Abstract

Conference theme: *Assessment & Big Data*

Sub Theme: *Reporting on progress and achievement using Big Data*.

Title: Mainstreaming School Based Continuous Assessment in Zambian Education System

By: *Angel Mutale Kaliminwa*

It is appreciated the world over that School-Based Continuous Assessment is appropriate to achieve meaningful measurement of learner performance. This is due to the recognition that SBCA is made up of a variety of assessment methods - both formal and informal. SBCA is used to inform the learning process through which learning outcomes are required. It takes place during the learning process when it is considered necessary. SBCA makes use of criterion referencing and provides information in context as feedback on how learners are changing.

The nature of SBCA means data on learner performance are generated continually and may contribute to Big Data saga. Teachers may have problems to determine which of the data are necessary to record and in what format. A bigger problems also is the number of players in the education systems of many third world countries who create a multiplicity of activities, majority of which are duplicative.

The paper analyses the implementation of School Based Continuous Assessment in the Zambian Education System. Paradoxically, many countries know the benefits of SBCA, how to implement and sustain it, but they are always beginning and never ending! Could the Big Data syndrome be the one to blame?

Big data is the description of the large volume of information that floods our business daily. It is not the amount of data that is important but what we do with the data. It is argued that Educators armed with data-driven insight can make a significant impact on education systems. They can make sure students are making adequate progress, and can implement a better system for evaluation and support of teachers.

Contents

Abbreviations and Acronyms

DC   Dubai Cares

MoGE   Ministry of General Education

LMTF   Learning Metrics Task Force

CAMFED   Campaign for Female Education

NGO   Governmental Organisation

ZECF   Zambia Education Curriculum Framework

SBCA   School Based Continuous Assessment

ECZ   Examinations Council of Zambia

TEVET   Technical Education, Vocational and Entrepreneurship Training

DRCC   District Resource Centre Coordinators

ZIC   Zonal In-service Coordinator

SIC   School In-service Coordinator

NEST   National Education Support Team

PEST   Provincial Education Support Team

DEST   District Education Support Team

PSE   Planning for School Excellence

CPD   Continuous Professional Development

PTA   Parents-Teachers   Association

PTC   Parents-Teachers Committee

Chapter one

1. Introduction

1.1. Project title

Mainstreaming School Based Continuous Assessment in the Zambian education system.

1.2. Project location

All Zambian districts, with a special focus on Western, Muchinga and Central Provinces.

1.3. Beneficiaries

Direct: 5,370 children (2,678 girls and 2,692 boys) in 15 primary schools.
Indirect: 3,217,872 children in 8,754 primary schools across Zambia
Stakeholders from organisations and groups at national, district and community level

1.4. Project design

With support and investment from Dubai Cares, a Resource Team comprising Ministry of General Education (MoGE), Examinations Council of Zambia (ECZ) and Campaign for Female Education (Camfed) staff reviewed and developed training materials. National, provincial and district-level support teams (NEST, PEST and DEST) were then trained in continuous assessment in all the ten provinces of Zambia. School-level personnel were trained (by national trainers) in three districts – Kabwe, Mpika and Mongu – in order to provide a best-practice model to take to scale.

1.4.1. Camfed's rationale

Camfed is ideally set up to support the roll out of CA, combining it with the organisation's model of Planning for School Excellence (PSE) initiative as a tool for analysis of data. PSE involves feeding back performance data to education stakeholders and empowering them to use data to make improvements to learning and the school environment. School and community stakeholders are trained to use school-generated data, including assessment data, to form action plans. SBCA and PSE were therefore looked at as complementary initiatives, each supporting and reinforcing the other in the effective use of data to improve learning outcomes for children.

1.5. Background

While the Millennium Development Goals (MDGs) saw the expansion of school places and tremendous increase in access, quality of education and learning outcomes, however, remained low in many countries. At least 250 million primary school age children around the world were reported to be unable to

read, write or count well; even the 130 million of these children who stayed in primary school for at least four years never achieved the minimum benchmarks (EFA 2013/14 Global Monitoring Report). At the launch of the Sustainable Development Goals (SDGs), education policy makers needed to build on achievements in increasing access to education and start addressing issues of quality and learning outcomes. As a global response to this need, UNESCO, Institute for Statistics (UIS) and the Center for Universal Education (CUE) at the Brookings Institution-Washington DC, convened the Learning Metrics Task Force (LMTF). The overarching objective of the project was to catalyse a shift in the global conversation on education from a focus on access to access plus learning. Based on recommendations of technical working groups and input from broad global consultations, the task force made recommendations to help countries and international organizations measure and improve learning outcomes for children and youth worldwide.

