

THE UNIVERSITY OF KWAZULU-NATAL

**AN INVESTIGATION OF ASSESSMENT PRACTICES IN GRADE 4
MATHEMATICS**

BY

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ABSTRACT

The purpose of this study was to investigate the assessment practices in Grade 4 Mathematics classrooms. The study sought to determine whether teachers understood what is required by the Department of Education (DoE) assessment policy, and whether they practice what is required by the policy. If they were not practicing what is required (as purported by Ramsuran (1999), it also needed to be determined why this was the case. The study also sought to expose the gap between the policy and practice.

Three teachers from different schools were sources of data: one teacher from a school in a deeply rural area, another from a semi-rural area and the last from a semi-urban area. Data were collected using semi-structured one-on-one interviews. Teachers were visited in their schools and each interview took one hour.

The data collected revealed that teachers are still not clear about assessment. This was also found by Ramsuran (1999), who stated that teachers were still not clear about how to implement continuous assessment. According to the DoE, continuous assessment is the chief method of assessing learners. The study also revealed that teachers were still using traditional forms of assessment - tests and examinations - and not other forms of assessment as stipulated by the policy. Challenges faced by the teachers when doing assessment were also prominent. An interesting challenge was that most learners came from broken families, and there was no one to help them with schoolwork at home; this resulted in learners not doing their assignments and projects, which delayed the completion of assessment.

The study recommends that all teachers should be in possession of the policy, and that workshops should be organised by the DoE to help teachers with assessment. Lastly, proper assessment structures should be set up in each and every school.

DECLARATION

I, THOMAS THABANI MEMELA, declare that the research involved in this dissertation, entitled: '**An investigation of assessment practices in Grade 4 Mathematics**', is my own original work. All the sources that I have used have been properly acknowledged by means of complete references.

Signature: _____
THOMAS THABANI MEMELA

February 2011

Statement by Supervisor

As a candidate's supervisor I have/have not approved this dissertation for submission

Signed: _____ Name: _____

Date: _____

DEDICATION

This dissertation is dedicated to my mother Rose Demba Memela,
my wife, Nompumelelo Memela and my two children Nocky and Sinenhlanhla

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TABLE OF CONTENTS

PRELIMINARY PAGES

Title	(i)
Abstract	(ii)
Declaration	(iii)
Statement by supervisor	(iv)
Dedication	(v)
Acknowledgements	(vi)

CHAPTER 1.

INTRODUCTION

1.1 Background to the study	1
1.2 Rationale	3
1.3 Focus and purpose of the study	3
1.3.1 Research aims	4
1.3.2 Critical questions	4
1.4 Research design and methodology	4
1.5 Validity	5
1.6 Limitations	5
1.7 Outline of the rest of the study	6

CHAPTER 2. LITERATURE REVIEW

2.1 Introduction	7
2.2 Definition of assessment	7

2.3 The principles of good assessment	13
2.3.1 Assessment should be valid	13
2.3.2 Assessment should be reliable	14
2.3.3 Assessment should be transparent	15
2.3.4 Assessment should be authentic	15
2.3.5 Assessment should be fair	15
2.3.6 Assessment should motivate students to learn	16
2.3.7 Assessment should promote deep learning	16
2.3.8 Assessment should be equitable	17
2.3.9 Assessment should be formative - even when primarily intended to be summative	17
2.4 Traditional assessment	17
2.5 Alternative or authentic assessment	21
2.6 Assessment in South Africa: Assessment policy	27
2.6.1 Assessment in C2005	27
2.6.2 Assessment in Revised NCS	29
2.6.3 Assessment in the NCS	30
2.7 Conceptual framework	34
2.8 Conclusion	34
CHAPTER 3. RESEARCH DESIGN AND METHODOLOGY	
3.1 Introduction	35
3.2 Consent for the study	35
3.3 Research design and methodology	36
3.3.1 Description of the sample	36

3.3.2 Method of collecting data	37
3.4 Validity of data	37
3.4.1 Validity	37
3.5 Conclusion	40
CHAPTER 4. DATA ANALYSIS	
4.1 Introduction	41
4.2 Research participants	41
4.3 Key research questions	41
4.4 The interviews	42
4.5 Conclusion	43
CHAPTER 5. DISCUSSION AND FINDINGS	
5.1 Introduction	44
5.2 Discussion	44
5.2.1 Impact of non-availability of information from the DoE	44
5.2.2 Teachers' understanding of and approach to assessment	45
5.2.3 Understanding of the assessment policy	45
5.2.4 Implementation of the policy	47
5.2.5. What do learners prefer?	49
5.2.6 School support in implementing assessment	50
5.3 Challenges facing teachers when implementing the policy	52
5.3.1 Too many learning areas in Grade 4	52
5.3.2 Learners' home background	52
5.3.3 Parental involvement	53
5.3.4 Overcrowded classes	54

5.3.5 Learners' commitment to their school work	54
5.3.6 Discipline	55
5.3.7 Resources	55
5.3.8 Teacher support	56
5.4 Findings of the study	56
5.4.1 Understanding and implementation of assessment	56
5.4.2 Challenges teacher face when trying to implement assessment policy	60
5.5 Conclusion	61
CHAPTER 6. RECOMMENDATIONS AND CONCLUSION	
6.1 Recommendations	62
6.2 Conclusions	63
REFERENCES	64
LIST OF TABLES	
Table 2.1: Main differences between traditional assessment and continuous Assessment	26
Table 2.2: Continuous assessment framework as illustrated in the NCS	32
Table 2.3: Number of formal recorded assessment tasks for Mathematics, Grades 4-6	33
Table 2.4: Codes and percentages used for recording and reporting in Grades R-6	33
Table 4.1: Description of the participants	43

APPENDICES

Appendix 1. Letters to the principals	69
Appendix 2. Consent letters to the participants of the study	72
Appendix 3. A letter of permission to the education officer	75
Appendix 4. Declaration of the participant	76
Appendix 5. Semi-structured interview schedule	77

CHAPTER 1. INTRODUCTION

1.1 Background to the study

Assessment is a very important component of the curriculum (National Curriculum Statement, 2005). Teachers assess learners in order to know if they understood what was taught. Learners assess themselves, other learners and even teachers. If learners are given good assessment, they will get good education. Murphy and Torrance (1988) argue that good education by definition encompasses good assessment.

According to the Department of Education (DoE) 's National Curriculum Statement (NCS) for Grade R to Grade 9, in the document *Guidelines for Mathematics* (2005), assessment is a process of collecting, synthesising and interpreting information to assist teachers, parents and other stakeholders in making decisions about progress. It involves gathering and organising information (evidence of learning) in order to review what learners have achieved. The DoE further states that assessment informs decision-making with regard to teaching, and helps teachers to establish whether learners are making progress towards the required levels of performance. Lambert and Lines (2000) define assessment as the process of gathering, interpreting, recording and using information about the response to the educational task. According to Rowntree (1977), assessment is occurring whenever one person, in some kind of interaction (direct or indirect) with another, is conscious of obtaining and interpreting information about the knowledge and understanding or the abilities and attitudes of that person. The author sees assessment as a human interaction. The DoE (2002b) gives the purposes of assessment as: to develop learners' skills and attitudes, to identify the needs of learners, and to enable teachers to reflect on their practice.

According to Torrance (1995), assessment is divided into two kinds: traditional assessment and authentic or alternative assessment. Torrance (1995) defines traditional assessment as that which concentrates on the use of paper and pencil tests only, its purpose being to compare the student with the norm or average of other students. Torrance (1995) defines authentic assessment as performance assessment and also assessment that seems to be more practical, realistic and changing. Broadfoot (1996) refers to traditional assessment as based on public examination and formal testing, and states that traditional assessment puts an

emphasis on comparison between students rather than a description of specific and changing levels of attainment. Comparison between two students is called norm referencing.

After the South African elections in 1994, a new democratic government came into power, which introduced a curriculum which was non-racial and non-sexist (Harley & Wedekind, 2004). The new curriculum came with a new assessment policy. In 1997 the new government started piloting the curriculum, which was based on outcomes and was called Outcomes-based Education (OBE).

The new policy brought with it assessment which was an alternative to traditional assessment, and is usually known as authentic assessment. The new assessment, according to the DoE (2002b), was more than pencil and paper examination, and included the assessment of skills, knowledge, attitude and values.

In 1998 the South African Government through the DoE introduced the new curriculum, which was better known as C2005. This curriculum was first introduced in Grade 1. The Government thought that by 2005, implementation of the curriculum would be completed from Grade 1 through to Grade 12 (DoE, 1997). The new curriculum, according to the DoE, was going to meet the demands of the new South Africa. It also aimed to meet the demands prevalent elsewhere in the world, where the trend was to move away from using traditional assessment to a new approach.

In 2004 and 2005 the Government decided to review the new curriculum. The topic of my study is 'An investigation of assessment practices in Grade 4 Mathematics'. My research will try to investigate assessment practices by teachers as part of the curriculum, and will also try to determine if the teachers are practicing what is required by the policy. Ramsuran (1999) states that teachers are still not practicing what is purported by the policy.

This study examined three critical questions. The participants were three Grade 4 teachers who came from three schools with different contexts: the first from a school situated in a rural area; the second from a school in a semi-rural area; and the third from a school in a semi-urban area. I think that using teachers from different contexts makes the data more valid and reliable. The data were collected using semi-structured interviews, then analysed in order to provide the findings and conclusion of the study.

1.2 Rationale

The assessment policy in the new South Africa curriculum (C2005), through its OBE, clearly states that assessment practices should not only be tests and exams but should include other techniques such as project work, assignments, investigation, journal writing and others. The problem I have encountered since I started teaching 18 years ago is that in Grade 5 learners seem reluctant to be assessed by other forms of assessment techniques or strategies, and seem to like tests and exams only. This prompted me to conduct this research, to see what was happening before the students reached this grade, i.e. in Grade 4.

In my school we have subject committees which sit once a week to discuss issues regarding the teaching and assessment of Mathematics. Although we have these committees which look at the curriculum, specifically Mathematics and assessment, I have seen that some teachers are not prepared and are reluctant to implement the new assessment approach, because they still believe in the traditional way of assessment (pencil and paper assessment). Through my interaction with the teachers, it has become clear that they are still not clear about the requirements of the assessment policy. This also prompted me to conduct this study.

I also facilitated the NCS with teachers in my district. In my three years of facilitating NCS, teachers have shown that they want more time to be workshopped on assessment. In fact, they even suggested a workshop specifically for assessment. This on its own shows that there was a real need for this study to find out why teachers are not clear about the assessment policy.

1.3 Focus and purpose of the study

The purpose of the study was to investigate the assessment practices in Grade 4 Mathematics classrooms. The study sought to determine if the teachers understood what was required by the assessment policy, and whether the teachers practiced what was required by the assessment policy. If they were not practicing what was required (as purported by Ramsuran (1999), then we also need to know why this is the case, which this study also aimed to determine. Lastly, this study also sought to expose the gap between policy and practice.

1.3.1 Research aims

Any research or study is undertaken because of a problem that it seeks to expose or resolve. This study was no different. The aims of this study were as follows:

1. To find out teachers' understanding of the assessment policy.
2. To determine exactly what assessment practices are used by teachers in their Grade 4 Mathematics classroom when they are assessing.
3. To establish the gap between the policy and the practices, motivated by Ramsuran's (1999) claims that there is such a gap.

The study aimed to achieve its objectives by answering the critical questions outlined below.

1.3.2 Critical questions

1. What are teachers' understanding of the assessment policy?
2. What are the assessment practices of Grade 4 Mathematics teachers?
3. What are the gaps between policy and practice?

1.4 Research design and methodology

This study aimed to investigate assessment practices in a Grade 4 Mathematics class. The DoE adopted a new curriculum in 2005, which brought with it a new assessment policy which was alternative to the old or traditional method. The new assessment curriculum is better known as the National Curriculum Statement (NCS).

The study also sought to find out if the teachers were assessing according to the policy or not. Ramsuran (1999) in her article argues that teachers are still not practicing what is intended by the policy through its continuous assessment.

The study is located in the interpretivist paradigm. According to Kuhn (1970) in Usher (1996), a paradigm is a constellation of beliefs, values and techniques shared by members of a given community; the author further states that a paradigm is an exemplar or way of working that functions as a model for what and how to do research. Glesne (1999) also states that an interpretivist paradigm portrays the world in which reality is socially constructed,

complex and ever-changing. My study is located in the interpretivist paradigm because I believe in socially constructed information where people are given the opportunity to provide information freely. I also believe that people should share information by giving of their own experience. In this study I wanted teachers to give me information about assessments they practiced in a Mathematics classroom. The sample, method of collecting data and validity are discussed in Chapter 3.

The process of selecting the sources of data is called sampling (Leedy & Omrod, 2005). The sampling which I used was purposeful, and was utilised to gain the most information about the topic I was researching. My study used three participants as sources of data, and they were each asked the same six questions.

Each teacher was visited in their respective school to collect data through one on one semi-structured interviews. I used an interview with six questions to be answered by the participants. The interviews took one hour each.

The participants were assured of confidentiality and their minds put at ease on ethical issues. Vithal and Jansen (1997) state that participants should be assured that confidential and ethical issues involved in the research have been taken into consideration.

1.5 Validity

Validity plays a very important part in research practices. Cohen and Manion (2001) argue that an instrument is valid if it measures what it is supposed to measure. My study used three teachers from different school contexts, since I suspected that they might not be assessing learners in the same way, and that would give me the information I sought as to what assessment practices were practiced in Grade 4 Mathematics class. In order to establish more validity, the study will use verbatim extracts that come directly from the three participants.

