom, most teachers indicated that they spent less than two hours in conducting classroom assessment activities per week. However, on scoring and recording assessment information, teachers spent more than two hours per week. These results are consistent with the emphasis placed in South African schools. Furthermore, the reason for teachers spending more time on scoring and recording is a result of large classes (50:1 teacher/student ratio). This may be one good reason for more emphasis on objective assessments such as through the use of multiple-choice items.

Concerning the nature and sources of items, teachers agreed that they developed very few items of their own and most items used were derived from textbook guides and

previous exam (external) papers. Teachers also indicated that overall they used the more short-answer, matching and essay items and used less multiple-choice items. This finding is consistent with the results of the study by Malaka (1993): most primary school teachers used short-answer item format and high school teachers used predominantly both short-answer and essay type items. As for student grades, teachers agreed that they placed more emphasis on classroom tests and exam results. This means, for example, that tests are used mainly for promotion and not for remedial purposes. The majority of the teachers did not respond to the use of standardized test results for grading. This result was expected because the South African education system does not use standardized tests other than in Standard 10 when it is used for career guidance. In fact, some of the teachers with a standard six and two year teacher training diploma and unqualified teachers with a standard eight certificate would have had no experience with standardized tests.

With regard to frequency of tests, teachers indicated that they administered more than two tests a week. This result is consistent with the requirement of the Department of Education that teachers must give tests throughout the year. As for preparation of test plans, many teachers indicated that they developed testplans. However, teachers seemed a little confused about item analysis as most of them reported that they did not have

an opinion. The most likely meaning is that they did not perform an item analysis because they did not know what it entailed.

With respect to teacher attitudes about assessment, overall, teachers were positive toward classroom tests. They felt that tests were a necessary tool to evaluate student performance and that cheating on tests was a significant problem. They agreed that tests serve as motivation for students to study harder and achieve their best. Teachers agreed that they did not have sufficient time to prepare tests which is consistent with other results in the research study. They also indicated that the availability of textbooks with assessment material should be a consideration in the selection of textbooks which explains the teachers' reliance on textbooks as a source of items.

Teachers were supportive of the use of tests if they knew how to construct them. Contrary to the earlier conclusion, teachers felt that they were adequately trained to design tests. Overall, teachers thought that a college course in classroom assessment was necessary as a requirement for teachers to receive certification. They affirmed that all skills listed on the survey should constitute the curriculum (content) for training. Teachers indicated too that training should be through inservice. This conclusion is not surprising because the respondents were all teachers currently teaching.

In summary, these results indicate that teachers require formal training in assessment so as to encourage them to design their own tests, increase the use of assessment activities in the classroom, and encourage the use of a variety of different types of item formats in their tests and classwork (homework). Teachers believe that tests motivate students to study harder and provide the best way to determine what students have learned. Also, teachers believe that tests are important instructional tools and enable them to focus on what they are teaching. On the content of the assessment course, teachers agreed unanimously on the importance of all the skills listed in the survey.

4.4 Recommendations

A logical step from the findings of the study is to focus attention on the training of teachers. It has already been mentioned that teachers spend considerable amounts of their time involved in assessment-related activities (Yeh, 1980; Stiggins, 1991). However, this study and numerous other studies (Schafer & Lissitz, 1987; Schafer, 1993; Stiggins, 1990) indicated that the problem is lack of preservice training and ongoing inservice training of teachers. From the results of the study and literature review in Chapter Three, reasonable broad topics for preservice and inservice training of teachers are as follows:

- * Basic assessment concepts
- * Uses of classroom assessments
- * Assessment as an interpersonal activity
- * Techniques for developing, administering and interpreting the results of classroom tests
- * Providing feedback
- * Ethical issues in assessment

Each topic will be considered in more detail next.

4.4.1 Basic Assessment Concepts

Teachers should be taught the basic concepts that are used in assessment. The reason for this is to provide teachers with a broad background and knowledge of concepts that will help them understand and be able to make distinctions among concepts that are essential for making decisions on their needs and the needs of students (Popham & Hambleton, 1990).

4.4.2 Uses of Classroom Assessments

It is important that teachers be familiar with the uses of assessments. This information is essential in that it enables teachers to decide why they want to test, how they will use the scores, what kinds of information they want, and finally what kinds of decisions they want to

make (Airasian, 1991; Brown, 1983; Popham & Hambleton, 1990; Stiggins & Conklin, 1992).

4.4.3 Assessment as an Interpersonal Activity

Often classroom assessment is construed as a mechanical relationship that involves giving a test to students. On the contrary, classroom assessment is essentially an interpersonal activity between students and teachers. It involves a variety of forms of expressions such as dialogue, interviews, performance assessments, objective assessments, etc. It is important that the interpersonal aspect of assessment be emphasized to avoid confusing numbers with student scores and dehumanizing the learning process (Airasian, 1991; Stiggins & Conklin, 1992).

4.4.4 Techniques for Developing, Administering and Interpreting the Results of Classroom Tests

Teachers spend at least one-third of their instructional time on assessment (Stiggins, 1991). Also, it has been mentioned that teachers attach more importance to their own tests when making decisions (Stiggins & Conklin 1992; Randhawa, 1990; Harnisch & Switzer, 1991). Therefore it is important that teachers know exactly how to develop tests, administer them, and interpret their results.

4.4.5 Providing Feedback

Very often teachers pay more attention to the development of tests and scoring and reporting, and very little attention to the use of scores in providing feedback. As a result, providing feedback is not given adequate attention. Tests scores are important, as they are used to communicate information to students, teachers, administrators and parents (Airasian, 1991; Schafer, 1990; Stiggins, 1991).

4.4.6 Ethical Issues in Assessment

In addition to learning about assessment, it is also important to learn about ethical issues affecting assessment. It is imperative that teachers learn about issues regarding misuse of tests results, malpractice in assessment, unfairness and dishonesty in testing, etc. Knowledge of ethical issues in assessment will help empower teachers to be gatekeepers and judges of what is right and wrong about educational assessments,, and by so doing, be in a position to protect students from external non-assessment factors and provide guidance on policy issues affecting testing (Airasian, 1991; Stiggins, 1991). In the next chapter, a set of basic skills which should be required of teachers is presented, along with detailed specifications for their assessment.

Table 1

Demographic Characteristics of the
Teacher Sample

Variable	% of Teachers (N=401)
Sex	
a. Female	54.1
b. Male	41.7
Missing	4.1
Qualifications	
a. Two-year training	24.2
b. Three-year training	51.4
c. Four-year training	15.8
d. Five-year training	5.7
Missing	3.0
Teaching Experience	
a. One-two years	19.0
b. Three-years and over	77.8
Missing	3.2
Teaching level	
a. Primary	43.5
b. High School	53.6
Missing	3.0
Subjects Taught	
a. Languages	22.2
b. Physical Sciences	8.4
c. Natural Sciences	7.4
d. Social Sciences	9.6
e. Commercial Sciences	6.2
f. Primary School Subjects	43.2
Missing	3.0

Table 2

Summary of Teacher Training in Teaching and Assessment

Area	Teacher Training			Summary Statistics	
	None (1)	Little (2)	Ample (3)	\bar{X}	SD
<u>Teaching Activities</u>				2.2	.7
a. Classroom management	3%	57%	36%	2.3	.8
b. Teaching skills	8%	51%	36%	2.2	.7
c. Lesson preparation	12%	42%	42%	2.2	.8
<u>Assessment Activities</u>				1.6	.8
a. Test development	42%	36%	18%	1.7	.8
b. Uses of tests	44%	35%	16%	1.6	.8
c. Grading	45%	35%	15%	1.6	.8
d. Giving feedback to students about their progress	50%	26%	19%	1.6	.8
e. Concepts used in assessment	56%	27%	12%	1.5	.8
f. Administration of tests	58%	21%	15%	1.5	.8
g. Interpretation of scores	59%	22%	14%	1.5	.8

Table 3

Summary of Teachers' Training in Assessment

Area	% of Teachers (N=405)
<u>2. Sources of training in assessment</u>	
Teacher training	45.9%
Inservice training	18.8%
Colleagues	38.3%
Professional literature	14.4%
Teachers' guide and textbook	33.2%
own experience in the classroom	51.2%
<u>14. Knowledge of classroom testing</u>	
Excellent	17.3%
Very good	4.6%
Good	44.1%
Adequate	23.9%
Poor	3.7%
Missing	6.3%

Table 4

Summary of Teachers' Time Spent per Week in Classroom
Assessment Activities
(N=405)

	Area	% of Teachers			
		<1hr	1-2hr	>2hr	Missing
3.	Time spent per week in classroom assessment	51%	28%	11%	9.2%
4.	Time spent per week in:				
	Reviewing and selecting assessments	19%	54%	21%	6.3%
	Developing own assessments	22%	55%	16%	6.8%
	Administering tests	34%	52%	7%	6.8%
	Scoring and recording	6%	12%	75%	7.1%
	Providing feedback	15%	45%	33%	6.8%
10.	Time spent per week in developing classroom tests	50%	26%	18%	8.3%
11.	Time spent per week in test related activities (e.g., scoring, grading, and reviewing, etc.)	31%	23%	37%	8.5%

Table 5

Summary of Teachers' Sources and Nature of Items for
Classwork and Classroom Tests
(N=405)

Area	% of Teachers			
	<10%	10-20%	>20%	Missing
5. <u>Sources of items for classwork</u>				
Personally developed	13%	45%	35%	6.8%
Textbook test guides	5%	30%	59%	6.8%
Other teachers	5%	39%	28%	6.8%
Previous external exam papers	19%	37%	34%	7.5%
6. <u>Sources of items for classroom tests</u>				
Personally developed	19%	38%	34%	8.8%
Textbook test guides	4%	33%	54%	9.0%
Other teachers	31%	38%	19%	9.0%
Previous external exam papers	20%	21%	50%	8.8%
7. <u>Nature of items for classroom tests</u>				
Multiple-choice	9%	30%	23%	7.8%
Matching	17%	16%	58%	8.3%
Short-answer	16%	16%	60%	8.3%
Essay	26%	23%	42%	8.0%

Table 6

Summary of Teachers' Sources of Student Grades
(N=405)

Area	% of Teachers			
	<10%	10-20%	>20%	Missing
8. <u>Sources of student grades</u>				
Classroom tests	15%	38%	40%	7.5%
Examination (internal or external)	20%	35%	38%	7.5%
Standardized tests	28%	10%	4%	58.5%
Homework (classwork)	38%	33%	22%	7.3%
Classroom observation	47%	23%	22%	7.8%
Class participation	48%	22%	23%	7.8%
Student effort and attitude	36%	26%	30%	7.5%

Table 7

Summary of Teacher Responses to Some Basic Assessment Questions

Area	% of Teachers (N=405)
9. <u>Frequency of classroom tests</u>	
Several times a week	7.1%
Once a week	4.4%
Several times a month	28.8%
Once a month	20.5%
Several times a year	32.0%
Missing	7.3%
12. <u>Development of test plans</u>	
Yes	52.4%
No	30.7%
Unsure	8.3%
Missing	8.5%
13. <u>Use of item analysis</u>	
Yes	27.3%
No	23.4%
Unsure	32.4%
Missing	17.1%

Table 8

Summary of Teacher Attitudes About Classroom Assessment
(N=405)

Area	% of Teachers		
	Disagree	Neutral	Agree
<u>Time Usage</u>			
16. I do not have sufficient time to properly prepare tests.	24%	5%	66%
<u>Availability of textbook tests</u>			
28. The availability of textbook tests should be an important consideration in the selection of textbooks.	13%	14%	68%
<u>Tests Uses</u>			
17. I could use tests more effectively if I knew more about constructing them.	44%	10%	41%

¹A five point rating scale was used with each statement: Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly Agree = 5. For purposes of reporting, the first two categories, and the last two categories were combined.