1.6. Cooperating partners

The Network for African Learning Assessment was born during the last regional meeting of the Learning Metrics Task Force (LMTF) held from 3 – 5 February, 2016 at Protea hotel – Livingstone Zambia. The meeting heralded the sunset of the activities of LMTF. The Learning Champions decided to continue with the activities of LMTF. The African Learning Champions assumed the new name of NALA. Zambia assumed the leadership of Anglophone NALA while Senegal assumed the leadership of Francophone NALA.

The Association for the Development of Education in Africa (ADEA) took over the coordination of NALA and placed it under the InterCountry Quality Node for Teaching and Learning (ICQN-TL) to coordinate the contribution of assessment to teaching and learning. It is in this light that ADEA supported the participation of the Anglophone NALA coordinator at the 44th IAEA conference. NALA is a branch of ADEA's ICQN on teaching and learning, which was launched in February 2016 and is led by the Government of Rwanda. The working model is to establish a partnership that gives full ownership to the countries, being hosted and led by countries but giving support to African Ministers of Education. Key countries that are involved in the establishment of NALA were Zambia, Senegal, Kenya, and Rwanda.

1.7. The Problem

Enrolment rates at primary level have improved significantly in Zambia over the fifteen years of the MDGs, from 70% in 2000 to 94% in 2013 (UNESCO), but quality of education remains low despite huge investment – 20.2% of government spending was allocated to education in 2013. Despite the policies implemented by the Zambian authorities over the past few years, the system continues to underperform in comparison to countries which invest less in education. This raises questions as to the efficiency of the system and,

importantly, its capacity to achieve the goals of the Education 2030 Agenda or to contribute to achieving Zambia's vision of becoming a prosperous middle-income country by 2030.

Chapter two

2. Literature review

In Zambia, examinations have been used for progression, selection and certification. School-based continuous assessment has not been fully used for progression purposes in the education system, other than in a few practical subjects, but national-level education reforms have emphasized its power to influence and improve pupils' learning outcomes, and the MoGE has identified reform of the examinations system as an intervention with the potential to support significant improvements in the quality of teaching and learning. Several Government policy documents have in the past advocated for a reduction in the emphasis placed on high-stakes final examinations and the introduction of the school-based continuous assessment to contribute to learners' final results, alongside the external examinations (MoGE, 1996; MoGE, 1992; MoGE, 1977).

No doubt Zambia has done well in terms providing access. According to UNESCO Report (246408), Zambia has achieved remarkable progress in improving access and equity in education, and provides close to universal education at primary level. In 2014, the gross enrolment ratio reached 127 per cent for primary education, with a completion rate of 99 per cent. In the same year, 89.4 per cent of children completing primary level education made the transition to lower secondary level, an increase of nearly 36 per cent over 10 years. Zambia has already achieved gender parity at primary level and is rated among the best in sub-Saharan Africa for gender parity at lower and upper secondary. There is no doubt that Zambia's efforts to improve access to education in the past years have, overall, been a success. However, not every initiative has worked.

On the aspect of quality, the UNESCO report further states that, despite the achievements and strengths of Zambia's education system, challenges remain, among them the need to further improve the quality and relevance, equity, effectiveness, and efficiency of the education it provides.

3. Government Policies

3.1. The Education Act – 1966

This was the first post-independence Government Law on education. It was meant to overhaul the colonial education system in order to meet the aspirations of an independent Zambia. The Act paved way for a number of curriculum reforms, for example, the introduction of English as the language of instruction from Grade One to Tertiary levels. The Act recognised SBCA as a good way to assess the learners. The Act was repealed in 2011.

3.2. Educational Reform - 1977

This was the first comprehensive reform in the education system, which aimed at making education an instrument for personal and national development. The main features of this reform were the introduction of Basic and High School education system and the focus on skills orientation in Basic and High Schools. It also gave recognition to SBCA.