1.6 Limitations

Any study which is conducted has its own limitations, which may be expected or unexpected (Vithal and Jansen, 1999). I think it is important for me to mention some of the limitations or problems that may arise during the study.

Some of the limitations that could have been experienced during this study were as follows. The first limitation could be access to Ukhozi Primary School (pseudonym) situated in a rural area. When it is raining heavily there are potential problems of access because the road becomes muddy and slippery. The second limitation could be teachers refusing to be researched. Another limitation could be that in primary schools there is no specialization, and I may find that the participants are new to the teaching of Mathematics and therefore inexperienced in the subject. Another limitation could be the withdrawal of the participant at a later stage of the process. Time could also be a limitation. Primary school teachers in most schools do not have free periods. The research could be done after school hours if permitted by the principal and the participant – but this may be a problem because participants may be reluctant to use their own time for research. The last possible limitation is a principal who may not want his or her staff member to be interviewed and not allow data sources like assessment books to be used because of fear of exposure.

1.7 Outline of the rest of the study

This study is reported in this document as follows. Chapter 1 - provides the background to the study, and deals with the focus and purpose of the study, rationale, aims, critical questions and limitations. Chapter 2 reviews the literature relevant to the study, based on assessment in general and also assessment specifically for Mathematics. Chapter 3 explains the detailed methodology of the study, while Chapter 4 provides analysis of the data. Chapter 5 outlines the discussion and findings of the study, and the recommendations and conclusion are given in the final chapter, Chapter 6.

CHAPTER 2. LITERATURE REVIEW

2.1 Introduction

Assessment is an important component of the curriculum. According to the assessment guidelines for Mathematics in the NCS (2002), assessment is an integral part of teaching and learning and should be included in all levels of planning. Assessment is done in order to determine if learners have truly understood what was taught during teaching and learning (Summer, 1987). This is also supported by Murphy and Torrance (1988), when they say that good education by definition encompasses good assessment. The DoE (2002a) defines assessment as the continuous, planned progress of gathering information about performance of learners measured against the assessment standards of the learning outcomes. In this literature review I will look at and review literature by different authors on assessment, both in South Africa and abroad.

This literature review is divided into the following subsections: definition of assessment, principles of good assessment, traditional assessment (norm referencing), alternative or authentic assessment (criterion referencing) and the assessment policy in South Africa.

2.2 Definition of assessment

Many authors have written about assessment – with many views on the subject. Here I look at definitions of assessment by different authors. According to the DoE (1997), assessment in the OBE system enabled both learners and teachers to determine whether learners are achieving the agreed outcomes or not. The DoE (1997) state the variety of assessment methods that should be available to ensure that the methods are suited to the performance being assessed. This document, *Curriculum 2005: Lifelong Learning for the 21st Century* (1997), further states that evidence collection for use will be ongoing, linked with the normal course of learning or working, and not be a once-off assessment occasion. Learners will understand the assessment process and the criteria to be applied so that they also contribute to the planning and accumulation of evidence.

Van der Horst and McDonald (2004) refers to assessment as a process of making a decision about the learning of the learners' knowledge, learners' behaviour, or performances, or learners values and attitudes.

Suskie (2004) defines assessment as the process of establishing clear, measurable expected outcomes of student learning, ensuring that students have sufficient opportunities to achieve those outcomes. The author also refers to assessment as the process of systematically gathering, analysing and interpreting evidence to determine how well students' learning matches our expectations, using the resulting information to understand and improve student learning.

Lubisi (1999) defines assessment - which the author calls the outcomes-based assessment - as assessment concentrating on the outcomes. In the revised NCS for Mathematics (2002b), the DoE defines assessment as a continuous, planned process of gathering information about the performance of learners measured against the assessment standards of the learning outcomes. The definition further states that it requires clearly defined criteria and a variety of appropriate strategies to enable teachers to give constructive feedback to the learners and report to parents and other interested people.

The DoE (2005b) in *The National Protocol on Assessment for Schools in the General and Further Education and Training Band Grades R-12* defines assessment as a process of collecting, synthesising and interpreting information to assist teachers, parents and other stakeholders in making decisions about the progress of learners. It further states that OBE forms the foundation of the curriculum. The definition further states that classroom assessment provides an indication of learner achievement in the most efficient manner, by ensuring that adequate evidence of achievement is collected using various forms of assessment, and that classroom assessment should be both formal and informal.

According to the DoE in its *National Curriculum Statement, General Education and Training: Assessment Guidelines for Mathematics Intermediate and Senior Phases* (2005a), assessment in the NCS is defined as a process which involves gathering and organising information which is evidence of learning in order to review what learners have achieved. The definition further states that it informs decision-making in respect of teaching and helps teachers to establish whether learners are making progress towards the required level of

performance. Hale and Macintosh (1976) define assessment in three ways: terminal, periodic and continuous assessment. The authors define terminal assessment as a measure/s of attainment at the end of a course. Periodic assessment is defined as usually intended to provide a similar measure of attainment by means of a series of intermittent probes taken at intervals throughout a course. Continuous assessment is defined as continuous updating of judgement about pupils' performance in relation to specific criteria, which will permit a cumulative judgement upon these same criteria.

Kizlik (2010) refers to assessment as the process by which information is obtained relative to some known. Assessment is a broad term that includes testing. The author goes on to state that a test is a special form of assessment made under contrived circumstances, but not all assessments are tests. We test a lesson or unit. We assess progress and the result at the end of the school year through testing. Whether explicit or not, assessment is most usefully connected to some goal or objective for which it is designed. We test or assess to determine whether or not an objective or goal has been obtained. Assessment of skill attainment is rather straightforward – either the skill exists in some acceptable way, or it doesn't. Assessment of understanding is more complex. Skills can be practiced; understanding cannot. The author argues that we can assess a person's performance in a variety of ways, but there is always a leap or an inference that we make about what it signifies about what he knows.

Rowntree (1987) defines assessment in education as occurring whenever one person, in some kind of interaction direct or indirect with another, is conscious of obtaining and interpreting information about knowledge and understanding or abilities and attitudes of that other person. The author further states that assessment is an attempt to know the other person, and the author sees assessment as a human encounter. Rowntree identifies five dimensions of assessment: Why assess?; What to assess?; How to assess?; How to interpret?; and How to respond? The author further states that assessment has as its purpose diagnosis and evaluation of what knowledge is mastered by the student taught by the teacher.

Torrance (1995) divides assessment into two kinds, namely traditional assessment and authentic or new approach assessment. The author defines traditional assessment as that which concentrates on the use of paper and pencil test only, its purpose being to compare students with the norm or average of other students and also grading of students. The author

defines authentic assessment as performance assessment and also an assessment that seems to be more practical, realistic and challenging. Keddie (1971) refers to assessment as the ways in which teachers and pupils scan each other's activity in the classroom and attribute meaning to them. Assessment also can be thought of as a person, student or teacher finding out about himself, which is self-assessment (Rowntree, 1987). Rowntree further states that assessment is not only or even necessarily mainly obtained through test and examination, and that finding out about students' abilities and so on may not involve testing him or measuring his performance in any formal way. The author also refers to a spectrum of assessment situations, ranging from the very informal and almost casual to the highly formal and perhaps realistic.

Le Grange and Reddy (1998) define assessment as judgement about learner performance, and divide assessment into two kinds, traditional assessment and new approach assessment, which is also known as alternative to traditional assessment. The authors argue that four main terms are used to describe assessment: summative, formative norm referenced and criterion referenced.

The authors define summative assessment as that which takes place at the end of the learning experience for a purpose outside of the learning experience. It is usually constituted by one main test or examination that is written at the end of the year. The authors further state that the aim of this assessment is to determine how much of the subject's content the learners know. If they pass the test, they can move to the next grade. If they fail, they have to remain where they are. For example, Peter is a learner in Grade 4. After learning Mathematics for the entire school year, his ability to do Mathematics is assessed in a written examination at the end of the year. Peter is told that he obtained more than the pass mark, and that he can go to Grade 5 the following year. The authors argue that the examination does not seem to provide Peter with any kind of information about his actual learning process.

According to Le Grange and Reddy (1988), summative assessment is almost always norm referenced. This means that the learners' achievement is compared with that of other learners or with pass marks to determine how well the learner is doing. The authors give the example of Mary's parent, who was told in a parents' meeting that Mary had attained 82 marks out of a possible 100 marks for a certain subject area. They further explained that her performance was 10 marks better than the class average and 42 marks above the required pass mark. That

left Mary's parents with a sense that she did well compared to other learners and the pass mark that was - but they had little understanding of Mary's competence in the subject area.

The authors state that formative assessment is sometimes seen as being the opposite of summative assessment. Formative assessment is conducted as part of the learning process which takes place, and is used to influence or inform the learning process. For example, in the Mathematics classroom the teacher moves around from one learner to another. The teacher provides individual learners with feedback on their progress in solving Mathematical problems. Sometimes the teacher does not think verbally and at other times the teacher writes comments on the learner's workbook. In the formative assessment the teacher also sets a number of tests for the learners during the year in addition to the end of year examination in order to facilitate more authentic learning.

Criterion-referenced assessment consists of certain criteria that learners are expected to achieve in a particular grade. Le Grange and Reddy (1988) give the example of Thoko, a child in Grade 6 Mathematics class. One of the criteria for passing Mathematics is that she must know the 2, 3, 4, 5, 6, 7, 8 and 9 times tables. Thoko and her parents know about this. At the parents' meeting, the parents are told that Thoko knows the 2, 3, 4 and 5 times tables, and that their child does not yet meet the criteria. Assessing learners in this way seems to provide more information about a learner's competence in a particular area.

Torrance (1995) says that assessment can also be authentic. The author states that 'authentic' as a term seems to be that the assessment task designed for students should be more practical, realistic and challenging than the 'traditional' paper and pencil test. The term 'performance assessment' is also quite widely used with such new approaches. The DoE defines continuous assessment as that, which provides growth and development of learners, provides constant feedback and gathers evidence of learning achievement with regard to learning outcomes and assessment standards. Continuous assessment encompasses formative assessment and other kinds of assessment such as summative assessment, baseline assessment and diagnostic assessment. According to Le Grange and Reddy (1998), continuous assessment is more formative than summative. The authors further state that formative assessment involves continuous monitoring of the learner's progress towards achieving specific outcomes, which implies that formative assessment is similar to continuous assessment.

The DoE (2002a) also refers to authentic assessment as performance-based assessment which includes presentations, research papers, investigations, projects demonstrations, exhibitions, singing, athletics, speeches and musical representation.

According to Lambert and Lines (2000), assessment is the process of gathering, interpreting, recording and using information about a pupil's response to educational tasks. The DoE (2005b) talks about school-based assessment in the National Protocol on Assessment. School-based assessment is referred to as any activity, instrument or programme where the design, development, administration, marking, recording and reporting has been done, initiated, directed, planned, organised, controlled and managed by schools.

Weimer (2002) defines assessment as the process of gathering and discussing information from multiple and diverse sources in order to develop a deep understanding of what students know, understand, and can do with their knowledge as a result of their educational experiences; the process culminates when assessment results are used to improve subsequent learning. The author further states that the ability to evaluate one's own work accurately and constructively does not develop automatically. The more intellectually immature students are, the greater the chance that their personal investment will bias what they see when they look at their own work.

Duncan and Dunn (1988) define assessment as the process of gathering of information by teachers about their pupils, by teachers about their teaching, and by pupils about their progress.

The definition of assessment by the DoE (2005b) is clear and also covers definitions by different authors. The definition of Le Grange and Reddy is similar to that of the DoE. The DoE states that assessment should involve teachers, parents and other stakeholders. The involvement of parents in the assessment of children is very important, because parents should know what their children are doing at school, and should also help them at home.

The DoE (2005a) states that assessment in the classroom should be both formal and informal. This classroom assessment, according to the DoE, should provide an indication of learners' achievement in the most effective and efficient manner, by ensuring that adequate evidence

of achievement is collected using various forms of assessment. This definition is more applicable to my study, since it is investigating assessment practices in the classroom.

This study investigates if the teachers are practicing what is stated in the policy, which includes, among others, using various forms of assessment when assessing, and not using paper and pencil assessment such as tests and examinations only. The DoE (2005a) also states that informal assessment is the daily monitoring of learners' progress through observations, discussions, learner-teacher conferences and informal interaction. The DoE goes on to state that informal assessment may be as simple as stopping during the lesson to observe learners, or to discuss with the learners how learning is progressing. It should be used to provide feedback to learners. Observations, discussions and conferences are used as assessment techniques in this continuous assessment, which is regarded as the chief method of assessment.

2.3 The principles of good assessment

In the previous section the study discussed various definitions of assessment from different authors. In this section the study concentrate on the principles of good assessment. According to Allen (1990) in the *Concise Oxford Dictionary of English*, the terms 'principle' means a fundamental truth or law as the basis of reasoning or action. I will give an outline of the principles of good assessment as provided by different authors.

