

**THE LOCALISATION OF CAMBRIDGE SCHOOL
EXAMINATIONS AS A QUALITY ASSURANCE
MEASURE**

A CASE OF BOTSWANA

**A presentation Paper for the AEAA Conference in Cape
Town Town Republic of South Africa 25th to 29th August
2003**

By Augustines Utlwang

**Examinations Research and Testing Division
Autlwang@gov.bw**

Introduction

This research paper is intended to show how the localisation of the Cambridge Overseas School Certificate (COSC) to Botswana General Certificate of Secondary Education (BGCSE) is a quality assurance measure to Botswana's education system. It will explore the set-up and philosophy of Botswana's education system in relation to localization. It will look at the reasons for localization in Botswana and their overall significance to quality assurance in assessment and the education system at large. Thirdly the paper will analyse the views and opinions of the stakeholders concerning the quality of the localized examination, namely the BGCSE. Lastly the paper will discuss the impact of localization on further education and the world of work.

Background

The Botswana Ministry of Education in partnership with the University of Cambridge Local Examination Syndicate started the localisation of the Cambridge School Certificate Examinations around 1993 (prior to the release of the recommendation to do so by the on-going National Commission on Education). The localisation programme was later to respond to recommendation 50 paragraphs 5.1.10 of the Revised National Policy on Education (RNPE) Government Paper No. 2 of 1994, which recommended localisation of the senior secondary examinations.

The National Commissions on Education spurned the period from independence to the present, bringing tremendous changes in the education system. The RNPE was the second of the National Commissions instituted to review and recommend changes in the education system. The major aim of such changes was to instill quality into the system.

The RNPE embraced localisation of COSC as the way forward. It was intended to make education in Botswana a phenomenon able to withstand international challenges such as global competition and the appraisal of human co-existence.

In order for an educational organization to mature and embrace quality it has to define, implement and manage an appropriate assessment model (Nitko, 1998 p 3). It is these overwhelming expectations and the resulting dynamism that need to be effectively managed and channeled in a quality-realizing manner. Quality is such a elusive phenomenon “it is a characteristic that is more or less easily recognised when it is present” (Murimba, 2002 p 1).

Currently the Botswana education system can be divided into levels by means of the national assessment programmes as follows:

The Standard Four Attainment Test	administered after four years of lower primary education, meant to measure the level of numeracy and literacy
The Primary School Leaving Examination	diagnostic and placement examination to Junior Certificate. It is administered after 7 years of primary education
The Botswana Junior Certificate Examination	a selection examination to the Botswana General Certificate of Secondary Education. It comes 3 years after primary education.
The Botswana General Certificate of Secondary Education	an entry qualification to University and other post-secondary Education institutions of higher learning. It takes 2 years of schooling to qualify to sit for this examination after completing Junior Certificate.

This overview of the levels of assessment is given in order to place the BGCSE in its correct perspective in relation to other local examinations.

Statement of the Problem

The Government's and the nation's aspirations were to desist from producing intelligentsia with only classical and traditional theory oriented approaches to solving problems. Emphasis was on 'developing qualities and skills needed for the world of

work' (Botswana Government RNPE et al p 5). Did the localisation of Cambridge take into consideration the development of practical skills in its programme? If so did such a move add some quality to the education system as a whole? **Why should localisation be regarded as a measure of quality?** What indicators in the localised examination can be used for purposes of measuring the quality of education. What was lacking in the previous national examination (COSC) that the current examination addresses more effectively? Quality can broadly be measured in terms of economic, social, political and educational benefits (Marope, 2002 p 3). These are the indicators that measure basic human values and needs.

In his paper presented at the SADC Policy Forum in Namibia, the Permanent Secretary in the Ministry of Education mentioned one reason for localisation as “the need for the country to come-up with a credible national examination that would not be found wanting in terms of standards and international acceptability” (Ramatsui, 2002 p 4). The philosophy of Education in Botswana sought to see a more practical and relevant education system and one that could better address local needs.

There are many other reasons that could be advanced for such localisation most of which indicate improvements in educational quality as their ultimate goal.