3.3. The Constitution of Zambia, Act No. 1 of 1991 and the Amendment Act No. 18 – 1996

It was inevitable for the constitution of Zambia to be reformed in 1991 in order to take into account the reintroduction of plural politics, guided by democratic principles. This meant that the education system was also to be reformed in accordance with democratic dispensation. The Act in the constitution was amended in 1996. The Act became the cornerstone for educational restructuring and subsequent reviews in Zambia. It gave more muscle to SBCA.

3.4. Focus on Learning - 1992

The declining economy in the 1980s had a negative effect on the provision of social services including education. All Government institutions of learning experienced serious inadequate resources of all kinds, including materials to support the curriculum. In 1990, Zambia attended the *World Conference on Education for All,* and in 1991 a *National Conference on Education for All* was held in Zambia. The proposals and working strategies aimed at improving education delivery were drafted at the conference and compiled as *Focus on Learning*. The document was used to lobby Government and Cooperating Partners to consider allocating enough resources to the education sector in order to improve the quality and quantity of education in Basic Schools. Great recognition of SBCA was made in this document.

3.5. Educating Our Future - 1996

The Zambian Education Curriculum Framework (ZECF) adheres to the National Policy on Education, *Educating Our Future (1996)*. The ZECF is developed according to the aims of education outlined in this Education Policy Document. It pointed out how and which institutions of government were to be involved.

3.6. Technical Education, Vocational and Entrepreneurship Training Policy – 1996

In 1996, the Government of the Republic of Zambia reviewed the 1969 post-independence policy on Technical Education and Vocational Training. Thereafter, a new policy, which incorporated and mainstreamed Entrepreneurship, was adopted; thereby giving the country the Technical Education, Vocational and Entrepreneurship Training (TEVET) policy. The aim of the new policy was to create a national system of providing TEVET that would satisfy the labour market, socio-economic concerns and resource based opportunities in the economy in general, but more specifically to:

3.6.1. *Balance the supply of skilled labour at all levels with the demands of the economy; and*

3.6.2. *Act as a vehicle for improved productivity and   income generation and be an instrument for the minimisation of inequalities among the people.*

In this regard, the need for the use of SBCA was emphasised.

3.7. The Technical Education, Vocational and Entrepreneurship Training Act No. 13 of 1998 and TEVET (Amendment Act No. 11 of 2005)

Implementation of the new TEVET policy required legislation to put into effect the various measures and ideas it contained. TEVET Act No. 13 of 1998 was the main instrument. It was later amended in 2005 to enhance quality.

3.8. The National Gender Policy - 2000

The Government recognises the need for equal and full participation of women and men at all levels of national development. Thus, the Government has committed itself to the process of removing gender imbalances by adopting and advocating for implementation of the *National Gender Policy*. The implementation of the policy entails that all curricula materials highlight matters which are gender responsive and promote equity of access to education.

3.9. Declaration of free education in Zambia

In the year 2002, the then president of Zambia, late Dr. Levy Patrick Mwanawasa SC, announced the introduction of free primary education. This was communicated to all stake holders in the education system through Circular No. 3 2002 of 15th March 2002, by the Permanent Secretary in the Ministry of Education. The Circular read, in part, "In order for the free education policy to work, it has become necessary for me to direct all Heads of Schools to stop charging pupils at grade 1 – 7 any form of fees with immediate effect."

3.10.   Objectives of the study:

3.10.1. General Objectives

The objective of this project was to mainstream continuous assessment in the Zambian education system by building the capacity of relevant personnel in the MoGE. It was to give policy makers and teachers the tools and skills they needed to measure what learners were learning and using their findings to improve the quality of learning, responding to the fundamental questions set by all who are concerned with quality of education. The general Objective of the project was to improve quality of teaching and learning outcomes in Zambian schools.

3.10.2. Specific Objectives

3.10.2.1. Mainstreaming of school based continuous assessment processes in the MoGE through training of support teams at provincial and district levels,

3.10.2.2. Development of a Quality Assurance Framework for the effective roll-out of school based continuous assessment processes

3.10.2.3. Training of school personnel at selected Camfed partner primary schools in Western Province

3.10.2.4. Create a robust, replicable and scalable approach to improving teaching and learning in schools through assessment and feedback.

