Using Data from Classroom Tests to Improve Grade 7 Results in the Khami District Primary Schools of Bulawayo Metropolitan Province

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Abstract: In an effective school, pupil performance is always monitored. The assessment data collected during classroom tests is analysed in detail and used to improve the performance of learners as well as the teacher instruction. This paper sought to determine the effective use of assessment data, classroom tests, in particular, so as to improve academic performance at Grade 7 level in Khami district of Bulawayo Metropolitan Province. Mixed research methodology was used. Questionnaires and interviews were used to collect data from the sample of 90 grade 5-7 teachers in ten schools. Purposive sampling was used to identify the ten schools as these schools were selected on the basis of performance in the grade seven national tests. Top five schools and bottom five schools were selected. The research revealed that teachers do collect data on classroom on classroom tests but do not adequately analyse the data to make informed decisions to improve learner performance. Hence the paper recommends that teachers should be provided with comprehensive assessment guidelines and educated in the handling of assessment data to make data-driven decisions.

Keywords: Academic performance; Classroom test; Intervention strategy.

INTRODUCTION

In Zimbabwe, the success of any educational institution is measured by the results of its summative assessment. A 'good' school is one which produces 'good' results in national examinations. As such, every year the performance of each primary, secondary and high school in public examinations comes under the spotlight as soon as the results are published. Poor results mean 'poor school'. Good results mean 'good school.'

Potter and Powell [1] have this to say about the importance of examination results as an instrument to measure the success of a school;

"Whatever reservations we may have about the crudity of examination results as measures of a school's success, it would be foolish to deny their importance to students, parents, employer and teachers alike."

Potter and Powell [1] imply that, whatever successes a school can achieve in other areas of learning, if it does not produce good examination results, it cannot be viewed in the society or community's eyes as a 'good' school. Numerous studies have been conducted to find out ways of improving academic performance in schools. This is so because academic performance is the major determining factor in the future, not only of the individual, but of the nation as well. It is precisely for this reason that school managers find themselves under severe pressure from all corners to improve their examination results. This pressure has prompted the school managers to try a variety of methods to improve academic performance. According to Bray [2], some of the methods are not based on research, while others like repeating a grade and extra lessons have failed to produce the desired results. The challenge for schools, therefore, is to continue to seek strategies which will enable them to improve academic performance in order to get the respect and admiration of their communities in general and district and provincial education authorities in particular.

In Bulawayo Metropolitan Province, the directorate has benchmarked 80% as the minimum overall pass rate at grade 7 level, (Source Khami District Office). The province actually rewards those schools that reach or surpass that benchmark in an annual ceremony. Any school with a pass-rate below the set minimum is considered to be 'under-performing'. This is tantamount to indirect naming and shaming as such schools are put under the spotlight by the district and provincial officers including parents. The underperforming schools (and performing schools

for that matter) have made achievement of academic success of their pupils their top priority. This, therefore, means they must continue to look for ways to better their results.

The Chronicle of 28 January 2015 published the grade 7 results of 2014 in Bulawayo Metropolitan Province's 120 primary schools. Only 43 schools out of 120 attained the province's minimum pass rate of 80%.That is a paltry 35.8%. Only one school achieved 100% pass rate. Fifteen schools performed below 50% for the second year running. Eight of those schools are in Khami district. These results are a serious cause for concern. The situation calls for a concerted effort to turn it around. The underperforming schools are a huge disgrace to the Ministry of Education and the communities that they serve.

One can argue and state that, most of these schools, generally, have always had some kind of data at their disposal when making decisions to improve the performance of their pupils. The data that these schools have collected is usually based on performance in national examinations. However, the data from classroom assessment is hardly used to improve academic performance.

The purpose of this research study, then, was to explore the extent to which schools in Khami district of Bulawayo Metropolitan Province were effectively using assessment data from classroom tests to improve academic performance on the part of their pupils. Specifically, the study was to zero-in on the following primary objectives;

Objectives
- To determine whether or not teachers in selected schools analysed data on classroom tests.
- To find out how teachers in selected schools used data on classroom tests to improve academic performance.
- To determine whether the use of data on classroom tests to improve academic performance helped to improve grade 7 results.

REVIEW OF RELATED LITERATURE
The review will focus on the meaning of assessment, purpose of assessment, testing, and feedback on assessment and analysis of test results.

These aspects would help create the bigger picture on the use of assessment to improve academic performance. The literature to be reviewed will be from books, articles, journals, the internet and other educational documents.

The meaning of assessment
Du Plessis *et al*. [3], cited in the Gauteng Department of Education Assessment Guidelines, define assessment as a continuous way of finding out what pupils know, comprehend and can do. The Gauteng Department of Education [4] article on assessment guidelines, defines assessment as a process of collecting and interpreting evidence in order to determine the pupils' progress in learning and to make judgement about the pupils' performance. Elliot *et al*. [5] states that assessment is a process of gathering information about a student's abilities and using such information to make decisions about the student.

The three definitions given above have the following in common.
- That assessment is a process, implying that it is a system that goes on and on.
- That assessment is particularly concerned with compiling information on whether or not pupils grasped the concepts they were taught, implying that it entails tracking the pupils' level of understanding of what has been taught.
- That the information gathered is used to make decisions on the teaching / learning process, implying that the teacher will have to decide what to do with the strengths and weaknesses of his/her teaching methods and the strength and weaknesses of his/her pupils.