Localisation was meant to prepare the nation for a practical approach to learning. Such an approach could move the country from an agro-based economy to a technologically and industrially advanced one. BGCSE was preferred because it is a subject-based examination while COSC is a group subject examination. A group examination aggregates all the subject grades and awards a single grade as first class, second class, third class or General Certificate of Secondary Education (GCE). Anything below a GCE would be a fail. COSC places much emphasis on high performance in the English Language.

In making English Language an overriding subject the COSC examination downplays the performance of students in all other subjects. If the results of an examination that was taken in a subject based examination are used for selection to higher education, some potentially high ability students are left out only because of their low performance in English.

In a subject-based examination like the BGCSE each subject grade is independent of the others. The BGCSE's results leave each stakeholder who would like to select students to look at the most suitable subjects for particular use. It does not narrow the selection criteria to a single overall grade. The quality of the BGCSE assessment and qualifications is assured by the ease with which they can be understood and used.

The localisation of national examinations has a lot of benefits in professional terms for the local human resource in education. Such a development involves the imparting of skills to various stakeholders. A lot of the psychometric skills that were previously held by the patron assessment institution were later transferred to the local professional assessment body and related institutions at an affordable cost. Some of the skills that were imparted to local officers are very vital to the dynamism of the national education system.

No system can exist without standards that can measure and sustain it.

Such standards are formulated by local professional officers who produce benchmarks for future reference.

Localisation of national examinations is also beneficial because of the ease with which relevant issues can be included in the syllabus content. Emerging issues of concern such as HIV/AIDS, environmental degradation, gender equality, moral degradation, poverty, low productivity, religious fundamentalism, crime and violence can either be infused across subjects or serve as a base for introducing new subject areas.

Localisation can also reduce expenses in running national examinations and facilitate employment creation in the examination administration sector.

It is clear from the envisaged expectations of the benefits of localization that there is a problem that needs to be addressed. Can all these cherished notions be realised through localisation without compromising the quality of the education system?

Research Design

A survey research design was used in this study. It is a research study “that relies on people’s responses to questions” (Walizer and Wienir, 1978 p 1). Specifically, it is a cross-sectional survey. This occurs when “surveys are designed to collect data from a sample of universe at a particular point in time for the purpose of describing or explaining the behaviour of members of the universe at that time” (Pretorius 1983 p 36). Such a design is appropriate in this particular case because a very limited space of time has passed after the first national examinations were delivered to schools. Research Questionnaires were largely used as data collection instruments. Three types of questionnaires were used, namely teacher’s questionnaires, admissions agencies’ questionnaires and employer’s questionnaires.

A total of thirty-six teachers from eight senior secondary schools were used in the study. These were selected randomly throughout the country from South to North. Each teacher who was teaching one of the localised subjects was given a questionnaire to complete. The questions ranged from interpretation of content, question papers, examination reports and the comprehensiveness and use of results. These would establish the indicators of quality for the localisation programme.

The centralized nature of admission operations to higher learning in Botswana made it impossible to have a sizeable number of agencies that undertake this job. Three main admission agencies were used since they cater for large numbers of students. A group questionnaire was used where a number of people who are involved in the admission of students discussed each of the questions and then completed the form.

A total of 11 employers completed a questionnaire that was meant to collect data on the students who sat for BGCSE examinations in 2000, 2001 and 2002. This is the period during which 21 subjects were fully localised and able to produce examination papers for schools. Such companies are very big and employ a large number of BGCSE school leavers.

Data Analysis

Data analysis was carried-out on SPSS. Frequency distributions were produced. Percentages of the total responses were also produced and these appear in tables 1, 2 and 3. Percentages are used as statistical indicators because they are easy to understand.