2.3.1 Assessment should be valid

According to Race, Brown and Smith (2005), assessment should assess what it is that you really want to assess; for example, when attempting to assess problem-solving skills, the assessment should be dependent not on the quality and style of the production of a written report on problem solving, but on the quality of the solutions devised. Kubiszyn and Borich (1996) state that assessment is valid if it measures what it says it measures. For instance, if it is supposed to be a Third Grade's arithmetic ability, it should measure Third Grade arithmetic skills, not Fifth Grade arithmetic skills and not Fifth Grade reading ability. The authors further state that it is clear that assessment is to be used in any kind of decision making, and if the assessment information is to have any use at all, it is essential that the assessment be valid.

Brown and Glasner (2003) also state that assessment should be valid. Allen (2004) states that validity refers to how well a procedure assesses what it is supposed to be assessing. The author further states that a valid assessment of a learning objective tells us how well students have mastered the objective, and should provide useful formative information.

Dunn, Morgan, Parry and O'Reilly (2004) state that assessment is valid when it corresponds to the purpose of the test, and assessment tasks are more likely to be valid if they directly align to the learning outcomes.

2.3.2 Assessment should be reliable

According to Dunn, Morgan, Parry and O'Reilly (2004), reliability refers to the consistency with which the same assessment task under the same conditions will produce the same set of results from repeated applications of an assessment task. The authors state that reliability is increased when the assessment consistently measures the 'real' level of attainment regardless of who administers it, which learners are tested, and who marks submissions.

Race, Brown and Smith (2005) argue that if we can get the task briefings, assessment criteria and marking schemes right, there should be good inter-assessor reliability (when more than one assessor marks the work) as well as good intra-assessor reliability (an assessor should come up with the same result when marking the same work on different occasions). The authors further state all assignments in a batch should be marked to the same standards. This is not the same as the strange notion of benchmarking, which implies that assignments should hit the same standards in any comparable course in existence.

Kubiszyn and Borich (1996) argue that there are several ways to establish reliability of a test. The three basic methods most often used are called test-retest, alternative form and mental consistency. The authors state that the test-retest method is a method of estimative reliability, and that is what its name implies. The test is given twice and the correlation between the first and second set the scores is determined. In the 'alternative form' method, if there are two equivalent forms of a test, these forms can be used to obtain an estimate of the reliability. Both forms are administered to a group of students and the correlation between the two sets of scores is determined. This estimates the problems of memory and practice involved in a test-retest estimate. Large differences in a student score on two forms of a test which

supposedly measures the same behaviour would indicate an unreliable test. The third and the last method is internal consistency: if the test in question is designed to measure a single basis concept, it is reasonable to assume that people who get the item right will be more likely to get other similar items correct.

2.3.3 Assessment should be transparent

Race, Brown and Smith (2005) state that there should be no hidden agenda, and be no nasty surprises for students; students should not be playing the game “guess what is on our assessors’ minds”. The authors further state that assessment should be in line with the intended learning outcomes as published in the students’ handbooks and syllabus documentation, and links between these outcomes and assessment criteria should be plain to see - not by external scrutinisers - but by students themselves. Brown, Race and Smith (1996) also state that assessment methods should not only be understood by the staff and students but also by employees and other people who may need to know exactly what is being measured and how this is being approached.

2.3.4 Assessment should be authentic

Race, Brown and Smith (2005) state that there are at least two dimensions to this aspect: first we need to strive to measure each student’s achievement in ways that enable us to be certain that the achievement belongs to the student and not to anyone else. Secondly, we need to assess students’ achievements of the intended outcomes in a context that is as close as possible to the intentions underlying the outcomes. For example, performance skills should be assessed in authentic performances and not just where students are writing about performances in exam or tests.

2.3.5 Assessment should be fair

Suskie (2004) argues that a fair assessment is where students are given equitable opportunities to demonstrate what they know. This does not mean that all students should be treated the same. The author further states that equitable assessment means that students are assessed using appropriate methods and procedures, which may vary from one student to the next, depending on the student’s prior knowledge, cultural experience and learning style. For example, John is not a strong writer but great at visualizing concepts. He will better

demonstrate his understanding of a complex concept if he can draw a diagram rather than write an explanation. Race, Brown and Smith (2005) also state that students should have an equivalence of opportunities to succeed, even if their experiences are not identical. This is particularly important in assessing work based on individual learning contexts. It is also important that all assessment instruments and processes be seen to be fair by all students.

The DoE (2002a) through its assessment guidelines states that assessment should include the assessment of learners who experience barriers to learning. The DoE states that it is likely that in every classroom there will be some learner who experience barriers to learning. These barriers will not always be the same, and could be situated in the learning context. The DoE states the barriers can also arise from social contexts, for example poverty, violence or difficult home conditions. Gipps and Murphy (1994) in Torrance (1995) state that assessment is fair if it considers access to schooling, the curriculum offered, pupils' motivation and esteem, and teacher stereotype expectations.

2.3.6 Assessment should motivate students to learn

Race, Brown and Smith (2005) state that assessment should help students to structure their learning continuously during studies, not just in the few critical weeks before particular assessment sessions. Assessment should allow students to self-assess and monitor their progress throughout a course, and help them to make informed choices about what to learn, how to learn it, and how best to evidence the achievement of their learning. The DoE (2005a) states that assessment should encourage learners to go beyond simple recall of data and facts, and should close the gap between the classroom and the real world. It should include opportunities for learning to perform tasks and solve problems and make provision for adaptive methods. Rowntree (1987) states that students can be given assessments which motivate them to learn, like homework, assignments, weekly quizzes, classroom questioning, project reports and examinations.

2.3.7 Assessment should promote deep learning

According to Race, Brown and Smith (2005), assessment should be driven towards productive learning because of the ways in which the learning is to be assessed. Students should not find themselves clearing their minds of the last subject in order to make room for

the next subject. The DoE, through its Curriculum 2005 (C2005) states that good assessment is that which promotes critical thinking, reasoning, reflection and action.

2.3.8 Assessment should be equitable

Allen (1990), in the *Concise Oxford Dictionary of English*, defines “equitable” as fair or just. Race, Brown and Smith (2005) state that assessment overall may be designed to discriminate between students on the basis of the extent to which they have achieved the intended learning outcomes. The author goes on to say that assessment practices should not discriminate between students, and should set out not to disadvantage any individual or group. Students may prefer and do better at different kinds of assessment. Some students love examinations and do well in them, while others are better at giving presentations. So a ‘balanced diet’ of different means of assessment within a course will set out to ensure that no particular group is favoured over any other. The DoE (2005a) also states that assessment should include a variety of techniques or methods.

2.3.9 Assessment should be formative - even when primarily intended to be summative

Le Grange and Reddy (1998) state that formative assessment is conducted as the learning process takes place, and is used to influence or inform the learning process. They again refer to summative assessment as taking place at the end of the learning experience. It is usually constructed by the main test or examination that is written at the end of the school year. Race, Brown and Smith (2005) state that assessment is a time-consuming process for all concerned, so is a wasted opportunity if not used as a means of letting students know how they are doing and how they can improve. They further state that assessment that is mainly summative in its function (for example, when a number or grade is given) gives students very little information other than frequently confirming students’ own prejudices about themselves.

2.4 Traditional assessment

The way in which people understand the process of teaching and learning will influence the kind of assessment practices that are used (Le Grange & Reddy, 1998).

The traditional curriculum is based on a certain form of assessment to match the understanding of the learning and teaching process.

According to Le Grange and Reddy (1998), the traditional understanding of the learning and teaching process is that there is a certain body of knowledge in each subject area that the learner must memorise. This body of knowledge or context of a subject is divided up according to what is to be learnt and how much is to be learnt in a particular grade. Learners are required to memorise each portion of knowledge that has been set for their particular grade. So it means that it is learners' memories and capacity to memorise that are mostly developed in this kind of system, and this skill of recalling memorised facts that is assessed.

It would seem that there are two systems of curriculum - the old or traditional curriculum with its assessment practices, and the new curriculum with its assessment practices. The assessment in the traditional curriculum is referred to as traditional assessment.

Traditional assessment practices are mostly summative and norm referenced, rather than formative and criterion referenced. Judgements are made about what learners know at the end of the school year in order to decide whether they can be promoted to the next grade. In this kind of assessment, the end product is assessed where the end product is almost always constituted by the recall of information. This form of assessment is not concerned with the learners' level of competence that they can develop during their learning process.

According to Broadfoot (1996), traditional assessment is assessment that is based on public examination and formal testing. Traditional assessment puts an emphasis on comparison between students rather than description of specific and changing levels of attainment.

Before I go further with reviewing traditional assessment, it is important to look at the two terms mostly used in this assessment: summative assessment and norm-referenced assessment although I have already defined them in the previous section, general review of assessment. I am discussing them in this section because they are generally used by traditionalist. Summative assessment takes place at the end of the learning experience for a purpose outside the learning experience. Summative assessment is usually done mainly in the form of a test and examination written at the end of the year (Le Grange & Reddy, 1998). The purpose is to know how much of the subject content the learner knows; if the learner

passes the test, then he can go to the next grade (and if not, he remains in the current grade). Torrance and Pryor (1987) refer to summative assessment as that which is generally considered to be undertaken at the end of a course or programme of study in order to measure and communicate pupils' performance for the purpose of accountability.

Lubisi (1999) also refers to summative assessment as traditional assessment that emphasises assessment at the end of the teaching and learning. Sieborger and McIntosh (1998) state that summative assessment enables you to tell how much a learner has achieved at a certain stage.

The DoE in the Revised NCS (2002b) defines summative assessment as assessment that gives an overall picture of learners' progress at a given time, for example at the end of the term or year or upon transfer to another school.

Knight and Yorke (2003) define summative assessment as high- stake assessment, by which we mean that the summary has important purpose. The authors further state that it counts typically towards the grade, class or mark that is shown on a certificate.

Hale and McIntosh (1976) refer to summative assessment as terminal assessment which assesses learners at the end of a course. They also state that most features of traditional assessment are quick, economical and often multiple-choice tests that can be shown to have acceptable psychometric properties that are easy to mark - rather than assessment procedures that provide a useful picture of what students can do.

Rowntree (1987) refers to summative assessment as assessment which is intended to establish the effectiveness of the teaching once it is fully developed and in regular use. The author further states that it is clearly represented by terminal examinations at the end of the students' course, or indeed by any attempt to reach an overall description or judgement of the student.

Gardner (2006) refers to summative assessment as assessment that provides information to those with an interest in learner' achievements, mainly learner, parents, educators, management and employers.

According to Le Grange and Reddy (1998) summative assessment is closely linked to norm referencing. Norm referencing is assessment where a learner's achievement is compared with that of other learners or with a pass mark to determine how well the learner is doing. Norm-referenced assessment judgements are made about what learners know at the end of the school year in order to decide whether they can be promoted to the next grade.

MacDaniel (1994) refers to norm referencing as by far the most common approach. The author states that in norm referencing test performances are interpreted by comparing a single student's score with the scores earned by a group. According to Macintosh (1976), norm-referenced testing is primarily concerned with spreading out those taking the test as widely as possible in order that distinction (expressed, for example, in grades) can be made between candidates.

In almost all definitions by different authors on norm-referenced assessment and summative assessment, two forms come up: tests and exams. This means, as authors suggest, that traditional assessment uses mostly tests or multiple-choice tests and exams, which are given at the end of the lesson or learning. Beaty and Barling (1982) look at what they call important factors that may affect the outcomes of learners' results when they write exams. The authors argue that students may be affected by exam stress when they write examinations, which may affect their performance. The affected learners may also underachieve or not perform in the way expected by the teachers. Beaty and Barling (1982) say that the stress is divided into two parts. The first is "paralysing stress", defined as that feeling which interferes with and reduces a student's examination results, and the second is motivational stress, which improves or helps a student's performance in examination or assessment.

I have indicated in this review that traditional assessment is based mainly on testing as a form of assessment. This form of testing is discouraged by other authors, while some, for example Summer (1987), support it, arguing that one justification frequently given by teachers in support of testing is that tests are objective and so free of biases that can affect other forms of assessment. Summer further states that an important point which tends to be assumed rather than thought out is that testing, like any other form of assessment should be done to enable educational policies to be carried out.

Murphy and Torrance (1988) also discourage testing as the only way to carry out assessment. Another author who criticises testing is Holts (1969) in Murphy and Torrance (1988), who states that in fact testing has caused harm to and fear in learners. Le Grange and Reddy (1998) also argue that traditional examination and class tests are chiefly concerned with assessing lower-order abilities in the cognitive domain, and assess very little in the psychomotor and affective domains. The cognitive domain deals with recall or cognition of knowledge (lower-order ability) and the development of thinking and problem-solving skills. The psychomotor domain is concerned with manipulative or motor skills and hand-eye coordination. The affective domain includes learning performances directed towards a change in feelings, interests, attitudes and values.

Kubiszyn and Borich (1996) say that while there are those who support testing and those who do not, there are also those who see tests as necessary to the educational process but question the status and power often afforded to tests and test scores. The authors support the use of tests - if they are well designed and properly used. However, Kubiszyn and Borich (1996) say tools can be used and abused - both well and poorly designed tools in the hands of ill-trained or inexperienced users can be dangerous.

By tools, Kubiszyn and Borich are referring to techniques or forms of assessment. They argue that although tests are seen as the traditional way of testing, some people - specifically teachers - still prefer them and still see it as necessary to administer them. Kubiszyn and Borich (1996) are not necessarily opposing testing, but they are not happy with the importance accorded to tests and results by those who prefer to use them. They argue that although tests might be useful, they might also be abused by the traditionalists when they put strong emphasis on them, neglecting other forms of assessment.