Continued, next page.

Table 8--continued:

Area	% of Teachers		
	Disagree	Neutral	Agree
18. I could use tests more effectively if I knew more about interpreting them.	20%	12%	63%
<u>Teacher Training</u>			
30. A college course in educational assessment should be required for teachers to receive certification.	12%	11%	72%
31. Compared to other competencies teachers need, knowledge of testing principles is of relatively low importance.	38%	18%	40%
32. The course work I have completed in the area of assessment has prepared me for constructing my own tests.	18%	17%	59%
<u>Grading</u>			
19. Tests provide the primary basis for my student grades.	5%	10%	80%
22. Teacher-made tests provide the best way to determine what students have learned.	6%	4%	84%

Continued, next page.

Table 8--continued:

Area	% of Teachers		
	Disagree	Neutral	Agree
24. A student's performance on a classroom test is a good indication of how well s/he has learned the material.	7%	5%	83%
27. I find cheating on tests to be a significant problem.	3%	8%	75%
<u>Motivation</u>			
20. Students study harder when they know they will be tested.	2%	6%	86%
21. Most of my students try to achieve their best on my classroom tests.	7%	5%	83%
29. Taking tests provide students with valuable learning experiences.	6%	9%	80%
<u>Instructional Planning</u>			
15. Classroom tests are important instructional tools.	26%	24%	44%
23. Testing helps me focus on what I will teach.	13%	12%	75%

Continued, next page.

Table 8--continued:

Area	% of Teachers		
	Disagree	Neutral	Agree
25. I choose test items to reflect my own instructional emphasis.	10%	9%	76%
26. Students test results often redirect my instructional emphasis	10%	10%	76%

Table 9

Summary of Teacher Reactions to the List of Assessment Skills for Teachers
(N=405)

Skill	Of No Importance	Important	Very Important
33. Assessment Concepts	7%	19%	68%
34. Uses of Assessment	5%	19%	71%
35. Assessment as an inter-personal activity	5%	17%	74%
36. Test Development	2%	20%	73%
37. Administration, scoring and interpretation of Scores	2%	14%	78%
38. Grading Procedures	4%	19%	71%
39. Feedback	4%	12%	78%
40. Ethics of Assessment	7%	18%	68%

C H A P T E R 5

ASSESSMENT COMPETENCIES FOR CLASSROOM TEACHERS

5.1 Introduction

The previous chapter documented the limited skills of teachers in the assessment area. In Chapter Two, some assessment skills needed by teachers were identified. In this chapter, 14 teacher assessment skills will be presented, and each has been fully described in the form of an item specification. The development of item specifications is usually the first step in constructing a credentialing exam or a diagnostic assessment of teachers. The objectives will be introduced first, and then the detailed item specifications will follow. A preliminary certification test constructed to assess the 14 objectives is contained in Appendix B.

5.2 Objectives

Fourteen objectives which define the core assessment competencies for classroom teachers in the classroom have been identified, and are listed below. They are based on suggestions offered by Mayo (1964, 1967), Gullickson and Hopkins (1987), Popham and Hambleton (1990), and Stiggins and Conklin (1992).

Objectives of the study are: (1) The teacher should be able to define basic concepts used in classroom assessments; (2) The teacher should be able define

important types of classroom tests and be able to identify situations where they should be use; (3) The teacher should be able to prepare objective item specifications as a first step in test development; (4) The teacher should be able to prepare performance item specifications as a first step in test development; (5) The teacher should be able to write multiple-choice, true-false, and matching test items for classroom tests; (6) The teacher should be able to write performance items for a classroom tests; (7) The teachers should be able to prepare a table of specifications for a classroom test; (8) The teacher should be able to prepare a test; (9) Teachers should be able to administer classroom tests; (10) The teacher should be able to conduct item analysis of classroom tests, and carry out simple descriptive statistics on the test scores; (11) Teachers should be able to interpret and use a variety of assessment information/results/scores from a classroom test; (12) Teachers should be able to assign valid student grades; (13) Teachers should be able to design appropriate methods for communicating test scores to students and parents; and (14) Teachers should know their ethical responsibilities with respect to assessment practices.

5.2.1 Objective 1

Teachers should be able to define basic concepts used in classroom assessments.

5.2.1.1 Instructions and Sample Item

Circle the letter beside the correct answer.

" A statement that describes an intended outcome of instruction " is a definition of

- a. teaching
- b. objective
- c. instruction
- d. assessment

5.2.1.2 Content Limits

1. Each item will be based on a single concept.
2. There is no limit to the length of the definitions.
3. The concepts below are the ones included in this objective: instructional objective, table of specifications, item specifications, validity, reliability, achievement test, grading, objective items, performance items, criterion-referenced test, norm-referenced test, standardized test, text-embedded test, teacher-developed test, examinations, portfolios, holistic and analytical scoring, assessment record, homework, classwork, paper and pencil assessments, item analysis, item difficulty, item discrimination, mean(average), mode, median, range, test score, standard deviation, variance, normal curve, error of measurement, frequency, percentile rank, correlation, bias.

5.2.1.3 Response Limits

1. Each item will contain one correct and three incorrect responses.
2. The alternatives should include the correct response and three plausible distractors. Distractors will include:
 - a. common teacher mistakes.
 - b. assessment concepts closely related to the correct answer (for example, if norm-referenced--test is the correct answer, criterion-referenced-test is a suitable distractor).

5.2.2 Objective 2

The teacher should be able to define important types of classroom tests and be able to identify situations where they should be used.

5.2.2.1 Instructions and Sample Item

What type of test would be most useful for planning your instruction with a class?

- a. placement
- b. formative
- c. diagnostic
- d. readiness

5.2.2.2 Content Limits

1. Each item will be based on important types of classroom tests and situations when they should be used.

2. Items will be developed from the following list:

<u>Type of Test</u>	<u>Use</u>
---------------------	------------

Readiness	Given at the beginning of a course or unit of instruction; assesses those prerequisite skills necessary for success in the planned instruction.
-----------	---

Placement	Given at the beginning of instruction. It tests whether the students have already mastered some of the material the teacher plans to include in the instruction; students can be placed at the correct level.
-----------	---

Formative	Given during instruction. This test is designed to measure the intended outcomes of the unit of instruction. It monitors student progress during instruction.
-----------	---

Diagnostic	Given at the end of instruction. This test is designed to diagnose specific areas of the subject so that specific learning errors can be identified.
------------	--

Final	Given at the end of the year. This test measures a representative sample of all the learning tasks included in the instruction.
-------	---

It is designed to certify mastery or assign grades.

5.2.2.3 Response limits

1. Each item will have one correct answer and three incorrect answer choices.
2. Answer choices will be the five types of tests identified in the content limits.

5.2.3 Objective 3

Teachers should be able to prepare objective item specifications as a first step in test development.

5.2.3.1 Administration

1. Group administered (small or large)
2. Time required: 30-60 minutes.
3. Teachers will be given objectives from a variety of subjects and asked to prepare one objective item specification.
4. Objectives given to teachers must be relevant to their subject specialty.

5.2.3.2 Scoring

The scoring checklist for grading a teachers' objective item specifications is shown below:

Rating

	Yes	No	Unsure
<u>Instructions and Sample Item</u>			
1. Are the instructions informative and clear?			
2. Does the sample item measure the objective?			
3. Will the sample item serve as a model for preparing valid items?			
<u>Content Limits</u>			
4. Do the content limits provide sufficient information about the content and format of the items to guide the item writing process?			
<u>Response limits</u>			
5. Are the limits of the content adequately described?			
6. Are the common mistakes or distractors explained in sufficient detail to guide the item writing process ?			

Administrator's Instructions

In this task you are given a set of objectives. Choose one. You are asked to prepare an objective item specification. Make sure all the necessary details in an item specification are provided. The details include (1) sample instructions and test items, (2) content limits, and (3) response limits.

Stimuli

The sample objectives might include:

1. The teacher can add simple fractions, with same denominator ranging from 2 to 9 and any numerators from 1 to 9.
2. Given the passage the teacher can answer questions on stated details in the passage.
3. The student can divide the even numbers from 2 to 20 by 2 and the multiples of 5 from 5 to 50 by 5, in the form $x : y = \underline{\quad}$.
4. The student can multiply the whole numbers 1 to 10 by 3 and by 4.
5. Given a passage the student can answer questions on stated details in the passage.
6. The student can identify the correct plural form of a noun to complete a given sentence.

5.2.4 Objective 4

Teachers should be able to prepare performance item specifications as a first step in test development.

5.2.4.1 Administration

1. Group administered (small or large)
2. Time required: 30-60 minutes.

3. Teachers will be given performance objectives from a variety of subjects and asked to prepare a single performance item specification.
4. Objectives given to teachers must be relevant to their subject specialty.
5. Objectives must be relevant to the grade level of the teacher.

5.2.4.2 Scoring

The checklist below will be used in scoring the performance item specifications:

	<u>Rating</u>		
	No	Yes	Unsure
1. Was time to complete the task specified?			
2. Is the time to complete the task appropriate?			
3. Were the instructions to candidates clearly defined?			
<u>Scoring</u>			
4. Were the criteria for scoring appropriate?			
5. Are the components of the rating/scoring rubric clearly stated?			
<u>Administrators' Instructions</u>			
6. Were the candidates instructions clearly written?			
<u>Stimuli</u>			
7. Were suitable stimuli given?			

5.2.4.3 Administrators' Instructions

In this task you are given an objective. You are asked to construct a performance item specification. Make sure all the necessary details of the item specification are provided. The details include (1) administration (2) scoring (3) administrators' instructions (4) stimuli.

5.2.4.4 Stimuli

The sample objectives might include:

1. Given a personal story as an example, the student can tell a story from his/her personal experience or his/her activities.
2. Given a set of three commands at once, the student can respond to all the commands in the order they are given.
3. Given kilograms masses as standard masses and an arm balance, the student can measure masses in kilograms.
4. The student can measure volumes of containers in litres and half litres.

5.2.5 Objective 5

Teachers should be able to write multiple-choice, true-false, and matching test items for classroom tests.

5.2.5.1 Administration

1. Group administered (small or large)
2. Time required: 30 minutes
3. Teachers will be given two objective item specifications from a variety of subjects relevant to the teacher.
4. Teachers will be asked to design different types of items, e.g., multiple-choice, true-false, and matching.

5.2.5.2 Scoring

The checklist below will be used in scoring the candidates' objective items.

	<u>Rating</u>		
	Yes	No	Unsure
<u>Multiple-choice</u>			
1. Is the item measuring one important learning outcome?			
2. Is the stem in the item presenting a single clearly formulated problem?			
3. Is the stem of the item stated in simple, clear language?			
4. Is any negative wording emphasized in the item stem?			
5. Is there a single correct or clearly best answer?			
6. Are the answer choices grammatically consistent with the stem of the item?			

Scoring, Continued

	<u>Rating</u>		
	Yes	No	Unsure
7. Were clues that might enable students to select the correct answer avoided?			
8. Are the distractors plausible and attractive to the uninformed?			
9. Are the answer choices of approximately the same length?			
<u>True-False</u>			
10. Is only one central idea included in the statement?			
11. Is the statement short and using simple vocabulary and sentence construction?			
12. Is the statement worded so that it can be judged as true or false?			
13. Are clues avoided?			
<u>Matching</u>			
14. Is only homogeneous material included?			
15. Are lists of items and answer-choices of reasonable length?			
16. Are responses to the items placed on the right?			
17. Are the responses placed in alphabetical or numerical order when an order exists?			
18. Are the directions specific on the basis for matching?			