Table 1 Data Analysis for the School Questionnaire

SYLLABUSES			
Questions for a variety of assessment syllabuses	Responses		
	No	Yes but needs improvement	Yes
Is assessment syllabus user friendly?	5%	75%	20%
Does it consider cultural and economic needs?	5%	67%	28%
Should teachers be trained more than once to interpret the syllabus correctly?	38%	53%	9%

QUESTION PAPERS			
Do examination papers match content?	0%	84%	16%
Are the questions simple and clear?	8%	9%	83%
Are diagrams and graphs complete?	5%	48%	47%
EXAMINATION RESULTS			
Do results inform schools sufficiently?	23%	39%	38%
Can results be used by the school?	13%	20%	67%
Does the school ask for clarification of the results from ERTD?	49%	0%	51%

NB The responses for the first, the second, the third and the ninth questions were changed for the purpose of data processing they were not 'no' 'yes but need improvement' and 'yes' as shown in Table 1.

Table 2 Data Analysis for the Questionnaire for Institutions that Enrol Students For Higher Education

1 Are the results of BGCSE simple to understand?			
They are difficult	They not difficult	They are quite simple	They are very simple
33.33%	33.33%	0%	33.33%
2 When selecting students for admission into different study programmes to what extent do you make changes to the results			
Make many changes	Make very few changes	Use as they are but changes are needed	Use them as they are with no changes
66.66%	0%	0%	33.33%
3 Do you think they should continue to be used as criteria for admission?			
They should not be used at all.	They should be used with other qualifications or aptitude indicators	They should be used in addition to other qualifications	They are the most important indicator for future performance
0%	0%	0%	100%
4 Do you think stakeholders should be consulted when designing the format of the BGCSE examination results?			
They should not be consulted	They should be informed	They should be consulted	They should take part in the whole process
0%	0%	33.33%	66.66%
5 Is there some relationship between the BGCSE subjects and courses offered by institutions of higher learning in Botswana?			

There is no relationship	There is some relationship	The relationship is strong	The relationship is very strong
0%	66.66%	33.33%	0%

Table 3

1 Do you have any employees who completed Botswana General Certificate of Secondary Education in any of the years 2000, 2001 and 2002?		
Yes		No
If yes, how do such employees manage to do their?		
They do the work with some difficulty	They do the work with ease	They do the work very easily
0%	82%	18%
2 How knowledgeable of their work are such workers?		
Well	Very well	Excellent
55%	27%	18%
3 How eager are they to learn about new ideas?		
Little enthusiasm	Much enthusiasm	Very much enthusiastic

18%	55%	27%
4 Are such workers able to work as a team with other employees?		
With difficult	Easily	Very easily
0	64	36
5 How productive are these employees?		
Low productivity	Average productivity	High productivity
0	73	27
6 Do they have good ideas that could result in the improvement of the company operations?		
None to very little ideas	Some ideas	Very many ideas
9	55	36
7 How often do they use their discretion?		
Seldom	Often	Always, where it is appropriate to do so
18	46	36
8 Do you think these workers have potential for development in their work?		
Not much	Much	Very much
0	55	45
9 How do you overall rate their performance?		
Low	Average	High
0	64	36

Discussion

Three main issues were addressed in the teacher's questionnaire. These are, assessment syllabuses, question papers and examination results. Ideas emanating from this questionnaire are as follows:

- whether the new assessment syllabuses are more user friendly than the old ones
- whether the syllabuses take into consideration cultural values and economic needs of the local people
- how often teachers need to be trained to correctly interpret the objectives in the new syllabus.

Responses for the user friendliness of the syllabuses show that 75% answered yes but indicated that these syllabuses needed to be improved. Even without the indicated improvements teachers felt that they were clearer than the COSC assessment syllabuses that they replaced. Only 5% of the teachers were of the opinion that there were no differences between the old and the new syllabuses. The remaining 20% felt that the new syllabuses more user-friendly and clearer than the old syllabuses.

Concerning the assessment syllabuses taking into consideration the cultural values and economic needs of the local people, 67% felt that they do but there is still need for improvement. 5% indicated that there is no difference between the BGCSE assessment syllabuses and the COSC ones. The remaining 28% of the teachers said the assessment syllabuses fully took the cultural and economic needs of the local people into consideration.