Possibly any form of assessment which is often used and preferred over others will lead to the assertion that it is being abused, and according to the policy more forms of assessment need to be administered by teachers when assessing learners.

2.5 Alternative or authentic assessment

The way in which people understand the process of teaching and learning will influence the kind of assessment practices that they use (Le Grange & Reddy, 1998). The alternative

curriculum is based on a certain understanding of what the educational process is to achieve, so it also has a certain form of assessment to match the understanding of the learning and teaching process.

According to Le Grange and Reddy (1998), the alternative or new approach to assessment is concerned with also assessing the psychomotor and affective domains not only the cognitive domains which deal mainly with recall or recognition of knowledge. The psychomotor domain is concerned with manipulative or motor skills and hand-eye coordination. The authors further state that the affective domain includes learning performances directed towards a change of feelings, interest, attitude and values. They add that it is important for the learner to achieve a balance between these three domains.

Alternative assessment is also referred to as authentic assessment. Torrance (1995) says authentic assessment should include assessment tasks designed to be more practical, realistic and challenging than the traditional paper and pencil test. Torrance goes on to state that authentic assessment is also referred to as performance assessment.

Pole (1993) defines authentic assessment as including more practical work, oral work and problem solving. Lubisi (1999) also defines authentic assessment as based on performances that can include portfolios, drama, projects and practical tests.

Formative and criterion-referenced assessments are mostly used in the alternative way of assessing learners (Le Grange & Reddy, 1998). Formative assessment is seen as opposite to summative assessment. It is conducted as the learning takes place and is used to help the learner and also inform the teacher about the learner's progress. Formative assessment is also aimed at providing feedback which helps to inform further teaching and learning. This is not like summative assessment, which is concerned about the end product at the end of term or end of the year. Rowntree (1987) refers to formative assessment as intended to develop and improve a piece of teaching until it is as effective as it is possibly can be.

Torrance and Pryor (1998) divide formative assessment into two approaches: convergent formative assessment and divergent formative assessment. Convergent assessment puts more emphasis on the importance of finding out whether the child knows, understands or can do a predetermined thing, characterised by adherence to precise planning and the use of methods

of recording such as a tick list and can-do statements, and an analysis of interaction between the child and curriculum. They say this form of assessment is accomplished by closed or pseudo-questioning and tasks. The implication is that convergent assessment is behaviourist, the intention being to teach or assess the next predetermined thing in a linear or at least pre-planned progression.

Divergent assessment, according to Torrance and Pryor (1998), emphasises the learners' understanding rather than the agenda of the assessor. The important thing in this form of assessment is to discover what the child knows, understands or can do. Divergent assessment is characterised by more flexible planning, open forms of recording and analysis of the interaction of the child and the curriculum from the point of view of the child. Divergent assessment is used more appropriately with open tasks and involves either open questioning, sometimes aimed at prompting pupils to reflect on their own thinking, or a divergence from discourse. Divergent assessment results in more descriptive, qualitative feedback. The authors further argue that the theoretical implications of divergent assessment are that a social constructivist view of education is adopted with an intention to teach the zone of proximal development; as a result, assessment is seen as accomplished jointly by the teacher and the pupil.

Criterion-referenced assessment is also mostly used in the alternative assessment. La Grange and Reddy (1998) refer to criterion-referenced assessment as consisting of certain criteria that learners are expected to achieve at a particular time. Assessment criteria are made clear before assessment takes place. Learners are assessed against the criteria, not against other learners or against the norm of the class. In this kind of assessment learners know what is expected of them. Gronlund (1973) argues that criterion-referenced assessment is well suited to formative assessment, that is, to assess during teaching where the primary aim is to aid learners.

McDaniel (1994) states that criterion-referenced assessment provides measures that can be in terms of the ability to perform clearly defined tasks. For example, a teacher using an interior referenced test for reading skills would be able to examine a score and then state that "John has mastered initial word attach skills". This is not like saying "John has done better than 90% of other first grade children on his reading test", which is norm referencing. The author

further states that above all, criterion-referenced assessment should lead to a clear description of what a student can do.

A criterion-referenced assessment depends on detailed specification of the behavioural domain of interest, and will contain many items dealing with highly specified skills and attainment (McDaniel, 1994). McDaniel (1994) further states that the defining characteristics of a criterion-referenced assessment are that it is constructed to reflect a detailed and finite analysis of a behavioural domain judged to be important.

The DoE (2002b) refers to formative assessment as assessing learner progress during the learning process in order to provide feedback that will strengthen learning.

Gronlund (1973) mentions criterion-referenced assessment that refers only to the method of interpreting the result, and thus could be applied to any classroom or standardised tests. The author further states that criterion-referenced tests require a clearly defined and delimited domain of a learning task. This type of testing, according to Gronlund (1973), has been most widely successfully used in programmed instruction where the focus is on mastery of a limited number of learning outcomes.

Maree and Fraser (2004) argue that criterion-referenced assessment advocates use of multiple methods of assessment. Methods include investigation, journals, projects, oral work, open-ended questions and observation. The use of multiple methods or strategies in assessment is also advocated by Beckmann et al, Thompson and Senk (1997), when they argue that Mathematics assessment should use multiple assessment strategies which include open-ended questions, journal writing, assignments and collage.

Broadfoot (1996) argues that alternative assessment is very important in defining the attitude that students take towards their work, their sense of ownership and control of their own living.

Maki (2004) states that a criterion-referenced assessment depends on context-specific collective interpretations about students' achievements based on criteria and standards of judgement developed within an institution and its programmes. The author further states that criterion-referencing results report on students' performance against the multiple dimensions

and possible performance levels of a task - an exhibit, a presentation, thesis or collaboratively designed project.

Lastly, another alternative assessment to traditional is continuous assessment. The DoE in the NCS refers to continuous assessment as a model that encourages integration of assessment into teaching and the development of learners through ongoing feedback. According to the DoE (2005a), continuous assessment does the following:

- Takes place over a period of time and is ongoing, which means that the learning is assessed regularly and the records of learners' progress are updated throughout the year.
- Supports the growth and development of learners which ensures that they become active participants in the learning and assessment, understand the criteria used for assessment, are involved in self-evaluation, reflect on their learning, and thereby experience raised self-esteem.
- Allows for integrated assessment, which may include assessing a number of different assessment methods. Learning outcomes can be demonstrated in many ways, and opportunities must be provided through which learners can demonstrate their ability.
- Uses strategies that cater for a variety of learner needs - such as language, physical, psychological, emotional and cultural. Continuous assessment, as the DoE states (2005a), allows teachers to be sensitive to learners with special educational needs and to overcome barriers to learning through flexible approaches. In any group of learners there are different rates and styles of learning - all learners do not need to be assessed at the same time and in the same way.
- Allows for summative assessment, that is, accumulation of the results of continuous assessment activities provides an overall picture of a learner's progress at a given time. Summative assessment, according to the DoE (2005a), needs to be planned from the beginning of the year.

According to Le Grange and Reddy (1998), continuous assessment enables a wider range of educational outcomes to be assessed, and also provides information about the learning process and learner development, by doing the following:

- Providing feedback on the learning outcomes that the learners have achieved, and those that have not been achieved;
- Assisting in identifying the strengths and weaknesses of the learner;
- Encouraging communication between teachers and learners; and
- Working hand in hand with the evaluation and therefore providing information on important curriculum issues like teaching methods and the relevance of learning outcomes and resources.

Le Grange and Reddy (1998) believe continuous assessment has a clear advantage over traditional forms of assessment. Continuous assessment advocates a system of learning and improvement which focuses on the development of the whole learner.

The table below outlines the main differences between traditional assessment and continuous assessment.

Table 2.1: Main differences between traditional assessment and continuous assessment.

Traditional assessment	Continuous assessment
Is mainly made up of written examinations that take place in formal settings	Is made up of variety of assessment methods that can be formal or informal
Is used to decide whether or not the learner is promoted to the next grade	Is used to inform the learning process through which learning outcomes are required
Takes place after the learning process at dates and times previously decided on (summative)	Takes place during the learning process when it is considered necessary (formative)
Is mostly norm referenced rather than criterion referenced	Makes more use of criterion referencing than norm referencing
Provides isolated marks or percentages to show how learners have changed	Provides information in context as feedback on how learners are changing

2.6 Assessment in South Africa: Assessment policy

The DoE has an assessment policy which stipulates what has to be done when assessing learners in the classroom. The policy that I discuss is that on assessing Mathematics specifically in the Intermediate Phase (Grades 4-6). My review on this topic includes looking at the old curriculum, C2005. The main discussion will be about assessment in the NCS, which came after C2005. The NCS seems to be alternative to the traditional practices, but it should be remembered that it encompasses both summative and formative assessment. Some assessment practices present in C2005 are still there in the new curriculum - NCS.

My study is based on investigating assessment practices in Grade four Mathematics classrooms. It looks at the assessment policy and finds out if the teachers are doing in practice what is stated in the policy.

2.6.1 Assessment in C2005

C2005 was the curriculum which used OBE as the methodology of implementation. According to the DoE (1997), assessment was going to be based on outcomes. The learners' progress was measured against outcomes rather than against their performance.

The DoE (1997) stated that the teacher will assess learners on a continuous basis by employing strategies such as peer and self assessment, initiating projects and assisting learners in putting together portfolios. The assessment will be ongoing (continuous), which means a learner's progress will be monitored continuously. The C2005 document (DoE, 1997) also states that only at the end of Grades 9 and 12 will there be comprehensive external assessment, also done in Grades 3 and 6.

Assessment in an outcomes-based system enables both learners and teachers to determine whether learners are achieving the agreed outcome or not. A variety of assessment methods are available to ensure that the method chosen is suited to the performance being assessed.

According to Le Grange and Reddy (1998), an outcomes-based curriculum views the learning and teaching process differently from the traditional curriculum. Knowledge is not seen as being transferred intact from the teacher to the learner. Instead, knowledge is seen as being constructed in the mind of the learner. The authors state that each learner brings his or

her own prior knowledge and experience to any learning situation. Learners make sense of the new knowledge in the context of their own knowledge, and then develop their original concept as learning takes place. Le Grange and Reddy (1998) state that the process of learning is therefore just as important as the end product.

In the C2005 document the DoE (1997) emphasises that the word “outcome” as key in the education and training system. The DoE talks about three different kinds of outcomes: critical cross-field outcomes or essential outcomes; learning area outcomes; and specific outcomes. The DoE also refers to critical cross-field outcomes as those designed by the South African Qualifications Authority (SAQA) and applied to all learning areas. Le Grange and Reddy (1998) say that critical outcomes are not restricted to particular subjects or learning areas but are cross-curricular and generic. They are common to all areas of learning and describe the skills, attitudes, values and knowledge that all learners should develop.

The eight critical cross-field outcomes or essential outcomes adopted by SAQA are as follows. Learners should be able to successfully demonstrate their ability to:

- Communicate efficiently using visual, mathematical and or language skills in the modes of oral and or written presentation.
- Identify and solve problems by using creative and critical thinking.
- Organise and manage themselves and their activities responsibly and effectively.
- Work effectively with others in a team, group, organisation and community.
- Collect, analyse, organise and critically evaluate information.
- Use Science and Technology effectively and critically, showing responsibility towards the environment and the health of others.
- Understand that the world is set of related systems; this means that the problem-solving context does not exist in isolation.
- Show awareness of the importance of effective learning strategies, responsible citizenship and cultural sensitivity

The next kind of outcomes is the learning area outcomes. The DoE (1997) states that every learning area will have its own broad outcomes which are called the learning area outcomes - general skills, abilities and values a learner will be expected to demonstrate in that learning area.

The third kind of outcomes is specific outcomes. The DoE (1997) refers to specific outcomes as those that refer to the specific knowledge, attitudes and understanding which should be displayed in a particular context. Le Grange and Reddy (1998) say specific outcomes describe the knowledge, skills, attitudes and values applicable within a specific learning area. These serve as the basis for assessing the learner's progress in the specific learning area. Some examples of specific outcomes in Mathematical Literacy, Mathematics and Mathematical Sciences include the ability to:

- Demonstrate understanding about ways of working with numbers;
- Manipulate number patterns in different ways; and
- Critically analyse how mathematical relationships are used in social, political and economic relations.

There are also a few other assessment terms used in this curriculum, for example, performance indicators, assessment criteria; range statements; and skills, knowledge, attitudes and values.

2.6.2 Assessment in Revised NCS

The DoE (2002b) defines assessment in the Revised NCS as a continuous, planned process of gathering information about the performance of learners measured against the assessment standards of the learning outcomes. It requires clearly defined criteria and a variety of appropriate strategies to enable teachers to give constructive feedback to learners and to report to parents and other interested people.

Each learning area has its own learning outcomes and assessment standards. For example, in the learning area of Mathematics there are five learning outcomes:

- Numbers, operations and relationships
- Patterns, functions and algebra
- Space and shape (Geometry)
- Measurement
- Data handling

2.6.3 Assessment in the NCS

The DoE (2002b) states how assessment should be, in order for the learners to reach their full potential; it should be transparent and clearly focused, integrated with teaching and learning. It should be based on predetermined criteria or standards, carried out in terms of methods and contexts; and valid, reliable, fair, learner-paced and flexible enough to allow for expanded opportunities.