4. The nature of School Based Continuous Assessment (SBCA)

4.1. Definition of School Based Continuous Assessment

In the Zambian context, of School Based Continuous Assessment that has been adopted is defined as an on - going, diagnostic, classroom-based process that uses a variety of assessment tools to measure learner performance. It is a formative evaluation measure conducted during the teaching and learning process with the aim of influencing and informing the overall instructional process.

4.2. Significance of the project

The Ministry of General Education has set out clear goals and recommendations around the country-wide implementation of School Based Continuous Assessment (SBCA) in schools. For this to take shape, there was a serious and urgent need to build capacity at all levels of the education system in the formulation of assessment tools, administration, and analysis of results. All educational policies the country has had have alluded to the importance of SBCA. To fulfil the need for SBCA mainstreaming the approach used was to;

4.2.1. Familiarize participants with various modes of learner assessments.

4.2.2. Conduct content mapping of various subjects.

4.2.3. Develop test specifications as a tool in planning appropriate learner assessments

4.2.4. Sensitize participants on the use of SBCA as a better assessment mode than continuous testing and summative assessment.

4.2.5. Discuss the importance and need for employing SBCA in schools in Zambia.

4.2.6. Plan for training educationists in the implementation of SBCA in Zambia.

5. Dubai Cares supported programme

5.1. Overview of the training

With financial help from Dubai Cares, the MOGE embarked on the process of mainstreaming CA in Schools. A training manual to offer guidelines was developed. The manual is an important tool to support teachers in their classrooms and in preparing learners for different forms of assessments. It is meant to provide teachers with essential information about the designing,

preparation and administration of assessments in line with the demands of the Ministry of General Education revised school curriculum. The expectation was that teachers would be able to come up with quality, reliable and rigorous assessment at any stage in a learners' development.

The main objective for the Training Manual was to standardise the training of school teachers in SBCA in all the provinces. The specific objectives of the training manual were to help teachers in:

5.1.1. the specific knowledge in assessment,

5.1.2. skills in development and administration of assessments

5.1.3. assessment tasks/activities

The manual also provided the programme of activities to be followed by the trainers.

Chapter three

6. Project design

Training in school based continuous assessment was delivered to core support teams of 360 ministry officers at national, provincial and district levels. These officers were given the capacity to cascade the training and awareness to all schools in Zambia through continuous professional development (CPD) of teachers through district and zonal coordination. The training centred on SBCA development, administration, management, and practice. Its aim was to build the capacity of education officials and practitioners to embed continuous assessment in teaching and learning practice and ultimately improve learning. The Resource team also developed a Quality Assurance Framework for training - this is a valuable tool for MoGE and support teams to ensure ongoing quality and monitoring at school level.

6.1. The project targeted the whole country but implemented by training 25 national and provincial core trainers, 309 district level support team members, 15 ZIP members in 3 districts, 75 teachers in 15 primary schools. Direct beneficiaries were envisaged to be 5,370 children (2,678 girls and 2,692 boys) in 15 primary schools, Indirect beneficiaries: 515 ZIPS across 103 districts, 43,770 teachers in 8,754 primary schools across Zambia, 3,217,872 children in 8,754 primary schools across Zambia, Stakeholders from organisations and groups at national, district and community level.

7. Results/findings of the project

7.1. Use of the cascade system

The Cascade System of delivery is widely used and found to be cost effective means of reaching huge numbers of targeted population. The SBCA implementation however, revealed that perhaps this was not suitable for the purpose. The following observations were made:

7.1.1. Cascade system vs quality

The cascade system of delivery dilutes the quality of training. The lower layers did not receive the same quality of information as those at higher levels. It was observed that even the National Support Team who were trained by experts did not grasp all the skills thought to have been delivered. It's unfair to expect them to train others. If this was observed at that level what quality could we expect at the third, fourth and lower layers?

7.1.2. Cascade system vs project speed

The cascade system may not keep pace with the speed of the project. The expectation was that after training the National, Provincial and District levels, training at other levels would follow the MoGE structures. An observation was made that the project had its own fixed time within which all levels targeted should have been trained. However, this did not coincide with the timings and speed at which the MoGE structures conduct their business.