The question which sought to find out how often teachers should be trained was meant to show whether the training that has already been done is sufficient for them to deliver the learning outcomes efficiently. If they need more training they probably do not understand the syllabuses, in which case they may not be in a position to judge the quality of the outcomes properly. 53% felt that teachers need training twice a year. 38% felt that teachers need training only once. Only 9% felt that teachers need training three times a year. It is clear that teachers at least understand the content domain and are in a position to assess the content validity of the examination papers. A rigorous pre-service and a normal in-service training in the interpretation of the relevant syllabus objectives will sufficiently address the needs of teachers in understanding the content.

The second indicators from the teacher questionnaire that generated some questions to be addressed were the question papers. There were also three questions that focussed on the following ideas:

- match between examination questions and syllabus content
- the ease with which question papers can be understood by the teachers and students

-completeness of diagrams and graphs in the question papers

In response to the question concerning the item content congruency which sought to establish the content validity of the question papers, 84% felt that examination questions match the syllabus objectives. This group were of the view that, although the papers match the syllabus content they still need to be improved to increase other forms of validity. 16% of the teachers felt that there is complete content validity and there is no need for improvement. None of the teachers felt that there was no content validity in the question papers. For the questions that sought to find out whether the items were sufficiently simple to be understood by the teachers and the students, 83% of the teachers felt that the questions were easy enough. In response to the question that wanted to find out whether the diagrams and graphs were complete, a majority 48% of the teachers said the diagrams were complete but there were other things that need to be improved in some questions. These include the quality of cartography and symbols used particularly in grid reference maps.

The third indicators were sought concerning the quality of national examination results that are sent to schools. The questions were based on the following ideas:

- whether the results inform schools sufficiently
- whether the result are used by schools
- whether schools often need some clarification on such results.

Those who concurred with the idea that results informed schools and that some improvements need to be made to them, constituted 39%. Meanwhile 38% felt that the results informed schools sufficiently and hence there was no need for improvement. The remaining 23% felt that the results do not inform schools sufficiently.

On the question that sought to find out whether the results are used by schools 67% said that the results are so clear that they need no explanation from the examination body to the schools. If less assistance to interpret the examination results is sought then it could be assumed that they are amply comprehended.

When the question of clarification was pursued 49% felt that there was need for clarification of results. They thought the quality of BGCSE is enhanced by the easy with which people understand the examination results. On the contrary 51% thought that there was need for clarification of results regardless of the extent of understanding that the stakeholders have attained.

It is clear from the foregoing discussion that within the teaching force indicators show quite a positive picture of the BGCSE. Even at this early stage, of the examination quality is gradually manifesting itself.

Questionnaires were also distributed to admissions agencies, training schools and institutions of higher learning. These were meant to solicit information about the quality of the BGCSE result reports. Questions were framed around the following ideas:

- clarity of examination results
- to what extent admissions agencies and institutions of higher learning make changes to results before using them
- whether results should continue to be used as criteria for admission
- whether stakeholder institutions should be consulted when designing the format of the results
- whether there is a relationship between the BGCSE subjects and those offered by the institutions of higher learning in Botswana

Generally, both the institutions of higher learning and admissions agencies were of mixed opinion. While 33.3% of the stakeholders thought the examinations results were very simple to understand, analyse and interpret, another third felt that they were difficult. A similar percentage of respondents were of the opinion that some improvements could be made to them.

The institutions revealed the fact that because of the explicit and informative nature of the results they do build elaborate criteria for admission, which they use in addition to such results. This is caused by the fact that they built their admission criteria before

the localisation programme. They fit the results into their original criteria. They introduced a point system into the individual grades of the BGCSE results. The point system is a COSC system where subject grades are given numerical points with the highest grade having the most points.

These points are used together with the aggregate grade to qualify a student for selection to an institution of higher learning. It is clear that for purposes of selection BGCSE strengthens its criteria by using some of the COSC criteria because admission agencies and institutions of higher learning are well seasoned in the old criteria. It was easy to use the COSC type of admission criteria because it was based on the aggregate score in a group examination. Traditionally, in a single subject examination like the BGCSE it is not easy to build exclusive admissions criteria because each subject is independent of another.