The DoE (2005a) also outlines the purposes of assessment, the main purposes being to enhance individual growth and development, monitor the progress of learners and facilitate their learning. Some examples of types of assessment are:

- **Baseline assessment of prior learning.** Usually takes place at the beginning of a grade or phase to establish what learners already know. It assists to plan learning programmes and learning activities.
- **Diagnostic assessment.** Used to find out about the nature and cause of barriers to learning experienced by specific learners. It is followed by guidance, appropriate support and intervention strategies.
- **Formative assessment.** This monitors and supports the process of learning and teaching, and is used to inform learners and teachers about learners' progress so as to improve learning. Constructive feedback is given to enable learners to grow.
- **Summative assessment.** Gives an overall picture of learners' progress at a given time, for example, at the end of a term or a year or on transfer to another school.
- **Systematic assessment.** A way of monitoring the performance of the education system. One component is the assessment of learner performance in relation to national indicators.

2.6.3.1 Continuous assessment

The DoE states in the NCS that continuous assessment is the chief method of assessing learners. The old curriculum, known as C2005, also used continuous assessment.

In the new NCS assessment is both summative and formative, which means that the new assessment policy encourages teachers to assess in both ways. It must be remembered that summative assessment is mostly practiced by those teachers who are said to be traditional, while formative assessment is practiced by teachers who are more modernised and believe in alternative assessment as opposed to traditional assessment.

In my introduction to this topic I earlier said that the DoE views continuous assessment as an alternative to traditional assessment. I think it is also important to look at how the DoE defines continuous assessment. Continuous assessment in the NCS (2005a) is referred to as assessment that encourages integration of assessment into the teaching and development of learners through ongoing feedback.

The DoE (2005a) states that continuous assessment does the following:

- Provides feedback on the learning outcomes that the learners have achieved and those that have not been achieved;
- Assists with identifying the strengths and weaknesses of the learner; and
- Works hand in hand with evaluation and therefore provides important information about curriculum issues like teaching methods and the relevance of learning and resources. It is further stated that in our OBE and training system, continuous assessment is criterion referenced. The outcomes have assessment criteria, range statements and performance indicators and each learner is assessed individually against these, rather than against norms and standards. Continuous assessment is also more formative than summative. Formative assessment involves the continuous monitoring of learners' progress towards achieving specific outcomes (Le Grange & Reddy, 1998).

The DoE states that continuous assessment covers all OBE assessment principles and ensures that assessment takes place over a period of time and is ongoing, supports the growth and development of learners. Assessment should allow for integrated assessment, uses strategies that cater for a variety of learner needs; and allows for summative assessment.

In the NCS the DoE (2005a) defines assessment as a process of collecting, synthesising and interpreting information to assist teachers, parents and other stakeholders in making decisions

about the progress of learners. The DoE (2005a) further states that assessment involves gathering and organising information in order to review what learners have achieved. Assessment informs decision-making with regard to teaching and helps teachers to establish whether learners are making progress towards the required level of performance as outlined in the assessment standards of the NCS. OBE forms the foundation of the curriculum in South Africa and the assessment framework of the NCS (DoE, 2005b).

According to the DoE (2005a), assessment in the NCS should achieve at least one of the following purposes:

- Develop learners’ knowledge, skills and values;
- Identify the needs of learners;
- Enable teachers to reflect on their practices;
- Identify learners’ strengths and weaknesses;
- Provide additional support to learners;
- Revisit or revise certain sections where learners seem to have difficulties;
- Motivate and encourage learners;
- Provide information or data to a variety of stakeholders; and
- Demonstrate the effectiveness of the curriculum or teaching strategy.

Table 2.2: Continuous assessment framework as illustrated in the NCS

Grade	Continuous assessment component	Common task for assessment, externally set
4-8	100%	Not applicable
9	75%	25%

2.6.3.2 Informal and formal assessment

Assessment in the NCS is both formal and informal. Only the formal tasks or activities are recorded for the purposes of progression and promotion. The DoE (2005a) states that informal assessment is very important. It should be used to implement and support formal assessment. It is used for formative purposes to assist teachers with their daily planning and to make professional judgements on learner performance.

Table 2.3: Number of formal recorded assessment tasks for

Mathematics, Grades 4-6

Learning Area	Term 1	Term 2	Term 3	Term 4	Total
Mathematics	2	2	2	2	8

The DoE (2005a) recommends the following forms of assessment:

- Assignments
- Class work and homework
- Projects
- Mathematical investigation
- Tests and examinations
- Observations
- Presentations
- Interviews
- Structured questions
- Questionnaires
- Brainstorming
- Simulations.

Table 2.4: Codes and percentages used for recording and reporting in Grades R-6

Rating code	Percentages	Description of competence
4	70-100	Outstanding/Excellent achievement
3	50-69	Satisfactory achievement
2	35-49	Partial achievement
1	1-34	Not achieved

2.7 Conceptual framework

Many concepts have been discussed in the literature review, two of which I identified as vital here: traditional and alternative or authentic assessment. The two concepts are most relevant to my study because as I have alluded in my rationale for the study, this study investigates the assessment practices in Grade four Mathematics classrooms. I have also indicated from my experience as Mathematics teacher that it would seem that some teachers are still practicing the traditional way of assessing learners and others are following the new approach. I think it is important to look at and discuss the two concepts and to find out which of the two is advocated by the DoE policy.

The DoE (2002b) in its policy on assessment advocates the use of alternative assessment or authentic assessment as opposed to traditional assessment. Traditional assessment concentrates on paper and pencil tests and exams (Torrance & Pryor, 1998). Traditionalists do not believe in other forms of assessment such as assignments, projects and investigations. They think testing and examinations are more appropriate and bring more accountability.

The alternative assessment practitioner believes in giving learners a variety of assessments. In the policy the DoE (2005a) indicates that it wants teachers to assess learners by giving them not only tests and examinations, but other forms of assessment such as projects, class work, homework, interviews and questionnaires, to name a few. This way of assessing learners is more practical or authentic. As mentioned earlier, Pole (1993) refers to more practical work as authentic.

2.8 Conclusion

My study will be based on these two concepts, and seeks to ascertain whether teachers are practicing traditional or authentic assessment. It must be remembered that although testing and examinations are seen by many authors as the traditional way of assessing learners, they are also included in the DoE policy as among the forms of assessing.

CHAPTER 3. RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

My study is ‘An investigation of assessment practices in Grade 4 Mathematics’. I am a Grade 5 Mathematics teacher. The rationale for my study was the uncertainty I observed as a Mathematics teacher when I assessed my Grade 5 learners; my learners seemed not to like any forms of assessment other than tests. I therefore wanted to investigate what happened before they reached me, i.e. to investigate assessment practices in Grade 4.

The study uses three teachers, including a teacher from my school. The study tries to find out if teachers know about assessment practices, as required by the DoE policy, what assessment practices are carried out by Grade 4 Mathematics teachers, and if there is a gap between policy and practices.

In this chapter I give details on how I carried out the research and collected the data.

3.2 Consent for the study

My sources of data were the three teachers from different schools and contexts. I wrote one letter to the DoE asking for the permission to collect data. I did this by addressing the letter to the Superintendent of Education. I also wrote three letters to the principals of my data sources. In these letters I told them about the topic and the reason for doing the research. I told them that I was going to collect data through interviews and assured them that the data collected were going to be confidential and the information was going to be completely destroyed after the study. Lastly, I wrote three letters directly to three sources of data (teachers) and asked for the permission to interview them. I told them that the interview was going to be confidential. I also said to them that I will destroy everything after the study including cassettes from the tape recorder. The participants co-operated and I visited one participant per week spending one hour with each. No problems were experienced, and I valuable information from them.

3.3 Research design and methodology

My research is located in the interpretivist paradigm. According to Kuhn (1970), in Usher (1996), a paradigm is a constellation of beliefs, values and techniques shared by members of a given community, and an exemplar or way of working that functions as a model for what and how to do research. Glesne (1999) states that the interpretivist paradigm portrays a world in which reality is socially constructed, complex and ever- changing.

My study also used qualitative method. Glesne (1999) argues that qualitative researchers interact and talk with participants and their perceptions. I interacted with my participants by questioning them as I was interviewing them. The participants were able to provide their views about how they perceived assessment.

3.3.1 Description of the sample

According to Leedy and Ormrod (2005), the process of selecting sources of data is called sampling. My sampling was purposeful. According to Leedy and Ormrod (2005), purposeful sampling yields the most information about the topic under investigation. I used it because I felt that it was going to give me more information about my topic. I asked all of the teachers the same five questions each using my interview schedule (instrument).

This study used three Grade 4 Mathematics teachers from different schools as sources of data. The first teacher was from the semi-rural school where I teach Mathematics to Grade 5. I used a teacher from my school since, as stated in my rationale, my learners seemed not to like forms of assessment other than tests. The second teacher comes from a deeply rural school. I chose her because when I was conducting OBE workshops I could see that most of the teachers from rural schools did not seem to be clear about assessment. The third teacher was from a school in a semi-urban area close to town. I chose her because I thought I may get data which would differ from that from the teacher in the rural area, since the semi-urban school has access to information because of the resources they have.

I visited all of these teachers in their schools and interviewed them after school hours; each interview took about an hour. Interviews were done at the schools because the teachers are

used to their own environment and the atmosphere was relaxed and conducive for the interviews.

3.3.2 Method of collecting data

3.3.2.1 Interviews

The method of collecting information was one to one semi-structured interviews. According to Delport, de Vos, Fouche and Strydom (2002), semi-structured interviews give participants an opportunity to share their beliefs and perceptions about the topic. I used an interview schedule as an instrument for collecting the data. There were six questions in the interview schedule, which I asked in order to answer the three critical questions of the study. I assured my participants of the confidentiality and ethics of the research process (Jansen & Vithal, 1997). I interviewed one participant per week. Each interview took about one hour. Interviews were done after school hours. Participants and my reasons for choosing them have been dealt with under 3.3.1.

3.4 Validity of data

3.4.2 Validity

The historical definition of validity is that if a particular instrument measures what it purports to measure, then it is valid (Cohen, Manion & Morrison, 2001). According to Fox (1996), validity means the extent to which the procedure actually accomplishes what it seeks to accomplish or measure what it seeks to measure. In simpler terms, we say an instrument is valid when it does what it is supposed to do.

Kubiszyn and Borich (1996) argue that the assessment is valid if it measures what is supposed to measure. They further state that for the assessment to be good, it ought to have adequate validity, reliability and accuracy. Kubiszyn and Borich (1996) also state that a test is valid if it measures what it says it measures, for instance if it is supposed to be a test of Third Grade arithmetic ability it should measure Third Grade arithmetic skills, not Fifth Grade arithmetic skills. Tuckman (1975) states that test validity refers to whether a test measures what we intend it to measure.

Kubiszyn and Borich (1996) say there are three types of validity: content validity, criterion-related validity and construct validity.

3.4.2.1 Content validity

According to Kubiszyn and Borich (1996), content validity is the simplest way of deciding whether a test is sufficiently valid to be useful. The content validity of a test, according to the authors, is established by examination. They argue that test questions are inspected to see whether they correspond to what the user feels should be covered by the test. This, according to Kubiszyn and Borich (1996), is easiest when the test is in an area such as achievement, where it is fairly easy to specify what should be included in the context of the test. This type of validity, established by examination, would seem to be more favoured by traditionalists as they believe in examination as the form of assessment.

In the literature review I indicated that it is said that teachers would assess learners in the way that they understand teaching and learning (Le Grange & Reddy, 1998). Teachers who still think that the traditional way of teaching is good will also assess learners in the traditional way. These teachers believe in summative assessment, which is assessment at the end of the lesson or chapter. Summative assessments are usually tests and examinations. This kind of validity applies in my study, because it is investigating the way teachers do their assessment in their classrooms. If learners pass the tests and examinations, the conclusion will be that they understand the content they were taught. This implies that teachers who use tests and examinations to establish validity are teachers who still believe in the traditional way of teaching and assessing learners. The DoE policy, however, advocates the use of continuous assessment, which is more formative than summative.

3.4.2.2 Construct validity

Kubiszyn and Borich (1996) argue that a test has construct validity since its relationship to other information corresponds well with some theory. The authors refer to a theory as simply a logical explanation or rationale that can account for the interrelationship among a set of variables. They further state that many different kinds of theories can be used to determine the construct validity of a test; for instance, if it supposed to be a test of arithmetic computation skills, you would expect scores to improve after intensive coaching in

arithmetic. If, as the authors argue, it is a test of mechanical aptitude, you might expect that mechanics would, on average, do better on it than poets.

This kind of validity is also applicable to my study because, as I said when discussing content validity, teachers assess in the way they understand teaching and learning. These teachers have their own theories or reasons why they prefer or use a particular form of testing. Traditional teachers make learners memorise times tables as a reason for learners to be able to understand multiplication and division when doing Mathematics at school, but according to the DoE, learners are not necessarily required to memorise tables, but should understand them and calculate quickly. On the other hand, teachers who are not traditionalists also have their own reasons and theories when applying forms of assessment other than tests when establishing validity. These teachers prefer understanding of tables in a practical way as opposed to merely memorising them.

To establish validity in my own research I visited my three participants at their schools, because I thought they would feel free to answer questions in a place and environment they were used to. I told them they could be free when answering questions because the interview was confidential and the tape recording would be destroyed and burnt. I read the questions in the interview schedule and also gave it to them to read in order to verify that what I read was in the schedule. During the interview I told my participants to relax and to be free. As I was interviewing I used eyeballing, which is looking at the participant and back to my transcript to make sure that I was writing what was said by the participant. (Eyeballing is advocated by Willis, Jost & Nilakanta, 2007.) After the interview I gave my participants the transcripts to read in order to check that I had written what they said.