The aim of this study was to find out whether schools in Bulawayo Metropolitan Province (Khami district) used assessment information they gathered to improve the performance of their pupils. The definitions are, therefore, in line with the hypotheses stated earlier in chapter one.

The Purpose of Assessment
For any teacher, it is critical that, the purpose of assessment is clear and unambiguous. Understanding the purpose of assessing ensures that, an appropriate relationship is created between the purposes and the methods of assessment.

Hamidi [6], cited in the GDE Assessment Guidelines, identified the following principles of assessment. Assessment should:
- Determine planning
- Serve teaching
- Serve learning
- Be curricular driven.
- Be interactive
- Be exposed to pupils
- Non-judgmental.

A number of other authors have looked at the purpose of assessment. Assessment should help teachers plan for the future. Gómezes and Upshur [7] state that the plans present a means of realising instructional objectives which are put into practice as classroom assessment to achieve the actual outcomes. Assessment drives teaching by forcing teachers to teach what is to be assessed [8], cited in the GDE Assessment Guidelines. Classroom assessment is an integral part of

the learning process. Assessment and learning are inextricably linked processes because of their mutually influenced features. Learning on its own has very little meaning without assessment. The literature cited here draws a distinct link between teaching/learning and assessment. This evidence, therefore, supported the choice of this study which sought to find out whether schools were using assessment data to improve academic performance.

Testing

Testing is a form of assessment. It is the most common procedure through which teachers collect evidence about a student's learning. Testing results are the most commonly used to measure performance in schools [9] cited in the GDE Assessment Guidelines.

The Relationship between Testing and Academic Improvement

Good tests are designed and used to discover if objectives have been met and if learning has occurred, they are also a means of communication [5]. A teacher can use test results to identify students' strengths and weaknesses in order to improve classroom instruction and/or adjust curriculum[10].According to Radencich and McKay [11] test results may be used to put students into ability groups for instructional purposes. Thomas Guskey [12] concurs with this notion when he says students can be grouped so that those who demonstrated understanding are provided with enrichment material while those who need additional time are provided with follow-up instruction. Tests that are closely integrated with daily instruction and that include reflective questioning of feedback to learners are often viewed as powerful tools for learning, [10]. In some cases educators find these test results even more useful than district or state tests. District and state tests have been criticised for being a duplicate of what the educators already know from classroom assessment, Marsh *et al*. [13].

The understanding here is that the classroom or school - based tests have a quick turnaround for receiving results as opposed to state tests which are written at the end of the year and the results are released long after the schools have closed. Such results bear very little consequence on the new learner in the following year. The grade seven results in Zimbabwe are a good example of such a situation. The literature cited here shows that there is a relationship between testing and improving academic performance. The literature explicitly indicates that the results of any test can and should be used to improve teaching and by implication improve academic performance. This study was aimed at answering the question: Do schools in the Khami district of Bulawayo Metropolitan Province use data on classroom tests to improve grade 7 results? On the contrary there is a school of thought that is not convinced that the relationship between classroom tests and academic improvement is significant.

Problems of testing

The construction of a good test is a cumbersome task. It demands commitment and time. With a loaded curriculum like the one in Zimbabwe's primary schools, the time is just not there. Commenting on the problems of testing [5]. Teachers are busy and may well be tempted to ask, "Why bother? The testing conditions, the person giving the test and test itself are potential sources of an error. A test has its limitations. For example a student might score a zero in a geography test does this imply no geographical knowledge? Definitely not. It means that knowledge is zero on the geographical material [5].

Gronlund [14] gives another challenge related to the reliability of a test when by saying,

"Suppose ... Miss Jones gave an achievement test to her class,

how similar would the student scores would have been if she had

tested them yesterday … or tomorrow or next week?"

This shows that, the test might be affected by other factors like time, environmental or emotional factors hence its results might be unreliable. Unless a test is reasonably consistent on different occasions the teacher can have very little confidence on its results[15].

The negative aspect of the use of classroom tests to try and improve academic performance is the possible lack of validity. It makes no sense to prepare a classroom test that does not measure what has been taught[5].

Emphasising 'testing' as a major classroom assessment tool has been criticised for encouraging 'teaching for the test'. There is substantial evidence of teachers and school leaders responding to student assessment schemes through teaching students specific skills that are assessed, narrowing the curriculum and allocating more resources to subjects that are tested. However, this is with particular reference to external examinations.This research study seeks to find out the impact of test data on the performance of grade 7 pupils in national tests.

The researcher, having been a teacher and school head in Zimbabwe for twenty- two years, has seen non-examinable subjects being sacrificed for the examinable subjects. Frequent testing has been done simply for drilling the pupils. These 'drill' tests would be conducted during the time for non- examinable subjects. This results in the objectives of the non-examinable subjects not being achieved as their notional time is compromised. Examples of such subjects in the Zimbabwean curriculum are physical education, music and art. This practice is common with grade 7 teachers. It should be noted, however, that despite these

challenges, testing remains the most important tool in measuring performance for the purposes of determining appropriate remediation.

Constructing classroom tests

For the classroom test to be meaningful, reliable and valid it should be thoroughly prepared. A good test, as stated earlier demands time and commitment. One way of constructing a reliable and valid test is to use the Blooms' Taxonomy. According to Elliot *et al.* [5] the major purpose of the Bloom's Taxonomy is to:

- Help in curriculum construction,
- Identify certain behaviours in any plan (recall, define, compare),
- Preparation of learning experiences and evaluation devices,
- Serve as a tool to analyse educational processes.