Where a programme of study needs one more student to fill the remaining enrolment space it becomes difficult to select from a large group if the remaining ones have similar grades. The addition of numerical points can produce an individual with more points than the others. The quality of the BGCSE admissions criteria for many institutions is more recognised than the COSC one because it is flexible and can be used with and in combination with others. This idea is supported by the two thirds of the respondents that supported the suggestion that changes to the admission criteria are inevitable and should always be made where it is possible to do so.

All the respondents felt that the results of BGCSE should continue to be used to build the admissions criteria. They thought these results were the most important indicators of achievement. This is so inspite of the fact that some of the COSC results features are used to augment such an admissions criteria.

The majority of the respondents constituting two thirds felt that the designing of the result format should have been done with the participation of all the stakeholders. The remaining 33.33% said that it was the prerogative of the Examinations Research and Testing Division to design the examinations results.

It was generally felt by the respondents that the subjects introduced in the BGCSE are very much related to the courses offered by most institutions of higher learning.

Generally people felt that COSC courses did not relate well with the courses pursued by institutions of higher learning. COSC is an international examination and hence was not designed with local conditions, aspiration and consideration in mind.

Questionnaires for the employers were meant to collect data on the performance of the students who instead of proceeding to higher education institutions for one reason or another get employed. Several questions were formulated for this questionnaire.

These were compiled from the following ideas:

- how the workers manage to do their work
- how knowledgeable of their work the workers are
- how eager the workers are to learn new ideas about their work
- whether workers are able to work as a team with other employees
- the productivity of the employees
- whether they have good ideas that could help improve the company operations
- how often such employees use their discretion
- whether such workers have potential for development
- how the employees can generally be graded.

Employers thought employees who completed BGCSE do their work with ease. Their agreement on this idea is shown by 82% who chose this response. None of the employers chose the option that suggested that these employees would do their work with some difficulty. This is further underscored by the responses to the question concerning the workers' knowledge of their work. 55% thought the workers knew their work well. 18% of the respondents thought the workers have an excellent knowledge of their work.

The dynamism of these workers was proved by 55% of the respondents who felt that these workers were enthusiastic to learn new ideas concerning the work.

64% of the responses supported the idea that the workers could easily work as a team. Teamwork is encouraged during practicals so that individuals produced by the education system do not think in isolation but should also take into consideration the views and suggestions of other people.

In general the respondents thought these individuals were quite productive as shown by 73% who ranked them as being average while 27% put them at high productivity level. Certainly, if these employees are to be productive they would also have good ideas that could facilitate progress in their respective working places as shown by the 55% of the responses supporting the fact that they have some good ideas.

Although 46% felt that these workers often use their discretion when it is appropriate, 18% said that they always do so. A majority of 55% supported the view that these workers have much potential for development in their work and 64% of them graded their performance as average.

It should be bone in mind that these workers are fairly new in their employment and if they rank the same as the average old employees then they have tremendous potential for profession development. The way outcomes are delivered and assessed at BGCSE has impacted positively on the ir attitude, work ethics and capacity to handle complex operations both at professional and administrative levels.

Conclusion

It is clear from the afore-going analysis that the indicators that are used are able to show a substantial measure of quality. **Firstly**, the teachers are able to interpret the BGCSE syllabus content very easily because it is local content and most examples of concrete things can be seen around the school. The COSC content was designed for the international use and as such does not take into consideration some of the local and cultural issues. Teachers do not need a regular in-service training as they would do with COSC designed assessment systems. As a result of the ease with which they understand the syllabus content, the teachers are able to establish the content validity of the examination papers by comparing the questions and learning objectives. This was difficult with COSC syllabuses because some concepts were difficult for teachers to understand because they were foreign to them. The schools were able to show that the BGCSE result reports are easy to understand can be used because they are not aggregate based and each subject grade is independent of the others. COSC put much emphasis on aggregated grades and hence, ignores attainment in individual

subject. All the opinions of the teachers suggest that there is more quality in the BGCSE examinations than in the COSC ones.