7.2. Programmes and MoGE existing structures

All initiatives end with the same DRCCs, ZICs and SICs. It was observed that the MoGE has a number of initiatives and programmes which were designed to follow the cascade system. All the programmes and initiatives ended up on the desks of the same DRCCs, ZICs and SICs who were expected to conduct training for teachers. This state of affairs led to the following questions;

7.2.1. Programmes vs human resources

Were the DRCCs, ZICs and SICs super human to be able to grasp all the skills needed in each of the project and be able to train others?

7.2.2. Programmes vs available time

Did DRCCs, ZICs and SICs have the time to conduct the trainings required by the different projects and programmes? The situation also made those at the higher levels relax and think they had done their part without realising that things were not happening at the lower levels.

7.2.3. Training duration vs quality

Number of days for training reduced as layers went down. It was observed that as the cascade moved down the layers, the number of days required for the training kept on reducing. The question is if the National support team needed five days to be trained, it was suicidal to reduce the number of days for training at lower levels. This reduced both the content and the quality of the training package. The end result was that those who required to use the skills got a raw deal and the learners did not get the intended benefit.

7.3. Assessment Data usage

7.3.1. Terminology vs data users

It was found out that terminology used in training needed to be simplified to remove jargon. Looking at varied nature of the stakeholders, an observation

was made that suitable terminologies should be used depending on the audience. Especially the Parents-Teachers Association (PTA) now called Parents-Teachers Committee (PTC) who also needed to be brought on board.

7.3.2. Abstract vs Practical examples
Practical examples were required in order to build a better understanding of different assessment techniques. Seeing is believing. It was observed that there was need to have more exemplar tasks to consolidate the understanding of the techniques used in constructing different assessment tasks.

7.4. Total package
7.4.1. Additional topics
It was observed that there was need to expand the interpretation of results and consider the possibility of additional topics being included, to enhance the interpretation of statistics and how to support learners with disabilities.

7.4.2. Trained vs untrained stakeholders
The training of district and provincial support teams (in addition to those at national level) was critical in ensuring that CA was able to be rolled out and implemented nationwide. In order for CA to be successfully implemented, no stakeholder should be left out lest he/she becomes the weak link.

7.4.3. Continuous Professional Development vs one off training
The inclusion of officials responsible for Continuous Professional Development of teachers was important for sustainability to ensure the mainstreaming of school-based CA is included in the CPD curriculum.

7.5. Community participation
7.5.1. Community participation in school-wide improvements
It became clear that Community Participation such as that done through Camfed's PSE process – was essential to ensure holistic support for children's improved learning. Officials such as ZICs have a key role to play in reinforcing the value of wider community participation. This could be done by coming up with assessment tasks that border on skills found in the community.

7.6. Holistic approach
The delivery of SBCA must be viewed as part of a holistic approach to improving children's learning. For example, school action plans developed in the pilot schools included plans to introduce school feeding programmes to improve attendance, facilitating the ability of teachers to implement assessment on a regular basis.

7.7. PSE vs SBCA

It was observed that the teams that were training at school level were more comfortable with PSE and this led to SBCA not being well delivered.

8. Conclusions

8.1. Through the cascade system, we may be giving large figures of stakeholders trained, their impact will not be felt for as long as the teachers who are at the point of delivery are not trained. Sometimes the teachers will not receive the training at all and yet the project will have fulfilled the set objectives and will give satisfactory reports to the sponsors and the government.

8.2. Make teaching more effective. Effective teaching depends on teachers' skills and motivation, and yet many systems do not take them seriously. Teacher salaries are the largest single budget item in education systems, consuming three-quarters of the budget at the primary level in developing countries. Yet many systems struggle to attract strong candidates into teaching and to provide a solid foundation of subject or pedagogical knowledge before they start teaching. As a result, new teachers often find themselves in classrooms with little mastery of the content they are to teach. If this the reality, then SBCA must be made compulsory for all teachers being trained.

8.3. As observed by UNESCO, focus everything else on teaching and learning. School inputs, management, and governance must benefit the learner-teacher relationship if they are to improve learning—but many do not. Debates on improving education outcomes frequently revolve around increasing inputs, such as textbooks, technology, or school infrastructure. But too often the question of why these inputs might actually improve learning is overlooked. The evidence on successful use of inputs and management suggests three main principles:

8.3.1. Provide additional inputs, including new technologies, in ways that complement rather than substitute for teachers. It is not uncommon for initiatives to appear as new and independent programmes for the implementers at the grassroots level because of the haphazard manner they are carried out.