In the construction of classroom tests, the focus is on (d). According to Bloom's Taxonomy any test must cover the following classes. These classes relate to the cognitive domain which has a direct link with testing.

Table-2.1: The Interpretation of the Bloom's Taxonomy (Source, Elliot et al, 1996)

Skill	Sample prompts	Purpose	Level
Remembering	Recognize, list, describe, identify, retrieve, name	Memorize, and recall facts	1
Understanding	Describe, explain, estimate, predict	Understand and interpret meaning.	2
Applying	Implement, carry out, use, apply, show, solve.	Apply knowledge to new situations	3
Analysing	Compare, organize, cite, differences, deconstruct.	Breakdown or examine information.	4
Evaluating	Check, critique, judge, hypotheses, conclude, explain.	Judge or decide according to a set criteria	5
Creating	Design, construct, plan, procedure	Combine elements into a new pattern or product.	6

Levels 1 to 2 represent the Lower Order skills, 3 to 4 represent the Middle Order skills and Levels 4 to 6 are Higher Order skills. Knowledge- based, highly technological economy requires that students master higher order thinking skills. Darling-Hammond[16].

The Bloom's taxonomy should be an integral part of a test if that test is to be effective in being a creditable tool for measuring performance. The taxonomy categories help to align educational objectives in the simple to complex sequence. This set up helps the teacher to analyse the results as it will be easy to identify the "skill – deficiency" of the pupils. Consequently the data so obtained will be reliable in making decisions on how to improve instruction.

Feedback on assessment

The GDE Assessment Guidelines state that feedback is a vital communication process between educator and learner. The guidelines further state that constructive feedback should facilitate learning and subsequently enhance marks and grades.

Indeed feedback is an important component of assessment / testing. After giving a test it is imperative that a teacher points out the strengths and weaknesses of the pupils in their performance. The teacher should always give students accurate, detailed comments or notes about their performance specifying what was done well and what needs improvement [17], cited in the GDE Assessment Guidelines. If the student understands the teacher's feedback then they are bound to improve on their performance. Feedback is best when it is

corrective in nature, helps learners see their errors and learn from them, (GDE Assessment Guidelines). Positive feedback helps to raise the self-esteem of learners. It is also important that feedback is prompt. Delayed feedback will weaken the correction between the results of the test/assessment task and the learner hence it will lose its purpose.

Feedback has been included in this literature review because it is crucial in motivating pupils improve their academic performance. Teachers who do not take feedback seriously render the use of assessment data ineffective.

Analysing the test results

The analysis of test results is crucial for making data-driven decisions to improve performance. In analysing the results the teacher must find out how many pupils missed each item. The teacher will then use this information to identify the trouble spots – those items missed by a large number of pupils in class, Guskey [12]. In reviewing these results the teacher must first consider the quality of the item or the criterion. This entails checking the clarity of the items to see whether they were not misinterpreted by the pupils In the event that the test items are not faulty the next thing is for the teacher to check the teaching methods used. This is particularly important if a large number of students have failed to answer a particular question as it clearly points to a problem with teaching. It means that the teaching strategy just didn't work Guskey, [5].

This kind of analysis helps the teacher to improve instruction and in the process improve academic performance. This is in line with the research questions raised in this study.

- **Teachers as users of test results**

Teachers are by far the biggest users of test results. This is so because they are responsible for ensuring that every child in their class succeeds. Every day they must ask these questions: (1) Are my teaching strategies working? (2) What do these students need help with? (3) What do the students know and what can they apply? Marsh *et al*. [13]. The answers to these questions lie in a test whose results have been analysed.

Teachers should form professional learning committees (PLCs) to review and interpret data for the purposes of improving student achievement. The PLCs will be made up of teachers from various grades. The groups will work together to formulate intervention strategies for improving the performance of their students in the whole school, Barneveld[13]. The formation of PLCs will encourage closer co-operation among the teachers and in the process enable them to share ideas.

- **School Management as users of test results**

School management is responsible for the overall performance of the school. It is school management that should account for the performance of the school to other stakeholders. School managers are expected to use test results to hold teachers accountable for the performance of their pupils. School leaders need to ask themselves the following questions: Are teachers and instructional strategies in given areas producing results? (2) What kind of professional development will help? How shall we spend resources in support of instruction? Protheroe[18]. Again the answers to these questions lie in analysing assessment data like the classroom tests.

- **Parents as users of test results**

Assessment is communication, (GDE Assessment Guidelines) Parents wish to be informed of their children's' educational progress. The link between home and school will be strengthened if parents are informed about their children's performance. When teachers and parents come together they combine efforts to encourage and help children [5]. With the availability of analysed test results at his disposal, the teacher is well armed to give a parent a vivid picture of the child's performance. This makes it easy to involve parents in formulating intervention strategies to improve performance.

The use of analysed test results should not be confined to the teacher only otherwise the intervention strategies might be narrow, inadequate and ineffective. It is therefore important that teachers, in the spirit of collegiality, co-operate in designing better teaching methods and strategies. In this modern world, a parent has become a teacher. For this reason the parent has to be informed about the progress of his child and also be involved in all efforts to improve academic performance.

RESEARCH METHODOLOGY

This study used mixed research methodology. Both the qualitative and the quantitative research approaches were used. To capture quantitative data, questionnaires were used and interviews and observations were used to capture qualitative data. Purposive sampling was used to identify participants. A set criterion of performance at Grade seven levels over the years. Top five and bottom and bottom five primary schools in terms of pass rate in the district were identified giving a total of ten schools. Interviews and observations were also carried out so as to capture information from informants in their natural settings.