Secondly institutions of higher learning were also able to confirm the quality of the BGCSE by showing how it helped them to build their criteria for admission of new students. Most of them revealed how the COSC results fell short of expectation by basing overall performance on an aggregated score thus ignoring the individual skills that are apparent in such a score. As a result it logically follows that their overwhelming support to the idea that such results should continue to be used for admission purposes stand at 100%. It is also not surprising to learn that a third of the respondents think that there is relationship between the BGCSE supports and the courses offered by the institutions of higher learning in Botswana. A lot of questions were raised in the past concerning the relevance of COSC subjects to higher education courses.

Thirdly, employers were satisfied with the employees who went through the BGCSE examinations because they felt that these manage their work with ease, are eager to learn new ideas, are productive and generally are of average performance. Employers generally complained of employees who went through the COSC system as being theoretic oriented that practical and as such have difficult in implementing ideas. The Quality of the BGCSE examinations becomes quite evident when we take the opinions of such experienced human resource practitioners into consideration.

Lastly, this research has provided a synopsis of the views of some of the major stakeholders of the BGCSE examinations. The study being a one short cross-sectional survey, it excluded some of the key variables such as gender, time, teacher training, instructional design methods, class-size, availability of facilities, geographical location of schools, trends in examination performances and psychometric issues such as standard setting methodologies.

It could be a good idea in future for someone to undertake a comprehensive longitudinal survey similar to this one. Factors such as time and experience would broaden the scope of the study and hence give more informative and reliable results. This could be an interesting study to evaluate the impact of localization since

“education is a multi-faceted process whose outcomes are determined by a broad and complex set of interacting variables” (Murimba 2002 p1).

References

Botswana Government (1994) *Government Paper No. 2 Revised National Policy on Education*. Gaborone, Printing and Publishing Services.

Malope P T M (2002) *The Problematique of Education Quality: What is being Assessed?* A paper presented at the SADC Policy Forum in Windhoek, Namibia.

Murimba S (2002) *Quality of Education for All*. A paper presented at the SADC Policy Forum in Windhoek, Namibia.

Nitko A J (1998) *Conceptual Frameworks to Accommodate the Validation of Rapidly Changing Requirements for Testing and Evaluation*. An invited paper presented at the 24th Annual Conference of the International Association for Educational Assessment, in Barbados, West Indies.

Ramatsui P T (2002) *Development of a National External Examinations System, The Botswana Experience*. A paper presented at the SADC Policy Forum in Windhoek, Namibia.

Pretorius L (1983) *Introduction To Research Techniques*. Pretoria, University of South Africa.

Walizer M H Wienir P L (1978) *Research Methods and Analysis, Searching for Relationships*. New York, Harper and Row Publishers Inc.

Appendix

Localisation was undertaken in stages taking into consideration the major operational logistics that would provide a conducive environment for the exercise to be carried out smoothly. Apart from finance the other important resources that were taken into consideration were time and expertise. .

The main stages of localisation were as follows:

- ◆ The training of markers and moderators(1993)
- ◆ Marking scripts locally(1993)
- ◆ Development of local syllabuses live papers and marking schemes (1996 –2002)
- ◆ Training of professional and administration personnel(1996-2002)
- ◆ Grading and grade review(2000-2002
- ◆ The development of the examination processing system (BNEPS) (1996, initially flopped, the process is still ongoing)

Development of Syllabuses and specimen, live papers and marking schemes

The process of syllabus development started in 1996. A phased in approach was used to ensure an efficient utilisation of the limited resources such as finance, time and manpower.

The phases were arranged as follows:

Phase I	1996/1997
English language	
Mathematics	
Setswana	
Physics	
Chemistry	

	Biology	
Phase II		1997/1998
	History	
	Literature in English	
	Science :Double Award	
	Science : Single Award	
Phase III		1998/99
	Design and Technology	
	Art and Design	
	Geography	
	Agriculture	
	Commerce	
	Human and Social Biology	
	Food and Nutrition	
Phase IV		1999/2000
	Fashion and Fabrics	
	Development Studies	
	Accounting	
Phase V		2000/2001
	Business Studies	
	Computer Studies	
	Home Management	
	Social Studies	
Grading and Grade Review		2000