School-Based Assessment: the interface between Continuous Assessment (CASS) and the external summative examination at Grade 12 level with special focus on Mathematics and Science

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# Table of Contents

**Acknowledgements**  
xi

**Dedication**  
xii

**Abstract**  
xiii

**List of Key Words**  
xv

**List of Acronyms**  
xvi

## Chapter 1  Introduction to the Research

**Overview of the Chapter**  
1

1.1 Aims of the Research  
1

1.2 Problem Statement  
1

1.3 Rationale for the Research  
5

1.4 Limitations of the Research  
8

1.5 Conclusion  
8

## Chapter 2  Continuous Assessment in the South African Context

**Overview of the Chapter**  
10

2.1 Introduction  
10

2.1.1 The Transformative Principles  
11

2.1.2 Policies for Educational Transformation  
12

Integration  
12

Relevance  
12

Credibility and Standards  
12

Flexibility  
13

Access and Redress  
13

Portability  
13

Articulation  
13

Progression  
13

Recognition of Prior Learning  
14

Guidance of Learners  
14

Assessment in Curriculum 2005  
15
2.2 The rationale for the focus on Mathematics and Science
- Decreasing enrolment in Mathematics and Science
- Lack of qualifications of professional staff in Mathematics and Science
- Lack of skills in Mathematics and Science
- The Teaching of Science subjects in schools
- The DoE Mathematics and Science strategy

2.3 The Current Senior Certificate Examination

2.4 The Role of Umalusi in the Quality Assurance of the Senior Certificate Examination

2.5 The Role of Assessment
- The definition, purposes and objectives of Assessment
  - Definition
  - Purposes
  - Objectives
- Why Outcomes-Based Assessment?

2.5.2 Why Outcomes-Based Assessment?

2.6 The Current Status of CASS at Grade 12 level
- The Phasing-in of CASS at Grade 12 level
- The implementation of guideline documents
- Problem of CASS implementation at school and at classroom level

2.7 Conclusion

Chapter 3 Moderation and Quality Assurance of the Senior Certificate Examination

Overview of the Chapter

3.1 Introduction

3.2 Moderation and Quality Assurance of Assessment at the Senior Certificate Level
- Internal and external moderation of examination question papers
- Moderation of the CASS mark
- Verification of the CASS mark
- Monitoring the conduct of the examination, the marking process
Chapter 3  Continuous Assessment: Principles of Assessment

3.3 Fairness, Validity and Reliability as Principles of Assessment

3.4 Implementing CASS

3.5 Conclusion

Chapter 4  Continuous Assessment: Learning From Literature

4.1 Introduction

4.2 OBA and its implementation

4.3 Problems and Challenges associated with the implementation of CASS

4.4 Support to strengthen and to sustain effective implementation

4.5 To what extent are the CASS marks fair, valid and reliable?
Chapter 5  Research Design and Methodology

5.1 Introduction ................................................................................................. 115
5.2 Conceptual Framework .................................................................................. 116
  Inputs ................................................................................................................. 120
  Processes ............................................................................................................. 123
  Outputs ................................................................................................................. 124
5.3 Research Questions ......................................................................................... 125
5.4 Research Design .............................................................................................. 127
  Research Question 1 .......................................................................................... 127
  Research Question 2 .......................................................................................... 130
  Research Question 3 .......................................................................................... 131
5.5 Research Methods ........................................................................................... 132
  5.5.1 Population and Sampling ......................................................................... 132
  Sampling of subject advisors and educators ...................................................... 133
  Sampling of subject advisors through their district offices ............................ 135
  Sampling of educators through their schools .................................................... 135
  Sampling of education assessment experts ....................................................... 136
  5.5.2 Instrument development ......................................................................... 138
  Questionnaire for educators ............................................................................. 139
  Questionnaire for subject advisors .................................................................. 140
  Interview schedule ............................................................................................ 141
  Piloting of instruments ...................................................................................... 141
  5.5.3 Data Collection .......................................................................................... 141
  Educators ............................................................................................................ 142
  Subject advisors ................................................................................................. 143
  Assessment Experts ........................................................................................... 144
  5.5.4 Procedures followed in conducting the research ..................................... 144
5.6 Data Analysis .................................................................................................. 146
5.7 Conclusion ....................................................................................................... 146
Chapter 6  Results of the Research