The target population was the teachers of grades 4, 5, 6 and 7 in schools in the Khami District of Bulawayo Metropolitan Province and a key informant from the same district office. According to the Khami district officials there are 27 primary schools in the district with a population of about 500 teachers. Ten primary schools in the Khami District made up the sample representing all the schools in the district. Purposive sampling was used to choose the schools. The schools were grouped as, 'performing' and 'non-performing'. The respondents were teachers and the Better Schools Programme of Zimbabwe (BSPZ) co-ordinator as a key informant from the district office. The schools were categorized on the basis of their performance in the national grade 7 tests in 2013 and 2014. Five schools were the best performers according to the 2013 and 2014 grade 7 results while the other five were the worst performers in the same period.

The sample consisted of 90 grade 4-7 teachers out of a population of about 500 teachers. The sample was, therefore, made up of 18% of the teachers in Khami District. Cohen and Manion [19] indicate that 20% is the minimum sample size which is reliable and accurately represents any given population. The percentage of teachers selected for this study was expected to make it possible to generate the results of the target population although the sample was 2% less than the minimum. This sample represented all the grade 4-7 teachers in the district. The teachers were purposively selected since the study was concerned with specific grades. At school level, school heads were requested to include all participating grades regardless of their level of performance as individual classes.

DATA PRESENTATION, RESULT ANALYSIS AND DISCUSSION

In this section, data regarding the use of classroom tests to improve academic performance in the Bulawayo Metropolitan Province's Khami District is

presented, analysed and discussed. The presentation has been arranged according to the stated objectives of the

study.

Table-4.1: Educational qualifications of respondents. N=90

	Academic Qualifications					Professional Qualifications		
	'O' Level	'A' Level	BEd. Degree	MEd. Degree	Total	Certificate In Education	Diploma In Education	Total
Frequency	48	4	32	6	90	32	58	90
Percentage	53.3	4.4	35.6	6.7	100	35.6	64.4	100

Table 4.1 shows that, in academic qualifications the majority of the respondents were Ordinary Level ('O') holders (53.3%), while 35.6% of the respondents were holders of Bachelor of Education (BEd) degree. Those respondents with a Master's in Education (MEd) degree were 6.7%. Only 4.4% were in possession of Advanced ("A") Level. These were highest academic qualifications.

Table 4.1 indicates that, as far as professional qualification is concerned 64.4% of the respondents were holders of the Diploma in Education while 35.6% were in possession of the Certificate in Education. This

could mean that, all the respondents (90) obtained either the Certificate in Education or Diploma in Education before improving their academic qualifications to degree level. This was the link between academic and professional qualifications.

While those respondents with degrees were not in the majority, it was expected that their high qualification could have a bearing on the results of the study. Most teachers do not have training on how to draw meaning from data [13]. Teachers with degree qualifications were expected to provide guidance on the use of data to improve academic performance.

Table-4.2: Classification of respondents by teaching experience. N=90

Length of service	Frequency	Percentage
Less than 1 year	-	-
1-2 years	-	-
3-4 years	-	-
5-6 years	5	5.6
7-8 years	6	6.6
9-10 years	6	6.6
0ver 10 years	73	80.2
Total	90	100

Table 4.2 shows that, 80.2% of the respondents had more than 10 years teaching experience. The 7-8 years, and 9-10 years categories consisted of 6.6% of the respondents each. Those in the 5-6 years range were 5.6%.

This table shows that, most respondents had a long teaching experience. This was bound to impact on the results of the study as experience general meant better skills. Veteran teachers should induct new teachers in the use of data to make decisions, Barneveld [13].

Table-4.3: How teachers analyse data on classroom tests

F = Frequency , P = Percentage		Never	Sometimes	Always	Total
(a)	Calculation of the percentage pass rate of the class in every test.	F:0	0	90	90
		P: 0	0	100	100
(b)	Calculation of the average pass in every test.	F: 0	0	90	90
		P: 0	0	100	100
(c)	Calculation of the median score of test results	F: 90	0	0	90
		P: 100	0	0	100
(d)	Calculation of the mode of the test results.	F:90	0	0	90
		P: 100	0	0	100
(e)	Disaggregating the test marks using the grade 7 national level descriptor 1-9	F: 76	14	90	90
		P: 84.6	15.4	100	100
(f)	Conducting a diagnostic analysis in every test.	F: 88	2	0	90
		P: 97%	3	0	100

- **Calculating the pass rate**

On calculation of the percentage pass rate of class for tests, all respondents (100%), indicated that they do calculate the pass rate. Calculating the pass rate makes it easy to tell the number of pupils who passed and those who failed. This information could enable the teacher to determine the extent to which learning objectives have been achieved. When less than 50% pupils have passed that meant the learning objectives were not adequately achieved, therefore the teacher could need to plan some remedial work to redress the situation. This might result in improved academic performance.

- **Calculating the average pass mark**

One hundred per cent of the respondents stated that they calculated the average pass mark in every test. Calculating the average pass mark or the mean, immediately gives the teacher information on whether the class passed or failed the test. More than that, it shows the quality of the passes. Considering that 50% is the pass mark, an average of 55% might be considered to be satisfactory, an average of 80% might be considered to be excellent while anything below 50% will be an overall fail for the class, hence a cause for concern.