Validity is also used in research practice. In research, the instrument used by the researcher is said to be valid if it does what the researcher intended. It is important for any researcher that they use an instrument that is reliable and valid when doing research. If the research instrument does not do what it is supposed to do, it may produce misleading data. It is important to use an instrument or method which is reliable or valid and produces consistent results and does what it is supposed to do, so that the data collected can be used for improvement and social justice. My research methods and instruments had construct validity because the information I got corresponded well with the theory that teachers are still not clear about assessment.

3.5 Conclusion

I have indicated in this section how I collected data from the three participants in this study, and give the reasons why I chose the participants, as well as why I chose interviews as the method of collecting data. Interviews give participants a chance to discuss their interpretation of the world they live in and their own perceptions or views (Cohen, Manion & Morrison, 2003). I also indicated that I got consent from the DoE, school principals and participants. Ethical issues involved in the interviews, such as confidentiality (Vithal and Jansen, 1997), were also discussed. In the next chapter the data analysis is outlined.

CHAPTER 4. DATA ANALYSIS

4.1 Introduction

The purpose of this study was to investigate the assessment practices in Grade 4 Mathematics classrooms. In this chapter the data collected from the three participants are analysed.

The participants were three teachers from three different contexts. The method of collecting data was one-on-one semi-structured interviews. An interview schedule with questions to be answered by the participants was used. The interviews were also recorded by tape recorder as a back-up for data collection, and the transcripts used to write down the responses from the participants. All responses pertaining to assessment practices by the three participants were written down and recorded. During the discussions with the three participants, the data I collected resulted in the following themes: teachers having been issued with or having seen the policy; teachers' understanding of the policy; teachers' assessment practices and assessment according to policy; teachers' assessment and challenges facing teachers when assessing learners. Firstly, let me give a description of the participants in this study.

4.2 Research participants

The data were collected from three teachers in three different schools within different contexts in the province of KwaZulu-Natal. The first participant was from Ukhozi Primary School (pseudonym), which is the school at which I teach and is a semi-rural school, meaning that it is not a completely rural school. Ukhozi Primary has about 600 learners. The second participant came from Imbali Primary School (pseudonym), which is about 40 km from the town of Port Shepstone. This school is situated in a deeply rural area, and there were about 350 learners. The third participant came from Impangela Primary School (pseudonym), which is situated in a semi-urban area, about 20 km from Port Shepstone, with about 400 learners. I chose these three participants from different contexts since I thought this would encourage the obtainment of interesting and valuable data.

4.3 Key research questions

It is important to be clear about the research questions which the study was trying to answer, which were the following:

- What is teachers' understanding of the assessment policy?
- What are the assessment practices of Grade 4 Mathematics teachers?
- What are the gaps between policy and practice?

4.4 The interviews

The three participants were visited in their schools. I asked for permission to interview the participants from their principals. I told my participants to feel free to answer questions, and that they were also free to refuse to answer questions if they wanted to. I told my participants about the ethical issues involved in doing the research. I informed them that the interview was confidential and that all the tapes recording would be destroyed after the interview.

The three participants were interviewed using interview schedules. The interviews were semi-structured and one on one; six questions were asked. I also asked other probing questions in order to be clear about what I was asking as well as to try and get clear data. Vithal and Jansen (1997) support this when they say that probing questions can be asked during the interview in order to get more clarity.

The six main questions that I asked the participants were the following:

- “Do you have an assessment policy?”
- “Do you understand the assessment policy?”
- “How do you implement the policy?”
- “Which assessment techniques or forms of assessment do learners enjoy most?”
- “Do you get support from the school (management) and teachers in terms of implementing assessment?”
- “What challenges do you encounter when implementing the policy?”

The data are discussed below according to themes which came up during the interviews as well as the answers to the interview schedule questions. Participant number one, from Ukhozi Primary, is referred to as First Participant (FP); the second participant, from Imbali Primary, as the Second Participant (SP); and the third participant, from Impangela Primary, is referred to as the Third Participant (TP). Demographics – age and yrs of experience?

Table 4.1 Description of the participants

Participants	Gender	Age	Exp.	School name	School context
1st Part.	Female	50yrs	30yrs	Ukhozi Prim.	Semi-rural area
2nd Part.	Female	44yrs	25yrs	Imbali Prim.	Deep rural area
3 rd Part.	Female	43yrs	25yrs	Impangele Prim.	Semi-urban area

4.5 Conclusion

This chapter has shown an analysis on what was the purpose of the study. The description of the research participants have been given although their schools have been given pseudonyms. That was done to protect their schools and also to observe ethical issues involved when doing the study. The description of the participants is also given in a figure or template showing the age, years of experience, gender and the area of their respective schools. The method of collecting data has been analyzed and the key research questions given.

CHAPTER 5. DISCUSSION AND FINDINGS

5.1 Introduction

The purpose of this study was to investigate assessment practices in Grade 4 Mathematics class. The aim of the study was to try and find out if teachers practice what is indicated in the assessment policy for the new NCS. The DoE's assessment guidelines on Mathematics (2002b) and National Protocol on Assessment (2005b) indicate quite clearly how assessment in Mathematics should be done.

5.2 Discussion

5.2.1 Impact of non-availability of information from the DoE

The first interview question that I asked my participants was: "Do you have an assessment policy?"

It was apparent that the three participants did not have the DoE policy, and in two cases neither had they ever seen it. FP said "No, I don't have the policy, I have never seen it." I could see from her face that she had no idea of the policy or how it looks. I tried to explain the policy and what the purpose of such a policy was.

SP's response was: "Yes, we do have assessment policy which we did with teachers in my school." I further explained that the assessment policy I was asking for was the one which comes from the DoE, not the one which is the internal arrangement by the school. The response was then: "There was no assessment policy which was given to us by the DoE". It was again evident that the policy of the DoE had not been given to the participant, or perhaps the participant saw it and did not realise that it was the policy.

TP responded as follows: "Yes, I do have the policy. I think I got it last year (2005), and it is called protocol on assessment." I asked the participant if she was work shopped on the use of assessment policy. After further questioning, it seemed that TP was given the assessment policy but did not know what was required by it.

I found it confusing as to why the other participants had not been given the assessment policy. Perhaps they had received it but did not realize that it was the policy, or they may have lost it.

This finding implies that it would be very difficult for the three participants to implement the new assessment policy, if they do not have the policy. The first two participants seemed willing to follow or learn from the policy; their main reason for not using it would be the unavailability of the assessment policy to them.

5.2.2 Teachers' understanding of and approach to assessment

The three participants that I interviewed all agreed that there is a need to understand the assessment policy in order to assess learners accordingly. It is believed that good education involves good assessment. Murphy and Torrance (1988) support this when they say that good education by definition encompasses good assessment.

Teachers will assess learners in the way they understand teaching and learning. Le Grange and Reddy (1998) state that the way in which the teaching and learning process is understood influences the kind of assessment practices that are used. According to the authors, traditional assessment is based on a certain understanding of what the educational process is trying to achieve, with a certain form of assessment to match that. The new curriculum, the NCS, is based on a new understanding of the learning and teaching process and therefore requires a different form of assessment.

The DoE (2002b) in the policy document *Revised National Curriculum Statement Grades R-9 Schools Policy For Mathematics*, states that continuous assessment is the main method that should be used, so teachers are expected to implement continuous assessment as stated by the policy.

5.2.3 Understanding of the assessment policy

I asked questions to see if participants knew what is expected from them when they are assessing. The policy dictates what is to be done when assessing learners. The question I posed to each participant was: "Do you understand the assessment policy?"

The response from the first participant was: “How can I know and understand assessment policy? I don’t have the policy and I have never read it.” I further probed this participant as to if she has ever heard anything about the new assessment policy, and her response was: “I only heard about it at workshops which were organized by the DoE. I think I am doing what they told me to do.” This response was interesting - although she did not have the assessment policy, she knew that she had been work shopped on how to implement the assessment policy. I teach in the same school as the first participant, and indicated that my rationale for doing this study was that my Grade 5 learners did not seem to like other forms of assessment than tests. However, according her she was doing what she was told to do at the workshops.

The response by the second participant was “No, we don’t understand the assessment policy, but we meet with other schools for help like school clusters and workshops.” I asked the participant if she attended workshops organized by the DoE and she said “We did not have enough workshops and we are still not clear about how to assess using other forms or techniques of assessment like projects.” Projects are one form of assessment in the assessment policy document of the DoE. As I interviewed, this participant was willing to get to know about assessment policy and willing to learn from what we were discussing about assessment. The problem she alluded to was not having enough workshops to be really clear about the policy. Hence the policy may be in place but may not be understood.

The third participant said “Yes, I know assessment and I assess the way we use to assess, and I also assess using the knowledge we get from the DoE.” This suggested that there was some understanding of the assessment policy, since she had also agreed that she attends workshops organised by the DoE.

Responses of the three participants to this question showed that the DoE did workshop teachers on the policy, although they (the teachers) might not have been very clear about it, as suggested by the second participant when she said that there were still forms of assessment she was not clear about using. She also correctly alluded to projects as one of the assessment techniques.

The DoE (2005b) in the policy document *The National Protocol on Assessment for Schools in the General and Further Education and Training Band Grades R-12* gives details on how teachers should assess learners in the Mathematics classroom. There are also other policy

documents on assessment, such as the DoE's (2002b) *Revised National Curriculum Statement Grades R-9 Schools Policy for Mathematics*, which I mentioned earlier.

The new approach to assessment advocated by the policy is an alternative to traditional assessment, and teachers are expected to practice this as the definitive policy provided by the DoE.

With this question I was also trying to get information on how the teachers practiced assessment. Although I did not observe what they were doing, their responses convinced me as to what was taking place in the classroom during assessment.

5.2.4 Implementation of the policy

The third question I asked was "How do you implement the policy?" I wanted to know exactly what the teachers do in class, which was also going to show if they understood the assessment policy. FP said "I assess my learners by giving them tests. I also give them investigation and projects." This question was not easy for her - she was not at ease in giving me the answer, especially after having said that the tests are given as assessment. She mentioned other two forms of assessment, investigation and projects, after I further probed whether she was giving only tests as assessment.

This implies that tests dominate her assessment, and perhaps she does a bit of other assessment. It must be remembered that this participant was from the school at which I taught, and that one of the reasons I decided to embark on this study was because I saw that her learners from Grade 4 Mathematics, when they graduated to my class which is Grade 5, did not seem to like other forms of assessment apart from tests. A probing question on this was how often did the participant assess, and the response to this was that she assessed periodically by giving monthly tests. This is not in line with the assessment policy, because according to the DoE learners should be assessed continuously: the chief method for assessing learners in NCS (2002) is continuous assessment. Continuous assessment encompasses formative assessment, which means that learners are given feedback interventions all the time.

The second participant's response on how she implements the assessment policy was "I give my learners work to do and after that I assess them." I asked this participant about what form

of assessment she usually used to assess learners, and she said “I usually give tests because it is easy to control and see who did not write.” This showed that the participant was using the form of assessment that she was comfortable with, not all forms of assessment as stated by the assessment policy. I further asked if other forms of assessment are also done in the class, and SP agreed reluctantly, which again showed that although other assessment forms or strategies are given, tests still dominate.

The third participant’s response to the question on implementing the assessment policy was “I assess learners after having given them work.” Our internal assessment policy states that we must assess learners at the end of the week or at the end of the month. The participant went on to say “These weekly and monthly tests are mostly done in the classroom in the form of controlled tests.” Once again, the response implies that (like with the other two participants) although they may know of or carry out other forms of assessment, they still believe in testing.

It is not wrong to administer tests when assessing learners. According to the DoE (2005a) *National Curriculum Statement, General Education and Training: Assessment Guidelines for Mathematics Intermediate and Senior Phases* policy document, assessment should include a variety of assessment strategies or forms, such as tests, projects, investigations, assignments, oral demonstrations, homework, examinations and portfolios, to mention a few. The policy document also states that assessment should be informal and formal. It goes on to say that assessment should be ongoing (continuous), which means that it should be done daily and all the time. I have already alluded to continuous assessment as the chief method of assessing learners in the NCS assessment guidelines for Mathematics (DoE, 2005b) document.

Most authors or writers, including Le Grange and Reddy (1995), define traditional assessment as confined to or based on pencil and paper tests and examinations. It would seem that the three participants I interviewed still believe in testing as a way of assessing learners.

According to Wood (1987), whose view is different from the traditional, assessment is regarded as providing a comprehensive account of an individual’s functioning in the widest sense, drawing on a variety of evidence, qualitative as well as quantitative, and therefore going beyond the testing of cognitive skills by pencil and paper. Continuous assessment, as I

have indicated, also seems to be a more comprehensive alternative to traditional assessing, and includes assessing skills, attitudes and values.

5.2.5 What do learners prefer?

The fourth question I asked my three participants was “Which assessment techniques or forms of assessment do learners enjoy most?” I asked this in order to know or to investigate which assessment technique was comfortable for and enjoyed by learners when they are assessed by teachers. The rationale for my research was prompted by what I experienced when assessing my Grade 5 learners in Mathematics: I saw that they are not used to being assessed in other ways and liked testing.