Overview of the Chapter ................................................................. 148

6.1 Background of respondents .................................................. 148
Qualifications of educators and subject advisors ..................... 151
Teaching experience and subject advisory experience .......... 152

6.2 Problems and Challenges experienced by Grade 12 Biology,
Mathematics and Physical Science educators in the effective implementation of CASS ................................................................. 153
Lack of resources and equipment ................................................. 154
Increased workload ................................................................. 157
Lack of training and support ....................................................... 160
Negative attitude of learners ....................................................... 160
Large class sizes .................................................................. 161
Lack of commitment and skills of educators ......................... 162
Ever-changing and unclear national policies (guidelines) ........ 162

6.3 The kinds of support provided to educators to strengthen and to sustain the effective implementation of CASS? ......................................................... 163

6.3.1 Are educators familiar with the provincial/or national CASS policy? .......... 163
Which CASS policy (guideline document) is being implemented by the educators of Biology, Mathematics and Science across the six examining bodies? ......................................................... 164
Understanding of the term Continuous Assessment .............. 170
To what extent are educators and subject advisors familiar with the provincial/or the national policy (guideline) on CASS? ......................................................... 171
Effective implementation of the CASS policy ......................... 173

6.3.2 To what extent are educators trained to implement CASS? ................. 176
Duration of training ................................................................. 179
Frequency of training .............................................................. 180

6.3.3 How are educators supported to enable them to implement CASS effectively ........................................................................ 183
Chapter 7  Conclusions, Discussions and Recommendations

Overview of the Chapter .......................................................................................................................... 212

7.1 Summary of Findings .......................................................................................................................... 213

Research question 1 .................................................................................................................................. 214
Research question 2 .................................................................................................................................. 218
Research question 3 .................................................................................................................................. 224

7.2 Discussion ........................................................................................................................................ 225

Methodological reflection .......................................................................................................................... 225
Substantive reflection ................................................................................................................................. 227

7.3 Recommendations ............................................................................................................................... 230

Recommendations for educational policies and practice relating to CASS .............................. 230
Recommendations for educational practice at district and school level .............................................. 232
Recommendations for further research ................................................................................................. 233
Recommendations for further development work ................................................................................. 234
Conclusion .............................................................................................................................................. 234

References ............................................................................................................................................... 235

Appendices

A: Letter to conduct research: Subject Advisors ................................................................................. 248
B: Letter to conduct research: Educators ............................................................................................. 250
C: Questionnaire: Subject Advisors ........................................................................................................ 252
D: Questionnaire: Educators .................................................................................................................... 260
E: Interview Protocol ................................................................................................................................. 266
LIST OF TABLES

Chapter 2

Table 2.1  Pass percentage for full-time learners in Physical Science and Mathematics Higher Grade and Standard Grade for the period 2000 - 2002
21

Table 2.2  Number of African learners across the provinces who passed Mathematics and Science in 2000
27

Table 2.3  Pass rates for the Senior Certificate Examinations, 2000 - 2002
32

Table 2.4  Number of enrolled and graduate students at Universities by institution, population group and gender in 2000
33

Table 2.5  The phasing - in of CASS by provincial education departments
50

Chapter 3

Table 3.1  The benefits of using rubrics in assessment for educators and learners
83

Chapter 5

Table 5.1  Sample of subject advisors and educators through district offices and schools across the six provinces
134

Table 5.2  Number of educators and subject advisors sampled according to their location across the six provinces
135

Table 5.3  List of instruments administered in this study
139

Table 5.4  Data collection of educators according to subject and province
143

Table 5.5  Data Collection of subject advisors according to subject and province
143

Chapter 6

Table 6.1  Number of educators and subject advisors sampled according to their location
150

Table 6.2  Qualifications of educators and subject advisors
151

Table 6.3  Experience of educators and subject advisors in their profession
152
Table 6.4  Educators and subject advisors response to problems and challenges experienced by educators

Table 6.5  Educators with insufficient resources to implement CASS according to their location

Table 6.6  Educators response on resources needed according to the location of the school