On the other hand the average pass mark shows how difficult or easy a particular test was, for an example, an average of 28% means the test was difficult as it indicates that pupils obtained very low marks. This would be valuable information as it would help the teacher to come out with some appropriate intervention strategies to improve academic performance. Urdan, 2010 observes the following advantages of the average (mean); it can be calculated to the exact mark, it uses all data and it can be calculated in further statistical calculations.

However, the average or mean can be misleading if there is an abnormally high or low value, for example,

$2+18 +23 +74 = 127 = 31.75\%$ (Mean is 31,75%)
$\qquad\qquad\qquad\qquad \div 4$

$0+12+18+23= 53 = 13.25\%$ (Mean is 13,25%)
$\qquad\qquad\qquad \div 4$

In this case, zero and 74 are extremes that have given a different picture on the average performance of those who produced those marks. The difference is a massive 18.5%. Be that as it may, the advantage of the average still outweighs its disadvantages.

- **Calculating the median of test results**

Table 4.3 indicates that 100% of the respondents never calculated the median score of their test results. The implication here is that respondents prefer to use the mean when analysing their test results [6].

The advantages of the median are that; it is simple to understand, it is unaffected by the abnormally high or low values, it is a characteristic of a normal group and sometimes represents an actual number of the group, e.g. a pupil with a median mark can be identified.

The disadvantage of the median is that its use is limited as it cannot be used in further statistical calculations.

Nonetheless, teachers can use the median to counter the distortions that might be reflected in the mean.

Example:
$100+100+95 +90+85+85+85+80+75+75+0+0+0=870$
Mean= $870\div13 = 66.9\%$. The median in this instance is 85%.
Median = 85

This example shows that, in this instance the mean, when compared to the median, is misleading regarding the performance of the pupils. This underscores the importance of using the median to determine the performance of the pupils.

- **Calculating the mode**

One hundred percent of the respondents indicated that they "Never" use the mode to analyse the test results. The mode is often referred to as the fashionable score: it is the common score in any distribution. For example in the distribution below the mode is 11.

Score:	20	19	18	17	16	15	14	13	12	**11**	10
Frequency:	1	1	6	10	1	5	2	3	3	**12**	4

The example shows that 12 pupils got 11 marks out of 20. Those pupils have already grouped themselves.

Commenting on the measures of central tendency (mean, median and mode), Elliot *et al.* [5] states that these measures provide a good idea of how

any student has done in relation to the average score of the group. Such information helps the teacher to group pupils for remedial purposes.

- **Disaggregating test marks**

Table 4.3 shows that 84.6% of the respondents 'never' disaggregated the test marks using the grade 7

national level descriptor, while the other 15.4% did. Disaggregating test results using the level descriptor means grouping marks according to grade 7 grading for example, 0-29 being a grade nine, and 80-100 being a grade one. Grouping pupils according to this grading system enables the teacher to create ability groups which makes it easier to prescribe appropriate remedial action.

Disaggregating the results in this manner also helps the pupils to see where they are in terms of the grading system. This motivates them to improve their grades. Disaggregating test marks, might help to "…….reveal which of your student's performed *advanced proficient, basic* and below basic", in any given test, Darling Hammond [16].

- **Conducting a diagnostic analysis**
    Table 4.3 shows that 97.0% of the respondents 'Never' conducted diagnostic analysis of their test results. Only three per cent "sometimes" conducted a diagnostic analysis of their test results. This result means the majority of the teachers did not usually conduct a diagnostic analysis. A test set in line with the principles of the Bloom's Taxonomy will have low order and high order questions. A diagnostic analysis will show in which order the pupils will have done well and badly. In conducting a diagnostic analysis, the teacher is expected to record the number of pupils who got an item right or wrong. This kind of analysis works as a trouble shooter for the teacher. This is important for the formulation of effective intervention strategies. Stone *et al*. [20] in a report titled *Effective Schools, Common Practices* states that top performing schools use groups to provide additional practice focused on each child's specific learning deficiencies. These deficiencies can only be identified through a diagnostic analysis of test items.

Commenting on how the district analysed assessment data from schools, the BSPZ coordinator stated that, 'Schools write district tests at grade 6 and 7 only, every term. Test results are analysed by calculating the school's pass rate and the average performance per subject. District pass rates are then worked out. The district also disaggregates theresultsin terms of the grade, which is grade 1-9 to determine the quality of passes. This information is used to identify areas that need attention leading to staff development programmes, if funds are available.'

The co - ordinator's remarks showed that what was happening at schools in terms of analyzing results was not what happened at the district level. One clear difference was that the district disaggregated the results while, according to the findings, most of the schools did not. The other difference was that the district definitely used the data, notwithstanding lack of funds, for staff development purposes while not all sampled schools did.