The response from FP was: “They enjoy a test because I give it after I have explained to them and it is easy to control, it is not like giving learners homework, projects and assignments which are done by a few.” I asked the participant why that is happening and she said “Some learners do not stay with their parents, they come from broken families and there is no one to remind them and see to it that they do their homework.” She went on to say that some parents are illiterate and cannot help their children when they are doing homework. This shows that there are challenges facing the new approach on assessment as stipulated by the policy; for example, homework is one of the assessment strategies which should be implemented by the teachers. The response suggests that homework is still a big challenge to teachers and parents. Learners do not finish their homework and parents are not literate enough to help their children with it. I will discuss this more when I look at challenges facing implementation of the new policy on assessment.

SP’s response was: “They like projects, especially those who are struggling in tests.” I asked her if the parents of her learners support or help their children when doing projects, because projects are similar to homework in that if not completed at school, they have to be done at home. The response was that parents do help their children, although it is not easy. The school usually calls a parents’ meeting and reminds parents about their responsibilities, one of them being to take care of their children’s school work. The response suggests that the participant knew about other forms or strategies of assessment, since some learners enjoyed projects, one of the strategies in the policy. I also found it interesting that the parents of learners at this participant’s school do respond when it comes to giving support to their

children. Perhaps the school has a policy on how to deal with the challenge of involving parents in school matters and in giving support to their children. The response also taught me that what happened in the first participant's school was not necessarily what happened that of the second participant.

TP's response was: "My learners enjoy assignments or projects, although they encounter problems because their parents are not learned." I asked if all learners were doing assignments, since the first participant had indicated that she encountered problems when giving homework and projects which needed support from parents. The response was: "A project is not done by all learners, and also parents do not help their children with homework." This implies that although the three participants usually gave learners tests as assessment, some learners did not like it. They preferred assessment which was not as strictly controlled as tests. In my experience I have also found that learners tend to prefer work that is done practically and informally.

The question which arises with this question is why then do the three participants stick to testing as a form of assessment? It would seem that although they know about other forms or strategies, they preferred the one which is easy to control, although they might know that tests are not the assessment strategy preferred by the learners.

It was apparent from the interviews I had with my three participants that they were not doing what is exactly stated in the DoE policy in terms of how to assess learners using continuous assessment as the chief method, would give them minimum problems from their learners. Challenges here will be discussed later.

5.2.6 School support in implementing assessment

The fifth question I asked was "Do you get support from the school (management) and teachers in terms of implementing assessment?"

FP said: "We have just started our school subject committees and we have not yet discussed assessment in the committee." She was honest in her response; when I came to that school as a teacher there were no subject committees. Teachers did not get together to discuss their respective subject issues, including assessment. I first introduced the idea of subject committees there, to try and make teachers support one another in terms of teaching and

learning issues, including policies and finally assessment as a vital part of the curriculum. I was the chairman of the Mathematics subject committee. Therefore, at that stage there was no formal support for the teachers in implementing assessment. I asked this question because usually, in a well organised school, there are subject committees where teachers get together to support one another.

The same question was posed to the second participant, who responded that she does get support from fellow teachers, although she thinks it is not enough. She went on to discuss assessment. I asked SP how often the teachers met; she was hesitant and not sure about this, and ended up saying they meet twice a term. To me it seemed that they seldom met, if they met at all. If a policy existed as to how many times they would meet in month, term or so, it would not be difficult to remember how often they did so.

The DoE stipulates it as a policy that each and every school should have subject committees where teachers come together to discuss issues of teaching and learning. The DoE also advises neighbouring schools to cluster so that they can supplement one another in connection with subject issues. One of the subject issues to be discussed was assessment, where teachers could also discuss the challenges they faced when assessing learners.

The third participant said that teachers in her school do help each other if one asks for help. This response was a little confusing; it was like saying that it was optional to meet or to be helped – if you ask you would be, if you didn't nothing would be done.

Responses from the three participants suggest that in the three schools there are no proper structures to give support to teachers as required by the DoE. In the first participant's school, subject committees have just been formed, and nothing much had yet been done. FP agreed that they had not discussed assessment issues. The second participant's school does not have subject committees, and as for teachers supporting each other, there is an element of doubt since SP can't remember how often they meet. TP's response also suggests that they do not meet in a proper structured way as in subject committees, just on an individual, one to one basis.

The following analysis looks at the question "What challenges do you encounter when implementing the policy?" Some challenges facing the participants came out during

responses to the previous questions. It is important to state that the challenges facing teachers when assessing were common to all three schools where I interviewed the three sources of data. I have gathered the responses and ordered them into sub-topics.

5.3 Challenges facing teachers when implementing the policy

Before analyzing the challenges facing teachers when implementing the assessment policy, I must state that all the participants agreed that it is important to be clear about the policy and assessment. It was agreed that assessment plays an integral part when it comes to the execution of the curriculum. I have already referred to Murphy and Torrance (1988), who stress that good education encompasses good assessment – which is exactly what prompted this study.

5.3.1 Too many learning areas in Grade 4

The first concern which dominated discussion with the three participants was that there are too many learning areas for young children who are doing Grade 4. It must be remembered that these children come from the foundation phase, where only have three learning programmes. Suddenly there is a big leap, because in Grade 4 they do eight learning areas. It came out from the interviews that the learners are confused by too many teachers coming to teach them, whereas in Grade 3 they are taught by one teacher. Assessment then becomes a big problem, because children end up not knowing which learning area to study. I think this concern from the participants is valid, because I also hear teachers in my own school complaining about learners being confused by too many learning areas. When my Grade 5 learners come to me at the beginning of the year, it is sometimes difficult for them to turn to the page you are referring them to.

5.3.2 Learners' home background

The three participants agreed that learners' home background affects the learning of the child at school. Most learners, as the FP alluded to, come from broken families. Very few learners stay with both their parents, and some do not have parents at all but live with their grandparents. According to the assessment policy, parents are very important stakeholders of the school. They need to take care and become responsible for their children's work. It is

hard for the learners to do their homework if there is no one to motivate and remind them about their school work.

The biggest challenge to teachers is that when learners are given assignments, projects and homework, they do not complete them. FP indicated that it sometimes takes a whole month to remind and beg them to complete their work so that it is recorded in the assessment schedule. This is the reason why FP prefers other forms of assessment. As she says: “Children do not do their homework. Test is most preferable to give because it is written in your presence and they finish it at the same time.”

5.3.3 Parental involvement

According to the policy, parents play a vital role in their children’s work. Grade 4 learners are still very young and depend on their parents to remind them about everything concerning their learning at school. Some of their responsibilities are neatness, punctuality and commitment to their schoolwork. During the interview the age of the children was raised by SP, who said: “Mathematics is a difficult subject and most learners are very young and can’t cope with the amount of work they are expected to do.” This again puts emphasis on the importance of parental involvement in their children’s work.

The DoE (2002b?) in the NCS for Mathematics under the heading ‘Managing assessment’ in the sub-topic ‘People involved in assessment’ states that the school and the teachers have overall responsibility for assessment of learners. Teachers are expected to create a valid, reliable and credible assessment. The document goes on to say that provincial policies should ensure the involvement of learners, school assessment teams, district support teams, support services and parents as appropriate. So, it is clearly stated that parents are involved in the assessment of the learners. Teachers need to give feedback about the performance of learners to parents, and parents also need to give feedback to teachers in the form of a written letter or verbally in the meeting where parents are called to the school to check their children’s performance.

The role played by the three pillars of the school - teachers, learners and parents - is vital. If one stakeholder is not taking responsibility it will be hard for the implementation of the assessment policy to be done with success.

5.3.4 Overcrowded classes

Large numbers of learners per classroom was also highlighted as a big challenge when implementing assessment policy. Teachers need to give individual attention to all learners and also to give immediate intervention as learners do their work. Formative assessment needs to be done. The DoE (2005a) through its policy document states that formative assessment is developmental and is used to inform teachers and learners about their progress. The document goes on to state that formative assessment improves teaching and learning by giving teachers direction and enabling them to adapt to learners' needs. Formative assessment or assessment for learning as the document puts it, involves both teacher and learner in a process of continual reflection and self-assessment, and is interactive in that the teacher uses thought-provoking questions to stimulate learner thinking and discussion. This type of assessment is crucial to the implementation of assessment policy - but is not possible if there are too many learners in a class.

The three participants agreed that the number of learners should be reduced so that it is possible to give intervention and feedback as quickly as possible to learners. Le Grange and Reddy (1998) refer to formative assessment as being conducted as the learning process takes place and used to influence or inform the learning process. The authors use examples where the Mathematics teacher moves from learner to learner to provide immediate intervention and feedback. Again, this is not possible in an overcrowded class.

5.3.5 Learners' commitment to their school work

The three participants were concerned that learners do not commit themselves to what they are doing. Assessment needs dedicated learners, because usually you have to learn before assessment. The assessment policy requires that teachers do informal daily assessment. The document states that learners' progress should be monitored during daily learning activities. This informal daily monitoring of progress can be done through question and answer sessions, reflections, observations, short assessment tasks completed during the lesson by individuals, pairs or groups, or homework exercises. Assessment should include self assessment, peer assessment and group assessment. All above assessment strategies need learners who are committed to their work. Another point which came up here was the issue of discipline.

5.3.6 Discipline

The three participants raised the issue of discipline when discussing assessment. They agreed that teaching and learning is not possible where there is no proper discipline. The main concern on discipline was learners coming late to school, especially in winter. The main cause for coming late is that some of the learners have no one at home to wake them up on time. If parents are there, they go to work earlier than them. After the parents have gone, learners take control of themselves and decide when to leave home. Another concern, raised by TP, was absenteeism. Learners absent themselves for trivial reason. They stay alone during the day and there is no one to question them. If they are absent, they lose out on school work and that affects their assessment, which is continuous. (The chief method of assessment in the NCS is continuous assessment, which is done all the time.)

Those who come late miss the first period and miss instructions from teachers when they give them assessments. Another concern is learners who do not complete work on time. They are given an assessment and a date to complete the work, but do not complete it. Very few finish their work, especially assessments in the form of projects and assignments. Other learners are ill disciplined in the classroom, and influence other learners; it is not easy to punish them, and corporal punishment is prohibited. Here I asked why the teachers do not use other forms of punishment than corporal punishment. The response was that alternative punishment is mostly carried out after school or during breaks, and cannot be effected during teaching because it needs supervision from those same teachers who are teaching. Proper teaching cannot take place if the learners are ill disciplined.

5.3.7 Resources

The three participants all agreed that teaching and learning resources were the main hindrance to effective and good assessment of learners. There are resources which are disposable or waste material which learners can get and use for free, but learners are expected to buy some of the materials. Most of the learners come from disadvantaged families and don't have money to buy the required resources for assessment such as projects, making models, making a collage and shapes.

5.3.8 Teacher support

Teacher support is very important at school. Teachers need to supplement one another in terms of information they need to effect good assessment practices. Earlier I alluded to the question I asked my participants where I wanted to know if they get support from their school and teachers. Their responses showed that the support they get is minimal, and they still need support teams at school like subject committees where academic issues are discussed - including all challenges that face teachers when assessing learners.

5.4 Findings of the study

The findings of the study show how teachers perceive assessment of Mathematics and what do they actually do in the classroom when they are assessing Mathematics. They also give an indication of the challenges teachers face when implementing the assessment policy in the classroom.

5.4.1 Understanding and implementation of assessment

During the interviews it became clear from my three participants that they don't have assessment policy documents. If they do have them in the school, they are kept in the office or stockroom. This suggests that they do not have assessment policies in the files.

All schools were supplied with policy documents for all the learning areas in 2002. In 2005 all schools were supplied with assessment policies for the new curriculum, NCS. The third participant said that she did have the assessment policy and had received it in the previous year (2005).

Every learning area has its own policy document with learning outcomes and assessment standards, and the last part of each learning area statement is on assessment. All procedures on how assessment should be done are written in this assessment section of each document. There is a new document specifically for assessment of Mathematics in the NCS (DoE, 2005a).

The data I obtained from the three participants in response to the second question made it clear that they did not clearly understand the assessment policy. FP said it was impossible for

her to know and understand the assessment policy because she did not have it and had never read it. It became clear that although schools had the policy, some teachers, like the first participant, had not handled it. It would suggest that she was relying on information she had gathered from the workshops, because when questioned further, she said she was doing what she got from the workshops. This was interesting, because this would have meant they were not workshopped on the new assessment procedures (you just said she went to workshops so I don't understand how you can make this latter statement – please clarify – confusing).

I knew that the information given by the first participant (FP) in this regard was credible because I was also teaching at the same school. The foundation phase teachers and Grade 4 teachers tend not to use the policy documents; they usually did what was comfortable to them, which is why I introduced subject committees for them to discuss teaching and learning issues including assessment.

Responses from the second participant (SP) underlined the finding that teachers were not clear about the assessment policy. The data show that there are not enough structures in the schools to be used by teachers to sit down and discuss teaching and learning issues, including assessment policy. Teachers rely mainly on workshops that they attend or are organized by the DoE. The policy is clear about this issue, when it says that there should be assessment teams within the school and also subject committees where assessment issues are discussed and planned. SP stated that she attends workshops organized by the DoE and those workshops are not enough.

Although teachers may try to use other strategies of assessment, they are not clear about how to allocate marks for these assessment strategies when they give them to learners. Maybe that is why they resort to tests, because they are easy to mark.

Data from the third participant (TP) indicated that in her school they do understand the assessment policy. She indicated that she does have the assessment policy, and correctly named it. What was questionable from her response was whether they had been workshopped on the assessment policy.