5.2.5.3 Administrators' Instructions

In this task, you will be given two objective item specifications. You are asked to write two items from each item specification. Be sure your items are consistent with the rules for preparing objective test items.

5.2.5.4 Stimuli

See Figures 1 and 2, end of chapter.

5.2.6 Objective 6

Teachers should be able to write performance items for a classroom test.

5.2.6.1 Administration

1. Group administered (small or large)
2. Time required: 30 minutes
3. Teachers will be given two performance item specifications from subjects relevant to the teacher, and asked to prepare performance items.

5.2.6.2 Scoring

The checklist below will be used in scoring the candidates performance items:

Rating

Question	Yes	No	Unsure
1. Is the task a valid measure of the objective?			
2. Does the item describe a clear task to be performed by the student?			

5.2.6.3 Administrators' Instructions

In this task you are given two item specifications. You are asked to design two items from each item specification. Be sure your items are consistent with the rules for preparing performance items.

5.2.6.4 Stimuli

See Figures 3 and 4, end of chapter.

5.2.7 Objective 7

Teachers should be able to prepare a table of specifications for a classroom test.

5.2.7.1 Instructions and Sample Item

Below is a table of specifications for a test in English. The first column consists of the English content area and the other four columns consist of learning outcomes. The number of items in each cell of the table indicates the number of items to be devoted to each area of content in the test. Study the table and then answer the questions that follow.

Content Area	Recall	Understanding	Application	Total
Nouns	2	3	5	
Adjectives	3	3	4	
Proposition	3	2	3	
Sentence Constructions	2	2	3	
Literature	1	4	2	
Adverbs	2	2	1	
Total				
%				

1. How many items assess the content at the understanding level? _____.
2. How many items assess the content area at the recall level? _____.
3. How many items assess the content area at the application level? _____.
4. What is the total number of items in the test? _____.
5. What proportion of the test addresses literature?
_____.

5.2.7.2 Content Limits

1. Items will be based on information in a table of specifications reported in a table. Up to 10 content areas and six cognitive levels can be used in the Table of Specifications.

2. Tables will be given and a set of statements will be asked based on the table, e.g.,
- a. How many items assess the content at the understanding level? _____.
 - b. How many items assess the content area at the recall level? _____.
 - c. How many items assess the content area at the application level? _____.
 - d. What is the total number of items in the test? _____.
 - e. What proportion of the test addresses literature? _____.

5.2.7.3 Response Limits

1. Candidates will provide short-answer responses to the questions.

5.2.8 Objective 8

Teachers should be able to prepare a test.

5.2.8.1 Instructions and Sample Items

Indicate whether the following statements about test preparation are True or False. Circle the correct answer.

When you prepare a test:

- T F 1. Test directions must include the time available to complete the test.
- T F 2. Place items requiring constructed responses at the beginning.
- T F 3. Group together sets of items of the same form such as multiple-choice, true-false and matching.
- T F 4. Insert diagrams and their items on the same side of the page.
- T F 5. Position your correct answer choices so that they are always the first or last alternative.

5.2.8.2 Content Limits

1. Each item will be based on well-accepted classroom test preparations.
2. There is no limit to the length of the phrase of the question/statement.
3. Items will be developed from the following list of issues affecting test preparation:
 - a. Start with objective test items first and then include performance items at the end.
 - b. Group together sets of items of the same form such as multiple-choice, true-false, and matching.

- c. Within sets of items, group items according to the sequence in which the material (content) was presented.
- d. Number every item of a test. Answer choices should also be numbered, preferably with letters. With younger children, items are not numbered because some children do not deal with numbers very well. An item may be identified instead by having a drawing of some common object beside it, such as a shoe, a flower, a star, or a box. The child can be directed then to the line with a star at the left. The item may be read to the students, and the answer-choices alone may appear on that line in the test booklet.
- e. Do not split an item at the bottom of a page so that one part of it appears on one page and the rest on the next page.
- f. Insert diagrams (tables, pictures, etc.) and their items on the same side of the page.
- g. Make sure that each possible answer position is used about equally often (avoid the use of first, last and "c" answer-choices).
- h. Every test should have written instructions (except young children who must have these instructions read to them). Instructions must include:

1. Writing the name of the examinee and the test on the answer sheet or on the test booklet.
2. Where answers are to be entered, and how, e.g., by circling, crossing out the correct answers, filling in blanks, etc.
3. Time available to complete the test.
4. What the students should do after the test is completed.
5. Any additional material about the test, such as use of scratch paper for solving problems, showing work on mathematics problems, performance, etc.
6. The number of items in the test and points allocated to the items.
 - i. Provide adequate and clear information as to how responses should be made.

5.2.8.3 Response Limits

1. Students will circle the correct letter (True or False) to indicate their responses.

5.2.9 Objective 9

Teachers should be able to administer classroom tests.

5.2.9.1 Directions and Sample Items

For each of the following statements, circle A for Agree and D for Disagree.

Test administration is a process that involves:

- | | | |
|--|---|---|
| 1. Providing proper writing conditions. | A | D |
| 2. Providing feedback of student performance. | A | D |
| 3. Arranging space between students to prevent cheating. | A | D |
| 4. Recording student grades for remediation. | A | D |
| 5. Analyzing student scores. | A | D |
| 6. Keeping interruptions to a minimum. | A | D |

5.2.9.2 Content Limits

1. Each item will be based on well-accepted classroom test administration practices.
2. Items will be developed from the following list of factors relevant to test administration:
 - a. Seating arrangements: Several kinds of seating arrangements are not desirable because they promote copying, e.g., students seated around the table; arranging seats such that they are placed at different heights or tiers. Every effort should be made to reduce the possibility

of copying, e.g., students should be seated in rows from front to back of the room. In crowded classrooms, an attempt should be made to seat students of different subjects, age, grade or gender in between the rows to avoid copying. Sometimes where possible, different colors of paper from the same test could be used to separate students in rows.

- b. Testing conditions: Test administration process should take into account both the physical and psychological conditions. Physical conditions imply, test rooms should accommodate reasonable number of candidates; there should be sufficient and good condition furniture; there should be an adequate supply of paper and pencils; room temperatures should be comfortable; test rooms should be well ventilated; there should be a reduction of noise inside and outside the test rooms, test rooms should be well-lit; distractions should be kept at a minimum; there should be nothing on the desk top except the test booklets, answer sheets and the pencils. Psychological conditions imply, reduction of test anxiety and apprehension by encouraging and making candidates feel comfortable.
- c. Test directions: Test administrators must be familiar with both their instructions and the

candidates' instructions. The instructions should be read at the beginning of the test. Written directions should be clear enough to make the test self-administering. With young students, some illustrations or examples on the chalkboard may also be useful.

- d. Time limits: Candidates should be made aware of the specific time limits to complete the test. The official watch should hang in front of the candidates for everyone to see. Sometimes, candidates may be reminded occasionally of the time left. Test administrators should adhere to the specified time.

5.2.9.3 Response Limits

1. Each statement must be followed with two answer-choices, e.g., A = Agree and D = Disagree.
2. Teachers must circle their responses.

5.2.10 Objective 10

Teachers should be able to conduct item analysis of classroom tests and carry out simple descriptive statistics on the test scores.

5.2.10.1 Instructions and Sample Items

In the exhibit is a summary of scores from a multiple-choice item. The first column identifies the item

and the number of students in the upper and lower performing groups. The second to the fifth columns identify the answer-choices and the number of student responses. Following is a summary of examinee performance on item 1.

Item 1. Answer-Choices	*A	B	C	D
Upper Group of 10 students	7	2	1	0
Lower Group of 10 students	3	4	1	2

- (a) For item 1, calculate:
- (i) item difficulty (p)
 - (ii) item discrimination (d)
- (b) Determine the effectiveness of the distractors. Mark with a tick in the appropriate cell in the table below to indicate your answer.

Answer-choice	Effective	Ineffective
A		
B		
C		
D		

5.2.10.2 Content Limits

1. Each item will be based on classroom item and test analysis data.
2. Item statistics will be in a form of a table describing the number of students and their responses to an item.

3. Questions will require candidates to calculate item difficulty and discrimination and determine the item effectiveness of the distractors
4. Other possibilities include questions involving basic descriptive statistics.

5.2.10.3 Response Limits

1. Teachers will supply/write their answers.

5.2.11 Objective 11

Teachers should be able to interpret and use a variety of assessment information/results/scores from a classroom test.

5.2.11.1 Instructions and Sample Item

In the box below is a description of the testing practice of Mr. Nkosi. Read the paragraph and the statements which follow. For each statement indicate whether you agree, disagree or are neutral. The key is: A=Agree; D=Disagree and N=Neutral.

After teaching a unit on nouns, Mr. Nkosi decided to give his students a test. The purpose of the test was to determine the mastery of the content. He carefully went through his textbook and constructed sentence-completion items based on the material in the book. He used the exact wording of the textbook for the correct answers to ensure the correctness of the answers. He administered the test and he listed the scores from high to low on the chalkboard. He gave each student his/her score. He also gave the student the opportunity to ask questions based on the test.

1. Some of Mr. Nkosi's test items assessed students at the understanding level. A D N

2. Mr. Nkosi's test measured a balanced sample of subject-matter. A D N

3. Mr. Nkosi used the type of test-items that was best for his purposes. A D N

4. Students can determine where they rank in the distribution of scores on Mr. Nkosi 's test. A D N

5. Mr. Nkosi's test will likely motivate students to overcome their weaknesses. A D N

6. Ranking student scores is a valid measure of reporting students performance. A D N

7. A criterion-referenced test approach was used by Mr Nkosi. A D N

5.2.11.2 Content Limits

1. Each item will be based on classroom assessment practices.
2. Introductory material about an assessment situation will be presented and a series of statements.
3. The material will be in a form of a paragraph. The material will identify scenarios of testing situations, e.g., a description of a teachers' testing practice; a description of a teachers' interpretation of a table of test scores/results.
4. Statements that follow the introductory material must be designed to require skill that may assess objective.
5. Statements will be based on the interpretation of a variety of assessment information and results/scores

from a classroom test, e.g., in the sample of Mr. Nkosi's testing practice, the statements were:

- | | | | | |
|----|--|---|---|---|
| a. | Some of Mr. Nkosi's test items assessed at the understanding level. | A | D | N |
| b. | Mr. Nkosi's test measured a balanced sample of subject-matter. | A | D | N |
| c. | Mr. Nkosi uses the type of test-items that was best for his purposes. | A | D | N |
| d. | Students can determine where they rank in the distribution of scores on Mr. Nkosi 's test. | A | D | N |
| e. | Mr. Nkosi's test will likely motivate students to overcome their weaknesses. | A | D | N |
| f. | Ranking student scores is a valid measure of reporting students performance. | A | D | N |
| g. | A criterion-referenced test approach was used by Mr Nkosi. | A | D | N |

5.2.11.3 Response Limits

1. Each statement should be followed with three answer-choices: A=Agree, D=Disagree, N=Neutral.
2. Teachers must circle their responses.

5.2.12 Objective 12

Teachers should be able to assign valid student grades.

5.2.12.1 Instruction and Sample item

In the box below is a description of tests from which grades will be assigned. There are also a series of statements based on the paragraph. Answer the questions by writing in your answers.

At the end of one year, Mrs Mabokela administered 8 monthly tests, 3 term tests, half-yearly exam and a final exam. Based on the analysis of the tests, she decided:

- a. 8 monthly tests should contribute 10 percent to the composite score.
- b. 3 term tests should contribute 20 percent to the composite score.
- c. Half-yearly exam should contribute 30 percent to the composite score.
- d. The 8 monthly tests should be weighted equally.
- e. The 3 term tests should be weighted equally.

Answer the following questions.