Table-4.4: How teachers use data on classroom tests to improve academic performance

F = Frequency , P = Percentage		Never	Sometimes	Always	Total
(a)	Use of classroom test results to group pupils into 'no-risk' and 'pupils-at- risk'.	F: 0 P: 0	0 0	90 100	90 100
(b)	Adjusting teaching methods to accommodate remedial lessons.	F: 0 P: 0	0 0	90 100	90 100
(c)	Using the 'no-risk pupils' to assist the 'pupils-at-risk'.	F: 0 P: 0	81 90	9 10	90 100
(d)	Setting achievement targets for individual pupils.	F:87 P:96.7	3 3.3	0 0	90 100
(e)	Sharing ideas on formulating intervention strategies with colleagues.	F: 18 P: 20	56 62.2	16 17.8	90 100
(f)	Engaging with school management to discuss the performance of my class.	F: 63 P: 70	27 30	0 0	90 100
(g)	Use of the test results by school management to formulate staff development programmes.	F: 73 P: 81.1	17 18.9	0 0	90 100
(h)	Passing assessment records to the teacher taking the class in the next grade.	F: 58 P: 64.4	32 35.6	0 0	90 100
(i)	Discussing the performance of pupils with their parents.	F: 0 P: 0	66 73.3	24 26.7	90 100

- **Grouping pupils into 'no-risk- pupils' and 'pupils at risk'**
    Table 4.4 indicates that 100% of the respondents grouped their pupils according to their abilities. This is clear evidence that teachers did group their pupils for the purpose of conducting remedial lessons. Grouping pupils in this manner enables the teacher to prescribe appropriate remediation to pupils in accordance with their skills deficiency.

This is confirmed by Cavetti and Protheroe [21] when they state that assessment data helps teachers to provide tutoring or extra-help for those students who fail to master the skills taught and enrichment learning

activities for those who have mastered the skills. This can only be done when pupils have been put in ability groups.

- **Adjusting teaching methods to accommodate remedial lessons**

According to table 4.4 all respondents (100%) did adjust their teaching methods to accommodate remedial lessons. This meant that teachers were aware of the fact that changing teaching methods was an important part in improving pupil's performance.

Teaching is about using different approaches to instruction. Using a variety of instructional strategies helps the teacher to guide learners from the known to the unknown from familiar to new territory, (Gauteng Department of Education Guidelines On Teaching Methodology).To be optimally effective, correctives must be qualitatively different from the initial teaching, Guskey [12]. Teachers in this study were aware of this as shown by their response.

- **Using non- risk- pupils to assist 'pupils-at-risk' during remedial lessons**

According to research findings, 90% of the respondents 'sometimes' used 'non-risk-pupils' during remedial lessons. The 10% indicated that they 'always' did. This response showed that the use of non-risk-pupils to assist 'pupils at risk' was rarely used. By stating that they sometimes use the non-risk-pupils in remedial lessons, the 90% of the respondents implied that they could do without using this method of conducting remedial lessons.

Kleinnert and Thurlow [22] state that friendship and the development of a rich fabric of social relationships are themselves a fundamental outcome of the education process. This means the teacher can use friends to help each other improve results In other words, peer- teaching has a role to play in learning.

- **Setting achievement targets for pupils**

Table 4.4 shows that 96.7 'never' set achievements targets for their pupils. Only 3.3% sometimes set targets for their pupils. The implication here is that teachers did not challenge their pupils to stretch themselves. Setting targets for the pupils motivates them to be focused. This improves their chances of doing better academically.

The American Centre For Public Education [23] commenting on a review of high performing schools in disadvantaged communities indicated that the fundamental of high performing schools is the culture of high expectations shared by the school's principal, staff and students. A culture of high expectation needs to be inculcated in pupils. Top performing schools require students to meet higher than minimum mastery criteria on student progress tests, Stone *et al.* [20]. This can be done by setting targets higher than the pupils' level of performance.

- **Sharing ideas on intervention strategies with colleagues**

Research findings show that 62.2% of the respondents 'sometimes' shared ideas with their colleagues on intervention strategies. Those that 'always' shared ideas with their colleagues were 17.8%. Another 20% indicated that they 'never' shared ideas on intervention strategies with colleagues. Teaching is a profession that requires collegiality collaboration and co-operation. This entails sharing ideas on improving instruction and, in the process, improving academic performance. These findings showed that collegiality was not regular in the schools studied. Only 17.8% 'always' shared ideas on formulating intervention strategies. This was a small number considering the importance of this aspect.

Emphasising the importance of this kind of cooperation, Barneveld [13] states that teachers should develop learning communities focused on reviewing and interpreting data for the purpose of improving student achievement.

- **Teachers engaging with school management to discuss the performance of their class**

Seventy per cent of the respondents indicated that they did not engage with school management on the performance of their classes on a one-on-one basis. Thirty per cent indicated that they 'sometimes' engaged with management to discuss the performance of their classes. There was 0% response on the 'always' option.

In this instance, research showed that there was very limited engagement between teachers and management on pupil performance based on classroom tests.

To be successful, school leaders need to engage in conversations with teachers, using assessment data to diagnose strengths and weaknesses as well as areas in which teachers need to modify their instruction, Protheroe[18]. Cavetti and Protheroe [21] concur with this view when they state that assessment data also help teachers and principals to pinpoint objectives that either need to be covered more thoroughly or taught in a different way.

By not engaging with teachers often, regarding pupil performance in classroom tests, school management is missing out on a crucial avenue to improve pupil performance.

- **Using data on class tests to formulate staff development projects**

Table 4.4 indicates that 81.1% of the respondents said school management did not use the results of classroom tests to formulate staff

development programmes, while 18.9% indicated that school management sometimes uses classroom tests data to design staff development programmes. The 'always' option had 0%. Ignoring data from classroom tests as a tool of formulating staff development plans is detrimental toimproving academic performance. Staff development programmes go a long way in improving instruction, especially when they are based on facts. Successful use of data to drive decision - making is not random, but results form a strategic focus on specific issues [13] Staff development can help achieve this.