The study also wanted to ascertain what assessment practices were being carried out by teachers inside the Mathematics classroom. The responses from SP showed that tests

dominate her assessment. The *National Curriculum Statement, General Education and Training: Assessment Guidelines for Mathematics Intermediate and Senior Phases* (DoE, 2005a) recommends the following forms of assessment in Mathematics: mathematical investigation; projects; assignments; tests and examinations; class work and homework. Other forms of assessment that can be used in the process are: presentations; brainstorming; simulation; observation; interviews; structured questions; and questionnaires.

FP indicated (after my probing question) that she sometimes give investigations and projects. This confirms to me that tests were the main form of assessment she used. This also confirms my rationale for doing the study: learners graduating from Grade 4 to Grade 5 (my class) did not seem to be used to other forms of assessment other than testing. The previous paragraph indicates how many different forms of assessment should be administered by teachers, in particular when they are assessing Mathematics. However, according to the findings of the study, very few forms of assessment are being used by the participants. The policy also stipulates how many tasks or activities should be given in a term.

The response from SP confirmed that she does not follow the policy when assessing learners. She said she usually gives a test because it is easy to control and she can see who did not write. So for SP assessment was also dominated by tests. TP said she assesses learners after giving them work. The participant was not clear on what form of assessment she gives, but insisted that she assesses learners at the end of the week or end of the month (usually tests are given at these times). The assessment forms provided in the new policy are an alternative and new approach to assessment, although they include what is known as traditional assessment forms - tests and examinations. The data I collected imply that the participants are still stuck in the traditional way of assessing learners.

Another finding which confirmed the gap between policy and practice came out when I asked which form of assessment technique was most enjoyed by learners. It came as no surprise when the first participant said tests - because she gives them after explaining what is supposed to be done. Still, we cannot be very sure about this - if learners are constantly given a particular form of assessment, they will get used to it. However, the learners may also like other forms of assessment which are practical, like projects and investigations - but if these are not given, it is not easy to tell if they enjoy them or not. Learners by nature enjoy practical work, because they tend to be active.

The first participant also gave reasons why tests dominate her assessment; she said that when learners are assessed in the other ways, like homework, projects and assignments, they do not finish it all and that disrupts everything, because some would be left with no marks in the schedule. Reasons for learners not finishing work, she said, included the fact that the learners are often from broken families. Some learners have single parents and some have no parents at all to remind them and to see to it that they do their homework or assignments.

The second participant gave a different view from the first. SP said that the learners - especially those struggling in tests - liked projects. She was also asked if parents help their children if they are given projects and homework. Again her response was different to the first participant: she indicated that the parents do help their children when doing homework and assignments. She said that she calls meetings with parents and reminds them about their responsibilities, one of them being helping their children with their school work on an ongoing basis. Meeting parents to talk about school and their responsibilities is required by the policy, which states that parents are one of the stakeholders involved in the assessment of their children.

The third participant's response was that the learners enjoy assignments and projects, although the learners encounter problems because their parents are illiterate. This supports what was said by the second participant. I further asked TP if all learners enjoy projects and assignments, and she said that although learners enjoy projects, not all learners complete them. The participant also reiterated that some of the learners enjoy testing. This confirms once again that testing is carried out more than other forms of assessment. Tests are taken as a once-off assessment. One of the reasons for giving tests only is that the teacher does not have to worry about reminding learners about the completion and submission of work. The policy aims to go beyond assuring strength of recall or memory only, and requires that skills, attitudes and values be assessed.

The data also showed that the reason for participants not being clear about the assessment policy was lack of support from the schools and staff members. There are structures (subject committees) to support assessment in some schools. These committees give teachers a chance to air their views and concerns. This first participant indicated that they have just started school subjects committees and have not yet discussed assessment. Forming subjects committees is one of the duties of the school management team. For the team to manage

assessment they need to have discussed the policy, and everybody needs to be clear on what to assess and how to assess as stated in the policy document. I was a member of the school management team at FP's school and started subject committees, and chaired the mathematics committee.

The second participant gave a different response to the first; said she does get support from her teachers, but does not think that it is enough. She went on to say that they met with other teachers to discuss assessment. When I asked SP about how she understood the policy, her response was that she does not understand the policy, although they meet with teachers within the school and other teachers from other schools.

The third participant said that one does get help from other teachers if you ask for it. This shows that assessment structures like subject committees or special committees on assessment do not exist in TP's school, but help is only given if you ask for it and not in a formal, structured way. Hence, the data gathered on this issue revealed that a proper structure for assessment does not exist in the schools where I interviewed participants. If the structures exist, they are there in name but not properly utilised.

5.4.2 Challenges teacher face when trying to implement assessment policy

Other important findings of the study were about the challenges teachers faced when trying to implement assessment policy. The responses of the teachers seemed to indicate that there are many challenges affecting proper implementation of the assessment policy. These challenges seem to be common to all three of the different schools in different contexts.

The first challenge facing teachers is that already alluded to of teachers not being clear about the assessment policy or the assessment. How then can they be expected to assess as they are expected to assess? They also receive very little or no help in terms of clarifying assessment.

The second challenge is that of parental involvement. The study has revealed how difficult it is to assess learners who do not stay with their parents. Learners are sometimes given assessments to complete at home, and then do not have assistance with this or with making sure it is done. The study showed that teachers might use this as one of the reasons why other forms of assessment are not administered. It also came out that some parents were said

to be negligent because they were not taking responsibility for their children and reminding them about their homework; this affected completion of assessment and giving feedback on time.

The third challenge that emerged is that of learners who are not committed to their work. I have already alluded to the fact that they are not completing their work on time - this hinders learning and teaching progress because teachers have to go back to the old assessment when these are not completed on time. Although it came out from analysis that some learners love practical work like projects, it is a challenge when they are not completed it on time.

The fourth challenge raised by participant is that of limited resources when it comes to constructing items for projects. Some materials are not easy to get and can only be bought from shops, and are expensive. Most parents do not work and depend on social grants or pensions given by the government, so cannot afford these.

5. Conclusion

The interview I carried out with my three participants provided me with the information I was hoping to obtain. The interviews were also very interesting in terms of what is done by teachers when they are assessing learners. They also revealed challenges encountered by teachers when teaching and assessing learners. I was fortunate in this study to have access to very experienced teachers to provide the data (nowhere do you indicate how much experience they had). According to Van Manen (1990), personal experience counts for a lot. My three participants also seemed to be open and genuine in what they were telling me. The main challenge faced by the teachers seemed to be the lack of information about assessment.

CHAPTER 6. RECOMMENDATIONS AND CONCLUSION

6.1 Recommendations

From the data I collected through interviews with the three participants in the study, it became clear that it is important that all teachers should have their own copy of the DoE assessment policies. It also became clear that although schools may have had policies, teachers did not have their own copies. My recommendation is that the DoE should make an effort to make sure that each teacher does possess an assessment policy, so that they are clear about the policy. This could be achieved through school visits by the subject education specialist.

In order for the assessment to be done correctly by the teachers, they should understand and be clear about the policy. The data that I collected revealed that teachers do not fully understand the policy. Among the reasons given as to why the teachers did not assess learners with other forms of assessment was that they did not know how to do so. More workshops need to be held at districts, circuit and ward level, to ensure that teachers understand what they must do when assessing the learners. These workshops should be held regularly, and not be just once-off. Networking should also be encouraged by the DoE at circuit, ward and school level.

The participants referred to a number of challenges experienced in assessment, an important one being parents who are absent or illiterate and cannot help their children with home work and projects, and also parents who do not take responsibility for their children. The National Protocol on Assessment (2005b) clearly states that parents are important stakeholders of their school, and part and parcel of the assessment of their children. Parents need to be encouraged to attend Adult Basic Education and Training so that they are literate and can help their children with school work. The DoE needs to remind parents about their responsibilities, and the school needs to communicate to parents during government body meeting about what is expected from them. Parents also need to be assisted and workshopped around what is expected of them.

6.2 Conclusion

Assessment is a very important component of the curriculum - good education will always have good assessment (Murphy & Torrance, 1998). For the curriculum to be carried out correctly, teachers need to be clear about the policy, and the policy should be given to teachers. The teachers should also be supervised in order to see if they are carrying out the correct assessment practices. Proper assessment structures need to be put in place at school level for teachers to use whenever they need help.

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APPENDICES

23 DAN PIENAAR ROAD
PORT SHEPSTONE
4240
06-02-2006

THE PRINCIPAL
IMPANGELE PRIMARY
UMZUMBE
4225

Dear Madam

Re: REQUEST FOR PERMISSION TO CONDUCT RESEARCH INTERVIEW IN YOUR SCHOOL

I am currently studying at the University of KwaZulu Natal. I am Master of Education student specializing in curriculum. My research topic is: Investigating assessment practices in grade 4 mathematics. The aim of doing this study is to find out what assessment practices are done by teachers when assessing mathematics. I chose the teacher from your school because when I facilitated OBE last year, they seem to be not clear about how to go about when assessing. I only request your teacher to give her views on assessment as policy and as practice. There will be no financial expenses incurred as I will visit your school. The interview will be tape-recorded and the data will be confidential. It will take one hour and it will be done once. After I have used the data I will burn the cassettes so that no one uses it or get hold of it. No one will know about the interview. Only I and your teacher will know. The teacher is free to decide not to participate and also can withdraw during the interview. Nothing will be done to her. Please do not hesitate to contact me about more details of the interview.

Yours faithfully

MR T.T. MEMELA

My contact numbers are: office hours: - 039-684 6744

After hours: - 039 682 3034

Cell no.: 083 694 7953

Contact person (my supervisor). Office hours: - 031 260 3688

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23 DAN PIENAAR ROAD
PORT SHEPSTONE
4240
06-02-2006

THE GRADE 4 MATHEMATICS TEACHER
UKHOZI PRIMARY
PORT SHEPSTONE
4225

Dear Teacher

Re: REQUEST TO INTERVIEW YOU DURING MY RESEARCH

I am currently studying at the University of KwaZulu Natal. I am Master of Education student specializing in curriculum. My research topic is: Investigating assessment practices in grade 4 mathematics. The aim of this study is to find out what assessment practices are done in grade 4 mathematics. I chose to interview you because you wanted to know more about assessment when we were in OBE workshop. I think the interview will help you because by doing this research, the department will know the problems encountered by teachers and the department will rectify them. You will only give me your views about assessment through interview and I will use the tape-recorder to record the interview. The interview will be confidential between you and me. After I have analyzed the data I will burn the cassettes so that no one gets hold of them. No financial expenses will be incurred. You are free to refuse this interview and you are also free to withdraw during the interview. Please do not hesitate to contact me about more details of the interview.

Yours faithfully

MR T.T. MEMELA

My contact numbers are: office hours: - 039 684 6744

After hours: - 039 682 3034

Cell No.:- 083 694 7953

Contact person (my supervisor). Office hours: - 031 260 3688

23 DAN PIENAAR ROAD
PORT SHEPSTONE
4240
06-02-2006

THE GRADE 4 MATHEMATICS TEACHER
IMPANGELE PRIMARY
UMZUMBE
4225

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PORT SHEPSTONE
4240
06-02-2006

THE SEM
SAYIDI CIRCUIT OFFICE
PRIVATE BAG X880
PORT SHEPSTONE
4240

Dear Sir

I am a teacher under your ward. I am a student at the University of KwaZulu Natal. I am doing Master of Education. I request to interview three Grade 4 Mathematics teachers. They are from Imbali Primary, Impangele Primary and Ukhozi Primary. The interview is confidential and the teachers are free to refuse or withdraw from the interview. My research topic is: Investigating assessment practices in Grade 4 Mathematics. I think this research will help the department to know what is happening in schools in terms of the assessment practices. Please contact me for more details.

Yours faithfully

MR T.T. MEMELA

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DECLARATION OF THE PARTICIPANT

I _____ (full names of the participant), accept your request to interview me in my school. I have understood the contents of your letter. I have also understood that I am not forced to be part of the research and that I can withdraw from interview any time I feel to do so.

Signature

Date

SEMI-STRUCTURED INTERVIEW SCHEDULE

SCHOOL: _____

GRADE: _____ DATE: _____

LEARNING AREA: _____

NAME OF THE TEACHER: _____

TOPIC: An investigation n of assessment practices in Grade 4 Mathematics.

1. Do you have an assessment policy?

2. Do you understand the assessment policy?

3. How do you implement the policy?

4. Which assessment techniques or forms of assessment do learners enjoy most?

5. Do you get support from the school (management) and teachers in terms of implementing the assessment?

6. What challenges do you encounter when implementing the policy?



**UNIVERSITY OF
KWAZULU-NATAL**

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08 February 2011

Mr T T Memela
School of Education
EDGEWOOD COLLEGE CAMPUS

Dear Mr Memela

PROTOCOL: An investigation of assessment practices in grade four Mathematics
ETHICAL APPROVAL NUMBER: HSS/0074/2011 M: Faculty of Education

In response to your application dated 04 February 2011, Student Number: 202519377 the Humanities & Social Sciences Ethics Committee has considered the abovementioned application and the protocol has been given **FULL APPROVAL**.

PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

Professor Steve Collings (Chair)
HUMANITIES & SOCIAL SCIENCES ETHICS COMMITTEE

SC/sn

cc: Dr Combrink (Supervisor)
cc: Mr. N Memela

Postal Address:

Telephone:

Facsimile:

Email:

Website: www.ukzn.ac.za

Founding Campuses:

Edgewood

Howard College

Medical School

Pietermaritzburg

Westville