1. What percentage will each monthly test contribute to the composite score? _____%
2. What percentage will each term test contributes to the composite score? _____%
3. Using the percentage allocated for each test, identify the weighing factor (for the final grade) for monthly test, term test, half-yearly exam and the final exam. Write in your responses in the table below.

Test	Percentage	Weighing Factor
Monthly		
Term		
Half-Yearly		
Final		

5.2.12.2 Content Limits

1. Each item will present a description of tests from which grades will be assigned.
2. Item will consist of an introductory material and a series of statements.
3. The material will be in a form of a paragraph or table.
4. Statements that follow the introductory material must be designed to require skills in developing final grades.
5. Statements will be based on the interpretation and understanding of classroom tests, e.g., in the sample example of Mrs. Mabokela's tests, the statements were:
 - a. What percentage will each monthly test contribute to the composite score? _____%
 - b. What percentage will each term test contributes to the composite score? _____%
 - c. Using the percentage allocated for each test, identify the weighing factor for monthly test, term test, half-yearly exam and the final exam.

5.2.12.3 Response Limits

1. Teachers must supply/write their answers.

5.2.13 Objective 13

Teachers should be able to design appropriate methods for communicating test scores to students and parents.

5.2.13.1 Instructions and Sample item

Which of the following assessment is represented by the statement below:

A teacher informs a student that she has mastered 90% of the reading objectives.

- a. Norm-referenced approach
- b. Criterion-referenced approach
- c. Pass-Fail
- d. Checklist

5.2.13.2 Content Limits

1. Each item will the identification of a grading system based on the assessment of classroom report systems.
2. Items will be developed from the following list of classroom report systems:

Norm-referenced approach to reporting: Reporting performance based solely on the student's performance in relation to other students.

Criterion-referenced approach to reporting: Reporting performance based on the student, the objectives and the curricula.

Letter Grades, A to F: This grading system uses A as the highest grade and F as the Lowest grade.

Numerical Grades (Percentage Grades), Maximum = 100:

This grading system is based on the percentage system where the maximum is 100. The highest grade is 100.

Pass-Fail: In this system only two grades are used, one to indicate success (pass) and the other to indicate failure (fail).

Checklists: Checklist is a list of statements to each of which the teacher reacts by checking its degree of presence. This system indicates what the student can do.

Parent Conferences: Parent conferences consists of meetings between teachers and parents. In these meetings teachers tell what the student can do, compare the student with other students in class, and (may) describe the student effort and achievement in relation to his/her aptitude, ability, etc.

Written Descriptions: This system consists of teachers writing letters to parents about the progress of each student instead of filling out grades on a report card.

5.2.13.3 Response Limits

1. Teachers will circle the letters to indicate their responses.
2. Response choices are possible grading systems.

5.2.14 Objective 14

Teachers should know their ethical responsibilities with respect to assessment practices.

5.2.14.1 Instruction and Sample item

The following descriptions refer to the use of classroom tests. Circle an inappropriate (unethical) use of a test.

- a. Making decisions on teacher progress.
- b. Making decisions on teacher behavior.
- c. Making decisions on a teacher receiving a scholarship.
- d. Making decisions on classroom instruction.

5.2.14.2 Content Limits

1. Each item should contain three ethical and one unethical behavior.
2. Ethical behaviors should be restricted to classroom assessment.

3. Items on ethics should involve a variety of assessment situations, such as:
 - a. Use of test scores to design student grades,
 - b. Use test scores to judge teacher instruction,
 - c. Use test scores to judge content,
 - d. Use test scores to judge behavior/personality of student and teacher.
 - e. Students cheating on a test by illegally looking for answers in a book, getting answers from other students, having other students writing exams for them, etc.
 - f. Student-teacher relationships leading to the inflation/lowering of scores on a test.
 - g. Teachers not scoring student papers and thereby making-up (random) scores.

5.2.14.3 Response limits

1. The answer-choices should include three examples of appropriate classroom behavior and one example of inappropriate behavior.

5.3 Development of a Certification Test

On the basis of these objectives, a test for the certification of teachers has been designed. The purposes of the test are to evaluate the teachers' mastery of classroom assessment practices and to evaluate the teachers skills in applying the assessment concepts.

The test consist of two parts: Part A consist of objective type items, and part B consist of performance type items. For part A, teachers must follow instructions given in the test, and for part B, a separate answer sheet is provided. The test has two sets of instructions, general instructions for the test administrator, and specific instructions for the candidates. The test requires approximately three hours to complete. It carries a total of 100 marks. Teachers must answer all questions.

The test has been designed on the basis of the expanded objectives. Out of fourteen objectives, fifty six objective items were designed and four performance items were designed. The number of items and their objectives are indicated in table 10 a table of specifications. The complete draft of the test is in appendix B.

Table 10

Table of Specifications

Objectives	Item Format	Number of Items	Weight of Items	Total
1	Objective	10	1	10
2	Objective	4	4	4
3	Performance	1	14	14
4	Performance	1	14	14
5	Performance	1	4	8
6	Performance	1	4	8
7	Objective	6	6	6
8	Objective	5	5	5
9	Objective	6	6	6
10	Objective	10	10	10
11	Objective	7	7	7
12	Objective	6	6	6
13	Objective	1	1	1
14	Objective	1	1	1
Total		60		100

Objective

The student can identify the required pronoun to complete a sentence.

Sample Instructions and Test Items

Choose the word that completes each sentence. Circle the letter next to the answer you choose. Which word completes each sentence?

1. Jabu bought a nice dress.

Jabu will put on _____ dress on Sunday.

a. she b. shes c. her d. her's

2. An elephant is a large animal.

_____ trunk is long, big and strong.

a. It b. Its c. Its' d. It's

3. Malume has a new car.

_____ new car is blue.

a. Malume b. Malumes c. Malume's d. Malumes'

Content Limits

1. The reading skill involves identifying the singular possessive form of a noun or pronoun from context clues.
2. Reading material will be at the Grade 3 level.
3. Each item will have a sentence which contains a noun and a sentence with an omitted word (possessive noun or pronoun) and four answer choices.
4. The directions will read: "Choose the word that completes each sentence."
5. Each sentence will be 6 to 15 words long. More than one simple sentence may be used.

Figure 1. Sample Objective Item Specification.

Figure 1, Continued:

6. Sentences must show clear gender distinctions to help the student in the choice of singular possessive pronouns.
7. The thought, activity or event relating to the sentence should be a relevant experience to the Grade 3 student.
8. Suggested words include:
 - a. pronouns, e.g., he, she, it, they.
 - b. common nouns, e.g., horse, king, boy, woman, dog, policeman, mother, teacher.
 - c. proper nouns, e.g., Vukille, Mr Khumalo, Masuku.

Response Limits

1. Each item will have one correct and three incorrect answer choices.
2. Where nouns are used, possessive pronouns must not be used as answer choices and vice versa.
3. Answer choices must have the same word stem.
4. Incorrect response choices will include:
 - a. the plural form, e.g., brothers.
 - b. wrongly placed apostrophe.
 - c. the singular form of the noun or pronoun.
5. Capital letters or small letters will be used depending on the position and the grammatical status of the missing word.

Math

Objective

The student can identify squares, circles, rectangles and triangles.

Sample Instructions and Test Item

1. Which shape is a square?

[rectangle] [circle] [square] [triangle]
 A B *C D

Content Limits

1. Each item will be composed of a direction, a row of four geometrical shapes and four response choices.
2. The shapes will be presented in a horizontal format.
3. The shapes will be selected from the following list:
rectangles, triangles, circle, and square.

Response Limits

1. Each item will contain one correct and three incorrect response choices.
2. The shapes will be presented in a random order.

Figure 2. Sample Objective Item Specification.

Objective

Given a set of three commands at once, the student can respond to all the commands in the order they are given.

Administration

1. Individually administered.
2. One minute will be allowed for each student.
3. Teacher will say each command for the student to carry out.
4. All three commands will be said before the student starts carrying them out.
5. Each command will be a simple sentence of 2 to 6 words in length.
6. In carrying out commands, the student will follow the order in which the commands were given.
7. Words like 'then' or 'next' may be used between commands to emphasize.

Scoring

Rating

- a. Carried out command 1 correctly
- b. Carried out command 2 correctly
- c. Carried out command 3 correctly
- d. Followed the correct order in carrying out commands

Teacher Instructions

Make sure things that will be required for the student to carry out the commands are available, for example if one command is "Sit on the chair", there must be a chair for the student to sit on.

Say:

In this part of the test I will ask you to do three things.

The three things must be done in the order that I say them.

Listen carefully until you heard all three things before you start doing what you are asked to do.

Figure 3. Sample performance item specification to assess a sequence of commands.

Figure 3, Continued

Example:

1. Sit on the chair. (Do not point at the chair.)
2. Touch your head.
3. Call _____ . (Name of the next student.)

Stimuli

Suggested sets of commands follow, but commands are not limited to these. Any simple commands using words that are familiar to Grade 3 students can be used.

- | | |
|---------------------------------------|-----------------------------------|
| 1. Tell me your name. | 1. Go to the window. |
| 2. Tell me your age. | 2. Open it. |
| 3. Tell me where you stay. | 3. Come to the teachers's tables. |
| 1. Take a piece of milk. | 1. Open the cupboard. |
| 2. Write your name on the chalkboard. | 2. Take out an English book. |
| 3. Clean the chalkboard. | 3. Open to page 12. |

Objective

Given kilogram masses and an arm balance, the student can measure masses in kilograms.

Administration

1. Group administered performance task.
2. Time required: approximately 5 minutes.
3. The teacher must bring to the testing site a 1 kg quantity a 2 kg quantity, an arm balance and standard masses in whole kilograms which can be used to measure a 1 kg quantity and a 2 kg quantity.
4. Thee standard masses should be clearly labelled with their masses.

Scoring

Beside each mass, check one of the three boxes corresponding to how well the student performed.

<u>Yes, Perfectly:</u>	If the student balanced the beam <u>and</u> said the correct mass. (2 points)
<u>Yes, Somewhat:</u>	If the student balanced the beam but did an incorrect mass or did not say anything. (1 point)
<u>No:</u>	If the student <u>did not</u> balance the beam. (0 points)

Teacher Instructions

Place the unlabelled 2 kg quantity next to the arm balance and the standard masses. Say to the student:

Record the student's answer as perfectly correct, somewhat correct, or no as the case may be. When the student is finished measuring (or does not know what to do) remove the 2 kg quantity and bring a 1 kg quantity. Repeat the instructions and score accordingly.

Stimuli

Let the student measure the mass of the 2 kg quantity first and then measure the mass of the 1 kg quantity.

Figure 4. Sample performance item specification involving measuring weights with an arm balance.

CONCLUSIONS

6.1 Summary

This study addressed six questions about South African teacher assessment skills and practices. On the question of the nature and extent of assessment training for teachers, it was found that teachers received more training in teaching than in assessment. Teachers felt that they acquired assessment expertise through their own experience if they acquired expertise at all. This finding is consistent with previous studies (Stiggins, 1992; Mcmorris & Boothroyd, 1992), and seems unacceptable.

With respect to the nature of assessments teachers carry out in their classrooms, this study found that teachers spent less than two hours in conducting classroom assessments per week. However, they spent more than two hours per week scoring and recording test results. This finding is significant in that it highlights other problems found in the educational system. This is one important reason for considering an expanded use of objective assessments such as multiple-choice items.

It was also found that teachers do not develop their own items. They relied on textbooks guides and previous exam papers for their items. Overall, teachers used short-answer, matching, and essay type items. On student grading, it was found that teachers placed more emphasis

on the classroom test and exam results in assigning grades to students than on any other assessment data. With regard to frequency of tests, it was found that teachers administered more than two tests a month. The study also found that the majority of the teachers were not familiar with standardized tests and item analysis.