- **Passing assessment records to the teacher in the next grade**

Table 4.4 indicates that 64.4% of the respondents did not pass their assessment records to the next teacher while 35.6% did. This was an indication that pupil performance was not closely monitored from grade to grade. This makes it difficult to measure year-on-year achievement. Marsh [13].Passing assessment records to the next teacher ensure that no child is left behind as individual performance would be monitored in every grade.

- **Discussing the performance of pupils with their parents**

Table 4.4 shows that 73.3% of the respondents 'sometimes' discussed the performance of their pupils with parents. The other 26.7% discussed pupils' performance with parents 'all the time'. Research findings therefore show that all teachers discussed pupil performance with parents, though not all the time.

Every teacher wants the best for each pupil. Parents also want the best for their children. The results of these findings suggest all the teachers in the studied schools find it very important to involve parents in the education of their children. Galloway [14], states that when teachers maintain communication with parents they will benefit as they will be informed of some environmental factors that might influence pupil performance. A study by Stone *et al*. [20] on high performing schools showed that there was constant communication between the school and the parents. This shows that parents are assets in supporting learning, hence they should be regularly involved in finding ways and means of helping their children to improve their grades.

- **Benefits of using classroom tests data**

The teachers' responses to the structured questions were the same amongst all respondents. The teachers stated that using data on classroom tests helped them to: identify weak pupils, difficult topics, improve teaching methods as well as prescribe appropriate remediation.

The benefits that were stated by the respondents are supported by the various authors in the related literature reviewed. The findings showed that all teachers were aware of the benefits of using assessment data to improve performance. However this awareness was not clearly reflected in responses to the closed questions of the questionnaire.

- **Challenges of using data on classroom tests to improve academic performance**

In response to this question the respondents stated that, the overloaded curriculum made it almost impossible to implement effective intervention strategies. This was further aggravated by big classes which made it difficult to conduct a thorough diagnostic analysis for every classroom test. The teachers also lamented the lack of supplementary teaching and learning material specifically designed for remediation purposes. The other challenge cited by the teachers was the cumbersome task of constructing a valid and reliable test that adhered to the principles of the Bloom's Taxonomy. Such tests could not correctly measure pupil performance.

As far as the challenges mentioned above are concerned, they have become perennial problems in the education system. These are challenges that have become synonymous with classroom practice. Consequently, teachers are expected to find innovative ways of dealing with them, otherwise the whole teaching/ learning process will grind to a halt. The point is that the use of assessment data to improve academic performance should not be compromised. There should be no tricks or hidden agendas if we really want to use our assessments to help gauge our student learning, Protheroe[18].

How teachers analyse data on classroom tests
- Teachers basically analyse data on classroom tests by calculating the pass rate and average pass mark for their classes. These calculations serve to show the number of pupils who would have passed or failed the test. The calculations would also show whether or not a test was well done. All teachers used these two methods to analyse classroom tests because they are widely used as they are the most reliable. Commenting on how the district collected data from schools, the BSPZ co-ordinator emphasised that, "………the pass rate and average pass mark quickly give a clear picture on how pupils performed in a test."
- Teachers did not use the median and the mode to analyse classroom tests. These measures of central tendency help to identify the centre of distribution statistically. This contributes towards clarifying the performance of pupils in any test. Unfortunately results of this study showed that teachers were not aware of the advantages of using the median and the mode in analysing the results of a classroom test. This was compounded by the fact that the district did not use these measures either, as revealed by the interview held with the BSPZ co-ordinator.

- The majority of the teachers (84.6%) did not disaggregate the results of their classroom tests although they did so with end of term tests and external tests as required by the district office.
- Most teachers (97.0%) did not conduct a diagnostic analysis of their tests, neither did the district. Conducting a diagnostic analysis would help the teachers to know which questions were very easy and which ones were very difficult, making it easier to formulate intervention strategies.

Findings on how teachers use data on classroom tests to improve academic performance

- All the respondents used classroom tests to put their pupils into ability groups for the purpose of remediation.
- all respondents adjusted their teaching methods to accommodate remedial lessons as shown by the 100% that indicated that they "always" adjusted teaching methods to accommodate remedial lessons.
- Ninety per cent of the respondents showed that they "sometimes" used non-risk-pupils to assist the pupils at risk during remedial lessons. The remaining 10% showed that they "always" used this method, meaning that all teachers appreciated it.
- Setting achievements targets for pupils was not popular in the classroom as 96.7% of the respondents indicated that they "never" did it. This was despite the positive motivational effect it had on the pupils.
- Teachers did not always share ideas on how to improve academic performance as shown by 62.2% which indicated "sometimes" and the 20% which said "never".
- Teachers and school management did not communicate frequently to discuss the performance of pupils in classroom tests as 70%, said they 'sometimes' did, while 30% pointed out that they 'never did this.
- School management did not use data on classroom results to formulate staff development programmes as shown by a high percentage of 81.1% respondents stating "never" while 18,9% stated 'sometimes'.
- Not all teachers passed their assessment records to the next teacher all the time, as shown by the 64.4% that indicated, 'never'. The other, 35,6% 'sometimes' passed on the records,
- Those teachers did not always discuss the pupil's performance with parents as 73.3% stated that they "sometimes" engaged parents in consultation over

their children's performance. Only 26,7% stated 'always'.

Based on these findings it can be concluded that teachers' use of assessment data to improve academic performance was insufficient and not well organised. It was certainly haphazard as shown by the low percentage under "always" option and some very high percentages under the "never" option.