9. Way Forward

9.1. Development of the Syllabus for Teacher Education in "Curriculum and Assessment" There is great hope in Zambia that the future may be bright because of the syllabus as it will take care of the pre-service teachers though lecturers also need training. Thanks to ECZ, the syllabus was developed in January and validation meeting held in March 2018.

9.2. The course on "Curriculum and Assessment" will be Compulsory for all trainee teachers so that they graduate with the required skills in assessment. This

situation will take care of pre-service though the benefits may not be immediate. The identified problem of lecturers not having the necessary skills to teach the course needs to be tackled seriously.

9.3. What about In-service; we need to continue with workable in-service projects and programmes to equip them with the required skills. The problem of in-service keeps growing every year as new teacher are employed adding on to number to be trained. But with the lessons learnt, it is not insurmountable.

9.4. Lecturers who teach in universities and colleges will also need to be capacity built in assessment. Otherwise the course will not be delivered.

9.5. There is need to rethink the cascade system unless we want to continue conducting business as usual.

10.   References

Carmody, B. (2004) The evolution of education in Zambia: Lusaka Bookwolrd publishers.

Chusa Sichone, Zambia: Nation Progress Towards Gender Equality in Education at http://allafrica.com/stories/201110030881.html.

Deborah Sharp, (2009) Assessing Zambia's Progress in Achieving the Gender-Related Millennium Development Goals University of Oregon.

E C Z, (2013) An Inquiry into the Extent and Causes of Absenteeism at the Primary and Junior Secondary School Level UNICEF Lusaka Zambia.

Elsa Leo-Rhynie, (1999) Gender Mainstreaming in Education A Reference Manual for Governments and Other Stakeholders Institute of Development and Labour Law, University of Cape Town, South Africa.

Gaby Weiner, (1997) New Era or Old Times: class, gender and education, at http://www.leeds.ac.uk/educol/documents/000000357.htm University of York.

Hope Mubanga, (2014) Designing for gender: does Zambia's draft Constitution stand up to scrutiny? at http://www.constitutionnet.org/news/designing-gender-does-zambias-draft-constitution-stand-scrutiny.

Ministry of Education, (1996) "Educating our Future" Zambia's education policy document. Educational Publishing House, Lusaka.

MoE (1977) Educational Reform. Lusaka, Zambia Educational Publishing House.

MoE (1992) Focus on Learning. Lusaka, Zambia Educational Publishing House.

MoE (2011) The Education Act (2011) Lusaka, Government printer.

MoGE (2011) Education Sector National Implementation Framework III 2011 – 2015. Implementing the sixth National Development plan. Lusaka, Government printers.

MoGE (2013) Zambia Education Curriculum Framework. Lusaka Curriculum Development Centre, Lusaka.

OECD,   GENDER EQUALITY AND SOCIAL INSTITUTIONS IN ZAMBIA The OECD Gender, Institutions and Development Data Base.

Rushfan, (2008), 10 Extreme Examples of Gender Inequality, at http://listverse.com/2008/11/20/10-extreme-examples-of-gender-nequality/

Sarah Bibler & Claire Lauterbach, (2012) Gender, IFIs and Food Insecurity Case Study: Zambia GENDER ACTION 1875 Connecticut Avenue Suite 500 Washington DC 20009.

Simon Mizrahi, (2015) Empowering African Women: An Agenda for Action AFRICA GENDER EQUALITY INDEX 2015 African Development Bank. Immeuble CCIA - Avenue Jean-Paul II - 01 B.P. 1387 Abidjan 01, Côte d'Ivoire

The World Bank, (2004) ZAMBIA STRATEGIC COUNTRY GENDER ASSESSMENT   Washington DC.

UNICEF Gender and education, at http://www.unicef.org/esaro/7310_Gender_and_education.html.

UNICEF, (2012) Girls' education and gender equality, at http://www.unicef.org/education/bege_70640.html.

USAID/ZAMBIA, (2005) GENDER ASSESSMENT AND EDUCATION STRATEGY WORKSHOP PROCEEDINGS MSI 600 Water Street SW Washington, DC 20024.