With respect to teacher attitudes towards classroom assessments, it was interesting to find that teachers were supportive of classroom assessments inspite of obstacles such as large classrooms. Teachers were positive towards the use of classroom assessments. They felt that tests were necessary to evaluate students performance and to motivate students to study harder. At the same time they felt cheating on tests was a significant problem. Teachers thought that classroom assessment skills should be a requirement for teachers to receive certification.

With regard to the areas of improvement, the study found that the teachers were interested in the core areas of classroom assessment such as test development, test administration, test interpretation, grading, feedback, etc. This issue will be discussed in detail in the recommendation section.

On the provision for training, it was found that teachers were in favor of both inservice and preservice training. It was not surprising that the majority of teachers were interested in inservice training because the respondents were mainly teachers in schools.

As for the content of successful teacher training programs, this study identified seven broad areas of assessment skills. A comprehensive set of 14 objectives was prepared. In addition, item specifications were developed to identify and clarify the objectives and also to facilitate the development of items for a certification test for teachers (Popham, 1991).

6.2 Recommendations

Findings from the survey indicated not only the importance of training of teachers in classroom assessment but also the importance of focussing on the contents of successful teacher training programs in the assessment area. While further research is required in the preparation of a curriculum for assessment training, the following reasonable topics are suggested for the training of teachers in classroom assessment practices:

- * Basic assessment concepts
- * Uses of classroom assessments
- * Assessment as an interpersonal activity
- * Techniques for developing, administering and interpreting the results of classroom tests
- * Providing feedback
- * Ethical issues in assessment

In order to facilitate training in these areas of assessment, a comprehensive list of fourteen objectives was developed. For purposes of expanding and clarifying these objectives, detailed expanded objectives (item specifications) were prepared and a certification test was designed. The purposes of the test are to evaluate a teacher's mastery of the content (skills) and their applications (Airasian, 1991; Gronlund, 1993; Popham, 1990).

6.3 Significance of the Study

Traditionally, education in South Africa was regarded as a process whereby adults give information to students. This information was essential for students to attain adulthood. Therefore the strategies and approaches used in teacher training were developed from this traditional education framework. Teachers were trained primarily to be able to give adequate instruction. Although the approach involved few assessments, whatever assessments were done were done poorly because of the limited skills of teachers in the assessment area. This study should provide a basis for restructuring teacher training by providing more as well as better training in the assessment area.

The current political changes taking place in the country also dictate the need more than ever before to pay full attention to all aspects of assessment. For instance, in future educational dispensations, all racial groups,

africans, socalled coloreds, indians and whites, are expected to belong to one educational department. Thus, with this expectation will come problems of assessment such as test bias, test translations, test equating, objectivity of scores, validity and reliability of scores, etc. Therefore this study attempted to provide for some of the anticipated assessment problems such as training teachers in test development, reporting and ethics of assessment.

The study should help to empower educators by highlighting some of the important assessment issues which teachers could use to impact both the ethics of assessment, reporting of student performance and public policy affecting assessment in schools.

This study has also made a number of useful contributions to educational measurement practices. The results should further define and describe issues important to classroom assessment. It has confirmed findings of other studies in the field (Stiggins, 1992; Airasian, 1992; Boothroyd, McMorris & Pruzek, 1992; Schafer and Lissitz, 1987) about the lack of training of teachers in classroom assessment. However, this study has made a contribution by taking the next step of producing a set of assessment skills needed to provide the necessary training of teachers and also provided a draft test for certifying teachers after training.

6.4 Shortcomings of the Study

There are several issues, particularly in the collection of data, that may have limited the study. These issues are, the collection of data in the area where there was political instability (e.g., most schools were empty because of school boycotts by both teachers and students), and data were collected at the time when teachers were preparing for their summer vacation. However, several surveys were discarded to control for some of these concerns. About 20 surveys were discarded because there were no responses; 10 surveys were discarded because they had information on only three or less pages on them; on all surveys that appeared to be copied were discarded.

Another issue was the failure to fully validate the item specifications and the test itself. Failure to validate means that this work will need to be done prior to using either in any subsequent research or training initiatives.

APPENDIX A

SURVEY OF TEACHERS ABOUT CLASSROOM ASSESSMENT

Teacher Survey About Assessment Practices

I am a certified high school teacher. I have been teaching for eight years in South African black schools. I am currently studying for a Doctor of Education degree. This survey is part of the study designed to make a positive contribution in the educational development of a new South Africa.

This survey has been designed to gather data from teachers about their day to day assessment practices. The purpose of the survey is to collect information that can be used to make recommendations for improving pre-service and in-service training of teachers in the area of assessment. The recommendations will be used to provide a basis for restructuring teacher training by providing more as well as better training in the assessment area in South Africa.

The survey consists of questions which will require you to think carefully about your assessment practices. It should take about twenty minutes to complete.

Guidelines for Completing the Survey

1. This survey should be completed anonymously. Do not place your name or any other identifying marks on it. You should feel completely free to express your opinions.
2. Many of the questions require you to describe assessment practices and attitudes that you may not have thought about. Kindly take the time to think about these questions before you respond.
3. This survey, when completed, should be returned to the principal's office where they will be collected, and mailed to me.

Classroom Assessment is defined in this survey as a process of collecting, interpreting and organizing information about students in the classroom for the purpose of assisting teachers to make decisions about student learning and classroom instruction.

Section 1. Teacher Training in Assessment

1. For this item, please circle the letters that reflect the training you received. There are three possible responses: No Training (NT), Little Training (LT) and Considerable Training (C)

- | | | | |
|--|----|----|----|
| (a) Class management | NT | LT | CT |
| (b) Test development | NT | LT | CT |
| (c) Uses of tests | NT | LT | CT |
| (d) Teaching skills | NT | LT | CT |
| (e) Grading | NT | LT | CT |
| (f) Lesson preparation | NT | LT | CT |
| (g) Giving feedback to students about their progress | NT | LT | CT |
| (h) Concepts used in assessment | NT | LT | CT |
| (i) Administration of tests and scoring | NT | LT | CT |
| (j) Interpretation of scores (results) | NT | LT | CT |

2. Where have you received training in assessment?
(Circle the letters beside choices which apply.)

- (a) Teacher preparation training
 - (b) Inservice training
 - (c) Colleagues
 - (d) Professional literature
 - (e) Teachers' guide and textbooks
 - (f) Own experience in classroom
 - (g) Other (Please specify) _____
-

Section 2. Classroom Assessment

3. How many minutes during a typical school week do you devote to classroom assessment activities? Write the number of minutes in the space provided.

_____ minutes

4. How many minutes in the typical week do you spent on the assessment activities below? Indicate your answers by writing in the minutes beside the activities.

<u>Assessment Activities</u>	<u>Minutes</u>
(a) Reviewing and selecting assessments	_____
(b) Developing own assessments	_____
(c) Administering tests	_____
(d) Scoring (marking) and recording	_____
(e) Providing feedback (reporting results to students, parents, etc)	_____

5. With respect to your classwork (homework) this year, please estimate the percent of questions you derive from the four sources below.

<u>Source</u>	<u>Percent</u>
(a) personally developed	_____
(b) textbook test guides	_____
(c) other teachers	_____
(d) previous external (internal) examination papers	_____

6. With respect to your classroom tests this year, please estimate the proportion of questions you derive from the five sources listed below. Indicate your answer by giving a percent estimate to each item format.

<u>Source</u>	<u>Percent</u>
(a) personally developed	_____
(b) textbook test guides	_____
(c) other teachers	_____
(d) previous external (internal) examination papers	_____

7. Please estimate the percent of questions on your classroom tests this year that fall in each of the following formats. Indicate your answer by giving a percent estimate.

<u>Item type</u>	<u>Percent</u>
(a) multiple-choice	_____
(b) matching	_____
(c) short-answer	_____
(d) essay	_____
(e) other	_____

8. Please estimate the percent of your students' final mark this year that is attributed to each of the following types of assessment. Indicate your answer by giving a percent estimate.

<u>Type of assessment</u>	<u>Percent</u>
(a) classroom tests	_____
(b) examination (internal or external)	_____
(c) standardized tests	_____
(d) homework(classwork) assignments	_____
(e) classroom observation	_____
(f) class participation	_____
(g) student effort and attitude	_____

9. How frequently this year do you give your students classroom tests? (Circle one choice below.)

- [a] several times a week
- [b] once a week
- [c] several times a month
- [d] once a month
- [e] several times a year
- [f] never

10. Approximately how many minutes a week do you usually devote to developing classroom tests? Write the number of minutes in the space provided. (Consider both in-class and out-of-class time).

_____ minutes

11. Approximately how many minutes a week do you usually spend in other test-related activities? (e.g., scoring, grading, and reviewing, etc. Write the number of minutes in the space provided. (Consider both in-class and out-of-class time.)

_____ minutes

12. Do you usually develop a "test plan" (i.e., table of specifications) prior to writing or searching for test items? (Circle one choice)

(a) Yes (b) No (c) Unsure

13. Do you usually conduct "item analysis" on your classroom tests? (i.e., do you analyze your test and test items to find strengths and weaknesses?) (Circle one choice)

(a) Yes (b) No (c) Unsure

14. How would you assess your knowledge of classroom testing practices? (Circle one choice)

[a] Excellent
[b] Very good
[c] Good
[d] Adequate
[e] Poor

Section 3. Attitude Towards Testing

For items 15 to 32, please circle the letters that best reflects the extent to which you agree or disagree with each statement below about testing. There are five possible responses: Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), Strongly Agree (SA). Show your answer by circling letters beside each statement, for example,

My lessons are usually well organized

SD D N A SA

<u>Statement</u>	<u>Ratings</u>				
15. Classroom tests are important instructional tools.	SD	D	N	A	SA
16. I do not have sufficient time to properly prepare tests.	SD	D	N	A	SA
17. I could use tests more effectively if I knew more about constructing them.	SD	D	N	A	SA
18. I could use tests more effectively if I knew more about interpreting them.	SD	D	N	A	SA
19. Tests provide the primary basis for my student grades.	SD	D	N	A	SA
20. Students study harder when they know they will be tested.	SD	D	N	A	SA

<u>Statement</u>	<u>Ratings</u>				
21. Most of my students try to achieve their best on my classroom tests.	SD	D	N	A	SA
22. Teacher-made tests provide the best way to determine what students have learned.	SD	D	N	A	SA
23. Testing helps me focus on what I will teach.	SD	D	N	A	SA
24. A student's performance on a classroom test is a good indication of how well s/he has learned the material.	SD	D	N	A	SA
25. I choose test items to reflect my own instructional emphasis.	SD	D	N	A	SA
26. Student test results often redirect my instructional emphasis.	SD	D	N	A	SA
27. I find cheating on tests to be a significant problem.	SD	D	N	A	SA
28. The availability of textbook tests should be an important consideration in the selection of textbooks.	SD	D	N	A	SA

Statements

Ratings

29.	Taking tests provide students with valuable learning experiences.	SD	D	N	A	SA
30.	A college course in educational assessment should be required for teachers to receive certification.	SD	D	N	A	SA
31.	Compared to other competencies teachers need, knowledge of testing principles is of relatively low importance.	SD	D	N	A	SA
32.	The course work I have completed in the area of assessment has prepared me for constructing my own tests.	SD	D	N	A	SA

Section 4. Assessment Skills for Teachers

Questions 33 to 40 concern the assessment skills teachers may need. For each question indicate the importance of each topic by circling one of four available choices:

Of No Importance	Of Some Importance	Important	Very Important
-----------------------------	-------------------------------	------------------	---------------------------

33. Teachers should be able to describe general assessment concepts used in assessment. Examples of these concepts are: different types of tests, test item specification, table of specifications, cut-off scores, test bias, test validity and reliability, etc.