Findings on the impact of the use of analysed data on classroom tests to improve grade 7 results.

- Firstly, the research findings showed that there were few performing schools in the Khami District. The performance of the so-called performing schools had been an average of 79.35%, which is 0.65% below the provincial benchmark of 80% in the last five years. It was only in 2014 that all the top 5 schools were able to achieve a pass rate of above 80%. When looked at individually, only 1 out of the top 5 schools had an average pass rate of over 80% in the last five years.
- Secondly, the average pass rate for the 10 schools in the last five years was 52.3% which was a far cry from the provincial bench mark of 80%.
- Thirdly, the average year-on-year improvement of the grade 7 results was 3.6% which was small considering that the underperforming schools have consistently produced results below 40% on average.
- Lastly, there was no evidence to show that there was any school in the sample that had a holistic approach to the use of classroom data to improve grade 7 results. This was shown by the fact that no single school was able to answer 'always' on most the aspects in tables 4.3 and 4.7.

Findings on the benefits and challenges of the use of classroom tests to improve academic performance

The findings showed that all teachers were aware of the benefits and challenges of using assessment data to improve performance. This was deduced from the responses to open-ended questions in the questionnaire. However this awareness was not clearly reflected in responses to the closed questions.

QUESTIONNAIRE FOR TEACHERS

You are kindly requested that, you answer this questionnaire. The information you will provide will be treated with utmost confidentiality. The information will be used for academic purposes only.

Please tick in the appropriate box.

Question 1
Kindly circle the number with your correct response

F = Frequency , P = Percentage		Never	Sometimes	Always
(a)	Calculation of the percentage pass rate of the class in every test.	1	2	3
(b)	Calculation of the average pass in every test.	1	2	3
(c)	Calculation of the median score of test results	1	2	3
(d)	Calculation of the mode of the test results.	1	2	3
(e)	Disaggregating the test marks using the grade 7 national level descriptor 1-9	1	2	3
(f)	Conducting a diagnostic analysis in every test.	1	2	3

Question 2
Kindly circle the number with your correct response

F = Frequency , P = Percentage		Never	Sometimes	Always
(a	Use of classroom test results to group pupils into 'no-risk' and 'pupils-at- risk'.	1	2	3
(b)	Adjusting teaching methods to accommodate remedial lessons.	1	2	3
(c)	Using the 'no-risk pupils' to assist the 'pupils-at-risk'.	1	2	3
(d)	Setting achievement targets for individual pupils.	1	2	3
(e)	Sharing ideas on formulating intervention strategies with my colleagues.	1	2	3
(f)	Engaging with school management to discuss the performance of my class.	1	2	3
(g)	Use of the test results by school management to formulate staff development programmes.	1	2	3
(h)	Passing assessment records to the teacher taking the class in the next grade.	1	2	3
(i)	Discussing the performance of pupils with their parents.	1	2	3

Question 3
Briefly describe the benefits of using assessment in teaching and learning.
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Question 4
Briefly describe the challenges of using assessment data in teaching and learning
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END- OF- QUESTIONNAIRE
THANK YOU!!!

CONCLUSIONS

Based on the findings stated above it is fair and logical to make the following conclusions,

- The teachers' knowledge of the analysis of classroom tests results was limited to calculating the average pass mark of their pupils. The teachers were either ignorant of the other measures of central tendency or they did not appreciate their relevance in analysing classroom tests results or they were just not keen to use them.
- Teachers' use of assessment data to improve academic performance was insufficient and not well organised. It was certainly haphazard as shown by the low percentage under "always" option and some very high percentages under the "never" option.
- The grade 7 results of the ten schools were not influenced by the assessment data as it was evident that analysis of assessment data was not a common practice in these schools.

In a nutshell the findings clearly indicated that schools in Khami district were not effectively using data on classroom tests to improve grade 7 results, proving the null hypothesis which stated that, "Analysing data on classroom tests and using it to formulate intervention strategies to improve academic performance has no bearing on the grade 7 results." This was despite the overwhelming evidence from the literature reviewed in chapter 2 which confirmed that the use of data on classroom tests to formulate intervention strategies helps to improve academic performance.

RECOMMENDATIONS

Basing on the findings and conclusions of the study, the following recommendations are made,

- School management should closely monitor classroom assessment and use data from the assessment to formulate appropriate staff development programmes.
- Schools should develop professional learning communities focused on collecting and interpreting data for the purpose of improving academic performance.
- Schools should involve parents in matters of curriculum delivery. There should be a deliberate effort by both school management and teachers to collaborate and co-ordinate their efforts to formulate effective intervention strategies to improve academic performance.
- Teachers should be trained on the use of statistical methods to effectively analyse assessment data.
- District offices should be capacitated to enable them to effectively monitor assessment processes in schools. This capacity building process should involve providing more personnel and adequate

transport for the district for mobility purposes during supervision and monitoring visits,

- The provincial directorate should, through districts, require schools to submit analysed pupils' achievement statistics on a termly basis. A standard format that demands a detailed analysis of results from classroom assessment should be designed,
- The Ministry of Primary and Secondary Education should craft an assessment policy that emphasises the use of performance data to improve teaching and learning. If such a policy is in existence the Ministry should ensure its effective implementation in schools.

The findings of this study have exposed a lack of knowledge and commitment in the use of assessment data to improve academic performance in schools. The study recommends that further research be conducted on the overall use of data to improve school performance in all aspects of management. This will be meant to establish the extent to which schools use data to improve their effectiveness.

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