Table 6.7  Subject Advisors response on resources needed according to the location of the district

Table 6.8  Problems that impact on the effective implementation of CASS as reported by educators and subject advisors

Table 6.9  Implementation of provincial / or national CASS guideline documents as reported by educators and subject advisors across the six provinces

Table 6.10  Implementation of provincial / or national CASS guideline documents as reported by educators and subject advisors according to location

Table 6.11  Variation between the national guideline and the Eastern Cape provincial guideline document for Mathematics

Table 6.12  Comments by some of the subject advisors on the differences between the national guidelines and the provincial guidelines on CASS

Table 6.13  Educator’s and subject advisor’s familiarity with the provincial / or national CASS guideline

Table 6.14  Subject advisor’s perception of whether educators understand the CASS guidelines in their subject

Table 6.15  Number of educators that are able to implement CASS effectively as reported by subject advisors

Table 6.16  Provincial analysis of training provided to educators

Table 6.17  Training provided to educators according to the location of schools and districts

Table 6.18  Duration of training across the six provinces

Table 6.19  Cross - tabulation between the location of schools and the duration of training as reported by educators
Table 6.20  Frequency of training as reported by educators and subject advisors according to the location of schools and districts  182
Table 6.21  Support received by educators to implement CASS as reported by educators and subject advisors  184
Table 6.22  Cross - tabulation between the frequency of support and the subjects as reported by educators  184
Table 6.23  Cross - tabulation between the frequency of support and the location of schools as reported by educators  185
Table 6.24  Types of support provided to educators according to the province as reported by educators  187
Table 6.25  Types of support provided to educators as reported by educators and subject advisors according to the location of schools and districts  188
Table 6.26  Responses of educators and subject advisors indicating whether the Grade 12 CASS marks are fair and valid  194
Table 6.27  Responses of educators and subject advisors indicating whether the Grade 12 CASS marks are fair and valid according to the location of schools and districts  195
Table 6.28  Measures taken by subject advisors to ensure the validity of the CASS marks according to provinces  202
Table 6.29  Measures taken by Subject Advisors to ensure the validity of the CASS marks according to the location of the districts  202
Table 6.30  Number of schools in each province whose raw CASS marks show a significant deviation from the adjusted examination marks for the 2002 Senior Certificate examination  205
LIST OF FIGURES

Chapter 2

Figure 2.1 The overall pass rate in Mathematics, Biology and Physical Science compared to other popular Grade 12 subjects for 2001 23
Figure 2.2 The diminishing number of Scientists by age 24
Figure 2.3 Scientific Publication by race for the period 1990 - 1998 25

Chapter 3

Figure 3.1 Diagrammatic graphical representation of linear transformation of the CASS mark for a specific subject at a specific school 70
Figure 3.2 Calculation of the Grade 12 examination results 74
Figure 3.3 Assessing a portfolio against clear criteria and performance standards 82

Chapter 5

Figure 5.1 Input, Process and Output Model 119
Figure 5.2 Procedures followed in conducting the research 145
My sincere thanks and appreciation goes to my supervisor, Professor Sarah Howie for her guidance, encouragement and motivation.

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We are guilty of many errors
And many faults
But our worst crime is abandoning the children
Neglecting the fountain of life
Many of the things we need
Can wait,
The child cannot.
Right now is the time his bones are being formed,
His blood is being made
And his senses are being developed.
To him we cannot answer: Tomorrow
His name is today.

(Gabriel Mistral)

To my children
Jeremy, Jared and Santhuri
In 2000, the Minister of Education, Professor Kader Asmal announced that all learners exiting the Further Education and Training band as from 2001 must accumulate marks in the subjects offered at Grade 12 through a process of Continuous assessment (CASS) (DoE, 2001d).

Apart from indicating the value of CASS to the external summative component in the ratio of 25% for CASS and 75% for the summative examination, there were and there still is no other policy to regulate the conduct of CASS at Grade 12 level. The situation is worsened by the non-preparation of educators to cope with the challenges of CASS implementation.