Of No Importance	Of some Importance	Important	Very Important
-----------------------------	-------------------------------	------------------	---------------------------

34. Teachers should learn about the uses of assessments. Examples of these uses are: purposes of testing, uses of test scores, decisions to be made on the basis of test scores, etc.

Of No Importance	Of some Importance	Important	Very Important
-----------------------------	-------------------------------	------------------	---------------------------

35. Teachers should learn about assessment as an interpersonal activity. Examples of these interpersonal activities are: observation, interview, dialogue, etc.

Of No Importance	Of some Importance	Important	Very Important
-----------------------------	-------------------------------	------------------	---------------------------

36. Teachers should learn about test development skills. Examples of these skills are: ability to develop and evaluate tests, etc

Of No Importance	Of some Importance	Important	Very Important
-----------------------------	-------------------------------	------------------	---------------------------

37. Teachers should learn about administration, scoring and interpretation of scores/results from an assessment instrument. Examples of these skills are: ability to create standard testing conditions, ability to prepare guides for scoring, ability to interpret reported scores, etc.

Of No Importance	Of some Importance	Important	Very Important
-----------------------------	-------------------------------	------------------	---------------------------

38. Teachers should learn about grading procedures. Examples of these skills are: ability to develop grading procedures, ability to assign rational, justified and fair grades, etc.

Of No Importance	Of some Importance	Important	Very Important
-----------------------------	-------------------------------	------------------	---------------------------

39. Teachers should learn about skills for providing feedback. Examples of these skills are: ability to report scores to parents, students, and administrators; ability to use scores for purposes of improving instruction, learning, informing policy, etc.

Of No Importance	Of some Importance	Important	Very Important
-----------------------------	-------------------------------	------------------	---------------------------

40. Teachers should learn about the ethics of assessment. Examples of ethics are: ability to determine fairness and unfairness in assessment; ability to detect misinterpretation and misuse of test scores, etc.

Of No Importance	Of some Importance	Important	Very Important
-----------------------------	-------------------------------	------------------	---------------------------

41. Are there other assessment topics you think are important for teachers to learn? List those topics below.

Skills/Topics

42. What are your views about the value of teacher-made tests?

43. Explain, briefly, how you would normally put a classroom test together. (e.g., how do you begin, how much time do you spend, where do the test questions come from ?)

44. In what areas of assessment do you feel you need training? (Describe the topics)

45. How can formal training in classroom assessment be made available to teachers?

Teachers' Background

46. Teaching experience (number of years teaching).
Write the number of years in the space provided.

___ years teaching (total)
___ primary school
___ high school

47. Classes taught

48. Subjects taught

49. Qualification (e.g., JSTC or PTD):

50. What is your gender? ___ female ___ male

Thank you for taking time to complete this survey.

APPENDIX B

TEACHER CERTIFICATION TEST IN ASSESSMENT PRACTICES

- Teacher Certification Test Instructions -

General Instructions

The instructions in boxes below should be read to candidates.

Prior to distributing the test booklets, please:

1. read through this test instructions and the test booklet to be sure you are familiar with them;
2. make sure you have all the required materials that are needed to administer the test, e.g., separate answer sheets for part B.

Give each candidate his/her test booklet and make sure they have pens to write.

Specific Instructions

Test administrator says:

The purposes of the test are:

- (1) to evaluate a candidate's mastery of classroom assessment practices, and,
- (2) evaluate a candidate's skill in applying assessment practices.

The test will require approximately 3 hours to complete.

The test will carry a total of 150 marks. It is to your advantage to attempt all questions.

This test consists of two parts.

Part A which consists of all objective type items. Part B which consists of all performance type items. For Part A, candidates must follow instructions given in the test, and for Part B, a separate answer sheet is provided.

PAUSE. Check that candidates understand the purpose and format of the test. Then say:

Turn to the cover page of your test booklet. Print your name and date of testing. (PAUSE) For Part A, you must answer the items as required by the instructions. Please read the instructions carefully.

Allow candidates time to complete Part A.

Part B

1. This part of the test consists of performance type items.
2. You must make sure that candidates are given answer sheets.

Say:

For items Part B, you must write your answers on a separate answer sheet provided. Please read the instructions carefully.

SOUTH AFRICAN TEACHER CERTIFICATION TEST

NAME: _____

DATE: _____

The purposes of the test are:

- (1) to evaluate a candidate's mastery of classroom assessment practices, and,
- (2) to evaluate a candidate's skill in applying assessment practices.

The test will require approximately 3 hours to complete and will carry a total of 100 marks. It is to your advantage to attempt all questions.

The test is divided into two parts:

Part A consists of all objective type items, and Part B consists of all performance type items. For Part A, candidates must follow instructions given in the test, and for Part B, a separate answer sheet is provided.

Instructions

For multiple-choice items 1 to 10, circle the letter beside your answer.

1. Test scores that accurately reflects mastery of instructional objectives and lead to appropriate inferences about students' achievement are called

 - A. Reliable test scores
 - B. Norm-referenced test scores
 - C. Criterion-referenced test scores
 - D. Achievement test scores

2. Test scores that are consistent and that provide a stable indication of students' performance are called

 - A. Valid test scores
 - B. Reliable test scores
 - C. Norm-referenced test scores
 - D. Criterion-referenced test scores

3. Test scores that are used primarily to compare students' achievement to that of a representative group of students are called

 - A. Valid test scores
 - B. Norm-referenced test scores
 - C. Criterion-referenced test scores
 - D. Achievement test scores

4. Test scores that measure adequately the behavioral objectives they are intended to measure are called

 - A. Valid test scores
 - B. Reliable test scores
 - C. Norm-referenced test scores
 - D. Achievement test scores

5. What score indicates a student relative position in a group in terms of the percentage of group members scoring at or below the student score?
 - A. Stanine
 - B. Percentile rank
 - C. Percentile band
 - D. Z-score

6. Multiple-choice items are described as
- A. Alternative items
 - B. Performance items
 - C. Subjective items
 - D. Objective items
7. A collection of student products that can be used for a comprehensive evaluation of student performance is called
- A. Global assessment
 - B. Analytical assessment
 - C. Holistic assessment
 - D. Portfolio assessment
8. What do you call the score a student receives on a test?
- A. True score
 - B. Observed score
 - C. Ability score
 - D. Error score
9. What is another name for the average score of a set of test scores?
- A. Mode
 - B. Standard deviation
 - C. Mean
 - D. Median
10. Fifty percent of the scores fall below which point in a test score distribution?
- A. Mean
 - B. Median
 - C. Mode
 - D. A score half way between the highest and the lowest test score.

The left hand column identifies statements that describe tests; the right hand column identifies the names of tests. In each space in the first column write the letter corresponding to the type of test being described.

	<u>Test Description</u>	<u>Test</u>
_____	11. Test that determines entry performance on course objectives	a. Final test b. Placement test c. Diagnostic test
_____	12. Test that provides feedback to students and teacher on learning progress	d. Formative test e. Remedial test f. Objective test
_____	13. Determines causes of recurring learning difficulties	g. Performance test
_____	14. Test that provides information for the assignment of grades	

Indicate whether the following statements are True or False. Circle your answer to each statement.

When you prepare a test:

- | | | | |
|---|---|-----|---|
| T | F | 15. | group together items that measure the same learning outcome. |
| T | F | 16. | test directions should include how the test will be scored. |
| T | F | 17. | make sure that each answer position is used about equally often. |
| T | F | 18. | split the items at the bottom of a page so that one part of it appears on one page and the rest on the next page. |
| T | F | 19. | start with objective items first and then include performance items at the end. |

Table 11 is a table of specifications for a test in math. The first column identifies the math content area and the other three columns identify learning outcomes. The number of items in each cell of the table indicate the number of items to be devoted to each area of content in the test. Study the table and then answer the questions that follow.

Table 11

Table of Specifications

Content	Understanding	Recall	Application	Total
Addition	4	4	3	
Subtraction	3	4	3	
Multipli- cation	3	5	2	
Fractions	2	3	2	
Graphs	2	3	2	
Total				
%				

20. How many items assess the content at the understanding level? _____.
21. How many items assess the content area at the recall level? _____.
22. How many items assess the content area at the application level? _____.
23. What is the total number of items in the test? _____.
24. What proportion of the test addresses graphs? _____.
25. What proportion of the test addresses addition? _____.

Column 1 identifies descriptions of item analysis activities. Column 2 identifies the names of three types of item statistics. In each space in the first column write the letter beside the item analysis activity in the second column which best fits the description.

<u>1. Item Analysis Activities</u>	<u>2. Types of Analysis</u>
_____ 26. Calculate the proportion of students who answer each item correctly.	A. Difficulty analysis B. Discrimination analysis
_____ 27. Summarize the proportion of students in the upper and lower groups who select each response choice.	C. Distractor analysis
_____ 28. Compare the proportion of the upper and lower groups who answer each item correctly.	
_____ 29. Locate responses that are not plausible as well as common misconceptions.	
_____ 30. Compare the proportions of students who correctly answer items related to the same objective.	

For each of the following statements, circle A for Agree and D for Disagree.

Test administration is a process that involves

.....

- | | | |
|---|---|---|
| 31. Providing proper written conditions. | A | D |
| 32. Providing feedback on student performance. | A | D |
| 33. Arranging space between students to prevent cheating. | A | D |
| 34. Recording student grades for remediation. | A | D |
| 35. Analyzing student scores. | A | D |
| 36. Keeping interruptions to a minimum. | A | D |

In the box below is a description of the testing practices of Mr. Ndlovu. Read the paragraph below and the statements which follow. Circle the letter that answers the statement. The key is: A=Agree; D=Disagree and N=Neither.

After teaching a unit on prepositions, Mr. Ndlovu decided to give his students a test. The purpose of the test was to determine how students compare with each other. He carefully went through his textbook and constructed multiple-choice items based on the content in the book. He used the exact wording of the textbook for the correct answers to ensure the correctness of the answers. He administered and scored the test. He listed the scores from high to low on the chalkboard and gave each student his/her score. He also gave the student the opportunity to ask questions based on the test.

- | | | | |
|---|---|---|---|
| 37. Some of Mr. Ndlovu's test items measure students at the application level. | A | D | N |
| 38. Mr. Ndlovu's test measures a balanced sample of subject-matter. | A | D | N |
| 39. Mr. Ndlovu uses the type of test items that is best suited for his purposes. | A | D | N |
| 40. Student mastery of subject matter can be determined on Mr. Ndlovu's test. | A | D | N |
| 41. Mr. Ndlovu's test will likely motivate students to overcome their weaknesses. | A | D | N |
| 42. Ranking student scores is a valid measure of reporting student performance. | A | D | N |
| 43. Mr. Ndlovu's test is intended to serve a norm-referenced purpose. | A | D | N |

In the box below is a description of the use of various tests for grading purposes. There are also a series of statements based on the paragraph below. Answer the questions by writing in your answers.

At the end of the year, Mrs. Moloisa administered 8 monthly tests, 3 term tests, a half-yearly exam and a final exam. Based on the analysis of the tests, she decided:

- a. 8 monthly tests should contribute 10 percent to the composite score.
- b. 3 term tests should contribute 20 percent to the composite score.
- c. Half-yearly exam should contribute 30 percent to the composite score.

Answer the following questions.

- 44. What percentage will each monthly test contribute to the composite score? _____%.
- 45. What percentage will each term test contributes to the composite score? _____%.

Using the percentage allocated for each test, identify the weighing factor for monthly test, term test, half-yearly exam and the final exam. Write in your responses in the table below.

Test	Percentage	Weighing Factor
46. Monthly		
47. Term		
48. Half-Yearly		
49. Final		

Which form of assessment is represented by the statement below:

- 50. A teacher informs a student that he mastered 80% of the reading objectives.
 - A. Norm-referenced approach
 - B. Criterion-referenced approach
 - C. Pass-Fail
 - D. Checklist

Table 12 is a summary of scores on an item. The first column identifies the item and the number of students in the upper and lower groups. The second to the fifth column identifies the answer-choices and the number of student responses. Option A is the correct response.

Table 12

Summary of Examinee Performance on Item 1

Item 1. Answer-Choices	*A	B	C	D
Upper Group of 15 students	10	3	2	0
Lower Group of 15 students	7	4	4	0

For item 1 in Table 11, calculate:

51. item difficulty (p)
52. discrimination (d)

Determine the effectiveness of the distractors. Mark with a tick in the appropriate cell in the table below to indicate your answer.

Answer-choice	Effective	Ineffective
53. B		
54. C		
55. D		

The following statements refer to the use of classroom test. Circle an inappropriate (unethical) use of a test.

56. Classroom tests are used for
 - A. Making decisions on student ability.
 - B. Making decisions on student social behavior.
 - C. Making decisions on students receiving scholarships.
 - D. Making decisions on student performance.

YOU HAVE NOW COMPLETED PART A

Part B

1. In this task you are given two objectives. Choose one. You are asked to prepare an objective item specification. Make sure all the necessary details of the item specification are provided. These details are (1) sample instructions and test items, (2) content limits and (3) response limits. The objectives are:

- (a) The student can compute the differences of two-digit whole numbers with or without a regrouping.
- (b) The student can identify the correct verb form/tense to complete a sentence.

2. In this task you are given two objectives. Choose one. You are asked to construct a performance item specification. Make sure all the parts of the item specification are provided. The parts are, (1) administration, (2) Scoring, (3) Administrator Instruction and (4) Stimuli.

The objectives are:

- (a) Given the whole numbers 1 to 20 in numerical form, the student can write the numbers in words.
- (b) The student can follow a four-step direction to carry out given activities.

3. In this task, you will be given two objective item specifications (see Figure 1 and 2). You are asked to write two items from each item specification. Be sure your items are consistent with the rules for preparing objective test items.

Objective

The student can identify the required pronoun to complete a sentence.

Sample Instructions and test Items

Choose the correct pronoun to complete the second sentence. Circle the letter next to the word you choose.

1. Thoko is the only girl in her family.
_____ has three brothers, Khangela, Bafana and Modishe.
a. He b. She c. Her d. They

Content Limits

1. The reading skill requires the student to identify the correct pronoun for a given noun.
2. Nouns for pronouns 'he' and 'she' must show clear gender distinction, i.e., proper names that may apply to both males and females should not be used.
3. Each item will contain at least two sentences. The first sentence will have the noun that serves as a clue to the choice of the correct pronoun. The second sentence has a space for the pronoun.
4. The reading level will be of the third grade.
5. Simple sentences of 3 to 10 words in length will be used.
6. The required pronoun should at any part of the sentence.
7. Pronouns are: he, she, it, they.

Response Limits

1. Each item will have one correct answer and three incorrect answer choices.
2. The correct response will be the pronoun that could be used in the place of the noun in the first sentence.
3. The pronoun will be arranged/given in a random order.
4. Incorrect responses will include:
 - a. pronouns in the set he, she, it, they.
 - b. possessive pronouns in the same gender.
 - c. pronouns that are not in the same form (singular/plural) as the given noun.

Figure 5. Sample Objective Item Specification

Objective

Given a three digit number in numerical form, the student can write the number in words.

Sample Instruction and Test Item

1. Written in words, the number 204 is _____
 - a. Two hundred
 - b. Four hundred and two.
 - c. Two hundred and four.
 - d. Twenty four

Content Limits

1. The student is expected to recognize numbers and be able to recognize them when they are written in words.
2. Each item will have a three-digit number in figures, an incomplete sentence that reads: "Written in words, the number _____ is _____," and four answer choices.
3. Only three-digit whole numbers will be used.

Response Limits

1. The student will respond by choosing the correct name for the given number.
2. Of the four choices, one will be the correct answer.
3. Common mistakes will include:
 - a. Using wrong place value names for some digit(s) or wrong reading order or direction e.g., reading the number from right to left.
 - b. Omitting digit(s) in the number.
 - c. Combining two digit(s) at a time.

Figure 6. Sample Objective Item Specification

4. In this task you are given two performance item specifications (see Figure 3 and 4). You are asked to design two items for each item specification. Be sure your items are consistent with the rules for preparing performance items.

Objective

Given a crossword puzzle and directions, the student can follow the directions to complete/solve the puzzle.

Administration

- Large group administered
- One question will be done in 5 minutes
- Puzzles will be given on students' answer sheets
- One type of puzzle will be used
- Students will solve puzzle by finding words in letter grid of cross-word puzzle.
- Completed puzzles will have words that read down and across only.

Scoring

A point will be given for each word found.

Teacher Instructions

Direct the students to the puzzles and picture clues in their answer sheets.

Example

Find five words in this puzzle. Draw a line around each word you find.

```
t c o m e r s k i n
a s t o r e u h d v
i c u p m n n o b o
l a s a a p u m i t
v t e n n k p e p e
```

Find the following words and draw a line around each word you find. The words are:

up come sun tail cup store

Stimuli

Provide Puzzles

Figure 7. Sample Performance Item Specification

Objective

The student can write months of the year in chronological order.

Administration

- Group administered performance task.
- Time required: approx. 3 minutes
- The teacher/supervisor will show students the page in their test booklets where they are to answer this part of the test.

Scoring

Beside each number check one of the three boxes corresponding to how well the pupil performed.

Yes, Perfectly: If the month is correct and the spelling correct.(2 points)

Yes, Somewhat: If the month is correct but the spelling incorrect.(1 point)

No: If the month is incorrect.
(0 point)

Teacher Instructions

Make sure that the students have turned to the right page. Say to the student:

Stimuli

The twelve months of the year written in chronological order are: January, February, March, April, May, June, July, August, September, October, November and December.

Sample Format

<u>Position</u>	<u>Month</u>
1	_____
2	_____

Figure 8. Sample Performance Item Specification

Judge's Item Rating Form
(Assessment of Item Validity)

Reviewer: _____ Date _____

First, read carefully through the list of item specifications and test items. Next, please indicate how well you feel each item reflects the item specification it was intended to measure. Please use the five-point rating scale shown below:

Poor	Fair	Good	Very Good	Excellent
1	2	3	4	5

Circle the number corresponding to your rating beside the test item number. Write any suggestions for improvements on the item specification of test items on your copies of the material.

<u>Objective</u>	<u>Test Item</u>	<u>Item Rating</u>				
1	1	1	2	3	4	5
	2	1	2	3	4	5
	3	1	2	3	4	5
	4	1	2	3	4	5
	5	1	2	3	4	5
	6	1	2	3	4	5
	7	1	2	3	4	5
	8	1	2	3	4	5
	9	1	2	3	4	5
	10	1	2	3	4	5
2	11	1	2	3	4	5
3	12	1	2	3	4	5
	13	1	2	3	4	5
	14	1	2	3	4	5
8	15	1	2	3	4	5
	16	1	2	3	4	5

Figure 9. Judge's Item Rating Form

Judge's Item Rating Form, Continued:

<u>Objective</u>	<u>Test Item</u>	<u>Item Rating</u>				
	17	1	2	3	4	5
	18	1	2	3	4	5
	19	1	2	3	4	5
7	20	1	2	3	4	5
	21	1	2	3	4	5
	22	1	2	3	4	5
	23	1	2	3	4	5
	24	1	2	3	4	5
	25	1	2	3	4	5
10	26	1	2	3	4	5
	27	1	2	3	4	5
	28	1	2	3	4	5
	29	1	2	3	4	5
	30	1	2	3	4	5
9	31	1	2	3	4	5
	32	1	2	3	4	5
	33	1	2	3	4	5
	34	1	2	3	4	5
	35	1	2	3	4	5
	36	1	2	3	4	5
11	37	1	2	3	4	5
	38	1	2	3	4	5
	39	1	2	3	4	5
	40	1	2	3	4	5
	41	1	2	3	4	5
	42	1	2	3	4	5
	43	1	2	3	4	5
12	44	1	2	3	4	5
	45	1	2	3	4	5
	46	1	2	3	4	5
	47	1	2	3	4	5
	48	1	2	3	4	5
	49	1	2	3	4	5
13	50	1	2	3	4	5
10	51	1	2	3	4	5
	52	1	2	3	4	5
	53	1	2	3	4	5
	54	1	2	3	4	5
	55	1	2	3	4	5
14	56	1	2	3	4	5

Scoring Key

1. C
2. B
3. B
4. A
5. B

6. D
7. D
8. B
9. C
10. B

11. B
12. D
13. C
14. A

15. T
16. T
17. T
18. F
19. T

20. 14
21. 19
22. 12
23. 45

24. 0.16
25. 11/45

26. A
27. C
28. B
29. C
30. A

31. A
32. D
33. A
34. D
35. D

36. A
37. D
38. A
39. A
40. D

41. N
42. A
43. A

44. 1.25%
45. 6.67%

46. 1.25
47. 6.67

48. 30
49. 40

50. B

51. 0.57
52. 0.2

53. B effective
54. C effective.
55. D ineffective
56. B

Part B

1. Scoring

Rating

	Yes	No	Unsure
<u>Instructions and Sample Item</u>			
1. Are the instructions informative and clear?			
2. Does the sample item measure the objective?			
3. Will the sample item serve as a model for preparing valid items?			
<u>Content Limits</u>			
4. Do the content limits provide sufficient information about the content and format of the items to guide the item writing process?			
<u>Response limits</u>			
5. Are the limits of the content adequately described?			
6. Are the common mistakes or distractors explained in sufficient detail to guide the item writing process ?			

2. ScoringRating

	No	Yes	Unsure
<u>Administration</u>			
1. Was time to complete the task specified?			
2. Is the time to complete the task appropriate?			
3. Were the instructions to candidates clearly defined?			
<u>Scoring</u>			
4. Were the criteria for scoring appropriate?			
5. Are the components of the rating/scoring rubric clearly stated?			
<u>Administrators' Instructions</u>			
6. Were the candidates instructions clearly written?			
<u>Stimuli</u>			
7. Were suitable stimuli given?			

ScoringRating

	Yes	No	Unsure
<u>Multiple-choice</u>			
1. Is the item measuring one important learning outcome?			
2. Is the stem in the item presenting a single clearly formulated problem?			
3. Is the stem of the item stated in simple, clear language?			
4. Is any negative wording emphasized in the item stem?			
5. Is there a single correct or clearly best answer?			
6. Are the answer choices grammatically consistent with the stem of the item?			
7. Were clues that might enable students to select the correct answer avoided?			
8. Are the distractors plausible and attractive to the uninformed?			
9. Are the answer choices of approximately the same length?			

3 & 4, Continued:

	Rating		
	No	Yes	Unsure
<u>True-False</u>			
10. Is only one central idea included in the statement?			
11. Is the statement short and using simple vocabulary and sentence construction?			
12. Is the statement worded so that it can be judged as true or false?			
13. Are clues avoided?			
<u>Matching</u>			
14. Is only homogeneous material included?			
15. Are lists of items and answer-choices of reasonable length?			
16. Are responses to the items placed on the right?			
17. Are the responses placed in alphabetical or numerical order when an order exists?			
18. Are the directions specific on the basis for matching?			

5 & 6

Scoring

Rating

Question	Yes	No	Unsure
1. Is the task a valid measure of the objective?			
2. Does the item describe a clear task to be performed by the student?			