This study focuses on the implementation of CASS in Mathematics and Science since there is a body of firm evidence, which indicates that, the results in Mathematics and Science in South Africa is not very good. The TIMSS-R study conducted in 1998/1999 indicates that South African learners performed poorly in Mathematics and Science when compared to other participating countries (Howie, 2001). Since it has been established that continuous assessment conducted in a formative manner in subjects such as Mathematics and Science can lead to improved academic performance (Black & Wiliam, 1998), it is essential that attention be given, and initiatives taken to improve the quality of assessment in these critical subjects.

In the analysis of the 2001 Senior Certificate examination, it became evident that the CASS marks of learners in many instances were not valid (SAFCERT, 2000a). To address the concern of inflated CASS marks, Umalusi resorted to the use of statistical moderation to ensure that the CASS marks do not deviate drastically from the examination marks of learners.

This predominantly quantitative study makes use of surveys to gather data on the problems and challenges experienced by Grade 12 educators in the effective implementation of CASS and the kinds of support provided to educators to strengthen and to sustain the effective implementation of CASS in the classroom.
In addition, the study seeks to examine to what extent the Grade 12 CASS marks are fair, valid and reliable.

Data was collected from a non-random sample of 21 subject advisors and 60 educators of Mathematics, Biology and Physical Science across six provinces namely, Eastern Cape, Northern Cape, Limpopo, KwaZulu-Natal, Gauteng and Mpumalanga and across all locations (rural, township and urban). Individual interviews were also conducted with four experts on CASS from national, provincial and district levels and an official from Umalusi.

It is apt to end this abstract by indicating that, “our education system has been subjected to many far-reaching initiatives which, whilst taken in reaction to concerns about existing practices, have been based on little evidence about their potential to meet those concerns. In the study of formative assessment there can be seen, for once, firm evidence that indicates clearly a direction for change, which could improve standards of learning. Our plea is that national policy will grasp this opportunity and give a lead in this direction” (Black & Wiliam, 1998).
List of Key Words

Continuous assessment
Formative assessment
Summative assessment
Educator
Learner
Fairness
Reliability
 Validity
Statistical moderation
Portfolio
Assessment criteria
<table>
<thead>
<tr>
<th>Acronym</th>
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<tbody>
<tr>
<td>ABET</td>
<td>Adult Basic Education and Training</td>
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<tr>
<td>C2005</td>
<td>Curriculum 2005</td>
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<tr>
<td>CASS</td>
<td>Continuous Assessment</td>
</tr>
<tr>
<td>CHE</td>
<td>Council for Higher Education</td>
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<tr>
<td>DET</td>
<td>Department of Education and Training</td>
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<tr>
<td>DoE</td>
<td>Department of Education</td>
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<tr>
<td>EDS</td>
<td>Educator Development and Support</td>
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<td>FET</td>
<td>Further Education and Training</td>
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<td>FETC</td>
<td>Further Education and Training Certificate</td>
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<tr>
<td>HE</td>
<td>Higher Education</td>
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<td>HG</td>
<td>Higher Grade</td>
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<tr>
<td>IEB</td>
<td>Independent Examinations Board</td>
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<td>IPEC</td>
<td>Inter-provincial Examinations Committee</td>
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<tr>
<td>IPO</td>
<td>Input - Process - Output</td>
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<td>NAPTOSA</td>
<td>National Professional Teachers Organisation of South Africa</td>
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<td>NCS</td>
<td>National Curriculum Statements</td>
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<td>NFLP</td>
<td>National Forum for Learner Performance</td>
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<td>National Qualifications Framework</td>
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<td>OBE</td>
<td>Outcomes-Based Education</td>
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<td>OBA</td>
<td>Outcomes-Based Assessment</td>
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<tr>
<td>PALCs</td>
<td>Public Adult Learning Centers</td>
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<td>PSD</td>
<td>Personal and Social Development</td>
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<td>SAFCERT</td>
<td>South African Certification Council</td>
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<td>SADTU</td>
<td>South African Democratic Teachers Union</td>
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<td>SAQA</td>
<td>South African Qualifications Authority</td>
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<td>SASA</td>
<td>South African Schools Act</td>
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<td>SBA</td>
<td>School-Based Assessment</td>
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<td>SG</td>
<td>Standard Grade</td>
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<td>SRN</td>
<td>School Register of Needs</td>
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<td>United Kingdom</td>
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