REFERENCES

- Airasian, P. W. (1991). Classroom assessment. New York: McGraw-Hill, Inc.
- Airasian, P. W. (1990). Topics and aids for teaching classroom assessment issues and practices to teachers. Prepared for National Council on Measurement in Education, Presession on teaching measurement concepts to teachers. Boston.
- Anderson, J. O., & Bachor, D. G. (1990, June). What should a classroom testing program look like? The functional factors of an Assessment Program in Primary Classrooms. Paper presented at the Second Canadian Conference on Classroom Testing, Vancouver, Canada.
- Bachor, D. G. (1989, June). Towards improving assessment of students with special needs: Expanding the data base to include classroom performance. Paper presented at the Conference on Classroom Testing, Victoria, British Columbia.
- Beck, M. D., & Stetz, F. P. (1979, April). Teacher opinions of standardized test use and usefulness. Paper presented at the meeting of the American Educational Research Association, San Francisco.
- Boothroyd, R. A., McMorris, R. F., & Pruzek, R. M. (1992, April). What do teachers know about measurement and how did they find out? Paper presented at the meeting of the National Council on Measurement in Education, San Francisco.
- Brown, F. G. (1983). Principles of educational and psychological testing (3rd edition). New York: Holt, Rinehart and Winston.
- Burke, M. P. (1985). Requirements for certification (5th edition). Chicago, IL: The University of Chicago Press.
- Cangelosi, J. S. (1991). Evaluating classroom instruction. New York: Longman.
- Carberry, G. E. (1992). A descriptive study of self-perceived functional roles and attitudes of a development officers in relation to selected performance indicators of successful implementers of planned change. Unpublished doctoral dissertation, University of Massachusetts, Amherst.

- Carey, L. M. (1988). Measuring and evaluating school learning. Boston: Allyn and Bacon, Inc.
- Cooper, C. (1992). Race relations survey. Cape Town: Galvin & Sales.
- Dassa, C. (1989, June). The integration of educational diagnosis to classroom assessment: from a "horizontal" to a "vertical" Methodology; two Quebec studies. Paper presented at the Conference on Classroom Testing, Victoria, Canada.
- Dorr-Bremme, D. W. (1983). Assessing students: Teachers' routine practices and reasoning. Evaluation Comment, 6, 1-12.
- Duminy, P. A., & Sohng, W. F. (1981). Didactics: theory and practice. Cape Town: Longman.
- Elliot, S. M., & Murphy, E. J. (1991). The Texas master teacher examination. A new generation of teacher assessment. Amherst MA: National Evaluation Systems, Inc.
- Engelbrecht, D. A. (1980). Education. Pretoria: Van Schaik.
- Entwistle, N. J., & Nisbet, J. D. (1972). Educational research in action. London: Hodder and Stoughton.
- Frery, R. B., Cross, H., & Weber, L. J. (1992, April). Testing and grading practices and opinions in the nineties: 1890's or 1990's. Paper presented at the meeting of the National Council on Measurement in Education, San Francisco.
- Goddard, R. E. (1986). Teacher certification requirements (4th edition). Sarasota, FL: Teacher Certification Publication.
- Gong, B., Venezsky, R., & Mioduser, D. (1992, April). Instructional assessment: Lever for systematic change in science education classrooms. Paper presented at the meeting of the National Council on Measurement in Education, San Francisco.
- Goslin, D. (1967). Teachers and testing. New York: Russell Sage Foundation.
- Green, K. E. (1990, April). Differences between teachers and students in opinions about testing and test use. Paper presented at the meeting of the National Council on Measurement in Education, Boston.

- Gronlund, N. E. (1993). How to make achievement tests and assessments (fifth edition). Boston: Allyn and Bacon.
- Gullickson, A. R., & Hopkins, K. D. (1987). The context of educational measurement instruction for preservice teachers: Professor perspectives. Educational Measurement: Issues and Practice, 3(3), 2-16.
- Hall, B. W., Carrol, D., & Comer, C. B. (1988). Tests use among classroom teachers and its relationship to teaching level and teaching practices. Applied Measurement in Education, 1(2), 145-156.
- Hambleton, R. K. (1990, June). What skills do teachers need in educational testing? Paper presented at the Second Canadian Conference on Classroom Testing, Vancouver, Canada.
- Harnisch, D. L., & Switzer, D. M. (1991). Teachers' perceptions of the instructional uses of tests. Advances in program evaluation, I(B), 163-188.
- Hills, R. J. (1976). Measurement and Evaluation in the Classroom. Columbus, Ohio: Charles E. Merrill Publishing Company.
- Hufker, R. (1982). Mapping the long range development of the national teacher examinations. Paper presented to the Research and Development Committee, National Teacher Examinations Policy Council, Houston, TX.
- Impara, J. C., Divine, K. P., Bruce, F. A., & Liverman, M. R., & Gay, A. (1991). Does interpretative test score information help teachers? Educational Measurement: Issues and Practice, 10, 16-18.
- Izard, J. (1991). Issues in assessment of non-objective and objective examination tasks. Issues in public examinations. A selection of the proceedings of the 1990 IAEA conference, 73-83.
- Jett, D. L., & Schafer, W.D. (1992, April). Classroom teachers move to the center Stage in the assessment arena-ready or not!. Paper presented at the meeting of the American Educational Research Association, San Francisco.
- Kellaghan, T., Madaus, G., & Airasian, P. (1982). Effects of standardized testing. Boston: Kluwer-Nijhoff.

- Kubiszyn, T., & Borich, G. (1984). Educational testing and measurement. Dallas: Scott, Foresman and Company.
- Maguire, T. O. (1992, June). Grounded authentic assessment and teacher education. Paper presented at the Second Canadian Conference on Classroom Testing, Vancouver, Canada.
- Malaka, L. M. (1992). Apartheid education as a mechanism for political control: The role of testing in schools and the national examination system. Paper submitted in partial fulfillment for the Comprehensive Examination Requirement, University of Massachusetts at Amherst.
- Marso, R. N., & Pigge, F. L. (1990, April). Training, job titles, and responsibilities of directors of public school standardized testing programs. Paper presented at the meeting of the National Council on Measurement in Education, Boston.
- Mathonsi, E. N. (1988). Black matriculation results. Johannesburg: Skotaville.
- Mayo, S. T. (1964). What experts think teachers ought to know about educational measurement. Journal of Educational Measurement, 1, 79-86.
- Mayo, S. T. (1967). Preservice preparation of teachers in educational measurement. Chicago, IL: Loyola University.
- McAllister, P. H. (1991). Overview of state legislation to regulate standardized testing. Educational Measurement: Issues and Practice, 10, 19-22.
- McIntyre, I. (1990, June). Classroom assessment: What research do practitioners need? Paper presented at the Second Canadian Conference on Classroom Testing, Vancouver, Canada.
- McMorris, R. F., & Boothroyd, R. A. (1992, April). Tests that teachers build: an analysis of classroom tests in science and mathematics. Paper presented at the meeting of the National Council on Measurement in education. San Francisco.
- Miller, D. C., & Erickson, H. E. (1985). Teacher-written student tests: A guide for planning, creating, administering, and assessing. Washington, DC: National Education Association.

- Nava, F. J. G. (1992, April). The effect of student characteristics on the grading process. Paper presented at the meeting of the National Council on Measurement in Education, San Francisco.
- Newman, D. C. (1981). Teacher competency in classroom testing, measurement preparation, and classroom testing practices (Doctoral dissertation, Georgia State University). Dissertation Abstracts International, 45(2), 1111A.
- Newman, D. C., & Stallings, W. M. (1982, March). Teacher competency in planning testing, measurement preparation, and classroom testing practices. Paper presented at the meeting of the American Educational Research Association, New York (ERIC Document Reproduction Service No. ED 220491).
- O'Sullivan, R. E., & Chalnick, M. K. (1991). Measurement-related coursework requirements for teacher certification and recertification. Educational Measurement: Issues and Practice, 10(1), 17-19, 23.
- Plake, B. S., Impara, J. C., & Fager, J. J. (1993). Assessment competencies of teachers: A national survey. Educational Measurement: Issues and Practice, 12(4), 10-12.
- Popham, W. J. (1990). Modern educational measurement: A practitioner's perspective (second edition). Englewood Cliffs, New Jersey: Prentice-Hall.
- Popham, W. J. (1991). Appropriateness of teachers' test-preparation practices. Educational Measurement: Issues and Practice, 10, 12-15.
- Popham, W. J., & Hambleton, R. K. (1990). Can you pass the test on testing? Principal, 38-39.
- Randhawa, B. S. (1990, June). Construction of curriculum relevant tests by teachers and experts. Paper presented at the Second Canadian Conference on Classroom Testing, Vancouver, Canada.
- Rogers, W. T. (1992, June). A call for measurement standards in Canada. Paper presented at the Second Canadian Conference on Classroom Testing, Vancouver, Canada.
- Rosenfeld, M., Thornton, R. E., & Skurnik, L. S. (1986). Relationships between job function and the NTE core battery (Research Reproduction No. 86-8). Princeton, NJ: Educational Testing Service.

- Rudman, H. C. (1980). Integrating assessment with instruction. In Testing in Our Schools. Washington, D.C: National Institute of Education.
- Salmon-Cox, L. (1981). Teachers and standardized achievement tests: What's really happening? Phi Delta Kappan, 62(9), 631-634.
- Sanders, J. R. (Chairman). (1990). Standards for teacher competence in educational assessment of students. Educational Measurement: Issues and Practice, Winter, 30-32.
- Schafer, W. D. (1990, April). Essential assessment skills in professional education of teachers. Paper presented at the meeting of the National Council on Measurement in Education, Boston.
- Schafer, W. D., & Lissitz, R. W. (1987). Measurement training for school personnel: Recommendations and reality. Journal of Teacher Education, 38(3), 57-62.
- Stiggins, R. J. (1989). Teacher training in assessment: Overcoming the neglect. Teacher training in assessment, 7, Buros Nebraskas Symposium in Measurement and Testing. New York: Erlbaum.
- Stiggins, R. J. (1991). Assessment literacy. Phi Delta Kappan, 534-539.
- Stiggins, R. J. (1992, June). Making assessment training relevant for teachers. Paper presented at the Second Canadian Conference on Classroom Testing, Vancouver, Canada.
- Stiggins, R. J., & Conklin, N. F. (1992). In teachers' hands. New York: State University of New York Press.
- Stiggins, R. J., Griswold, M. M., & Wikelund, K. R. (1989). Measuring thinking skills through classroom assessment. Journal of Educational Measurement, 26(3), 233-246.
- Syllabus. (1980). Secondary Education Diploma & Primary Teachers Diploma. Department of Education and Training, South Africa, Pretoria.
- Taylor, A. R. (1990, June). Emerging needs of the practitioners in B. C. classrooms. Paper presented at the Second Canadian Conference on Classroom Testing, Vancouver, Canada.
- Vrey, J. D. (1979). The self-actualizing educand. Pretoria: University of South Africa.

- Webster, W. J., Mendro, R. L., & Almaguer, T. O. (1992, April). Measuring the effects of schooling: Expanded school effectiveness indices. Paper presented at the meeting of the American Educational Research Association, San Francisco.
- Wiersma, W., & Jurs, S. G. (1985). Educational measurement and testing. Boston: Allyn and Bacon, Inc.
- Wilson, R. J. (1990, June). The context of classroom procedures in evaluating students. Paper presented at the Second Canadian Conference on Classroom Testing, Vancouver, Canada.
- Wilson, R. J. (1989, June). Classroom processes in evaluating student achievement. Paper presented at the Conference on Classroom Testing, Victoria, Canada.
- Yeh, J. (1978). Test use in schools. Washington, DC: Department of Health, Education and Welfare/National Institute of Education.
- Yeh, J. P. (1980). A reanalysis of test use data. Los Angeles, CA: Center for the Study of Evaluation.

