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Examining views of teachers, parents and learners on their understanding of the role of School-Based Assessment in the learning and teaching process

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Abstract

In South Africa, School-Based Assessment (SBA) is one of the tools used to assess the content competences, skills, values and attitudes; to provide learners, parents and teachers with results that are a meaningful indication of what the learners know, understand and can do at the time of assessment (Department of Basic Education(DBE), 2012). The purpose of this study was to examine the implementation of SBA with a view to unearth the factors contributing to the perennial rejection of SBA marks, resulting in learners from some schools being unfairly assessed. This study was informed by the Total Quality Management theory, popularly known as TQM. To explore the research problem, a mixed methods study, employing a concurrent triangulation design, was employed. The sample size for this study was 140 respondents for the quantitative sample and 88 participants for the qualitative sample. Data was collected using closed-ended (structured) and open-ended (unstructured) questionnaires, interviews and focus group discussions. Questionnaire and interview questions were a blend of closed and open-ended questions, thus making them semi- structured and aligning well with mixed methods research study. Findings revealed that participants and respondents were implementing SBA in high schools as evidenced by the confirmations of the roles of SBA. However, a number of inconsistencies in the understanding of the roles could be picked from the findings, which are pointers to obstacles in the implementation of SBA as a teaching and learning tool.

***Key words*:** School-Based Assessment, Implementation, Total Quality Management

1. INTRODUCTION

School-Based Assessment is an on-going diagnostic classroom-based process that uses a variety of assessment tools to measure learner performance (Afemikhe & Omo- Egbekuse, 2010; Annie, 2011; Awofala & Babajide, 2013; Bello & Tijani, 2010; Daugherty, 2011; Department of Basic Education (DBE), 2011; Kapambwe, 2010 and Ogunleye & Omolayo, 2016). Research studies have shown that the issue of SBA implementation was problematic in many countries, and widely researched. Studies have shown that, if properly implemented, SBA enables teachers and education managers to effectively monitor learners' progress, thereby providing the basis for improving the quality of teaching and learning in classrooms (DBE, 2014). In South

Africa, Reyneke, Meyer and Nel (2010) assert that, from teachers' perspective, it is humanly impossible to do all the marking within certain timeframes for timely and constructive feedback to be given to enhance learning. In this country, report on the General Education Quality Assessment, DBE (2013) suggests that SBA was extremely weak. The Ministerial Task Team Report on the National Senior Certificate observed that the dual role of SBA as both a learning and teaching technique and as promotion/certification measure was creating problems among teachers, learners and parents in South Africa (DBE, 2014). Tong and Adamson (2015) observe that students did not appreciate SBA and were unable to capitalise on feedback and recommend a dialogue model that allows students to participate in debate about improving learning. In the 2015 NSC Examination Technical Report in South Africa, DBE (2015) reports that there are still areas that require support and intervention to improve the quality and standard of SBA. Which is explained by some assessment tasks which are still of very poor quality, and there is little evidence of monitoring and support of schools to improve the quality of pre- and post- moderation of tasks at school level. The DBE, in the 2016 NSC Examination Report, identifies quality of assessment tasks and lack of dedicated support at district level across a number of provinces, as persistent concerns (DBE, 2016). The report states that, during the Minister's 2016 lekgota, pertinent macro issues that underpin the implementation of SBA in SA were raised, such as It was against this backdrop that the current study sought to understand the views of teachers, parents and learners on the role of SBA in teaching and learning process. The argument being that probably the implementation issues were caused by lack of understanding of the roles of SBA in the teaching and learning process. The central feature of this study was to check if teachers, learners and parents have the same understanding the roles of SBA since they are located at the end of the implementation spectrum. This view is in line with TQM tenant of the systems approach, which advocates for a common understanding of all parts of the system to achieve a common goal (Luburić, 2013).

Views of teachers on the understanding of the roles of school-based assessment

The teacher is the most critical implementer of SBA who needs to have skills and knowledge to assess students (Nair et al. 2014).The views of the teacher on the role of SBA are critical for a better understanding of the implications of SBA on teaching and learning. Several studies revealed that teachers have a favourable perception of SBA (Darling–Hammond & Wentworth, 2010; Maile, 2013; Mansor et al. 2013; Mwebaza, 2010; Ndalichako, 2015; Tangdhanakanond & Wangwanich, 2012).

On the contrary, some studies observed issues with the teacher understanding and attitude (Byabato & Kismo, 2014; Chong, 2009; Gobena, 2013; Green et al., 2006; Mwebaza, 2010; Nyambe - Nyambe, 2015; Nair et al., 2014; Vandeyer and Killen, 2007). The view that SBA constitute a needless workload is held by teachers internationally (Barley, 2013: Chong, 2009; Jaba, 2013; Mishra & Mallik, 2014; Narayan, 2014). Other studies have brought a new dimension of workload being linked to school location and gender (Samsudin Rengasamy, Jizat, Wahid & Jalil, 2014).

Teachers view teamwork and collaboration on SBA as needing improvement. Teachers are concerned about teamwork and level of collaboration being

very low because they are too occupied with their myriad duties and tasks, such that they are unable to hold beneficial discussions among themselves (Nair et al. 2014). Teachers viewed SBA as a means of preparing learners to succeed in national examinations rather than as a means of enhancing teaching and learning (Ndalichako, 2014).

Another view is that the teacher faces difficulties in evaluating weak students and those who are always absent from school (Kapambwe, 2010; Ramalepe, 2015; Samsudin et al. 2014). Teachers also view SBA as time consuming and requiring much paper work (Lumandi, 2013; Mishra & Mallik, 2014). This calls for a paradigm shift in teachers' attitude because the aspects, which teachers are raising to be time consuming, are the basic co-business in the teaching and learning process.

Indications from literature suggest that teachers in SA view curriculum policy changes with a negative attitude (Ramalepe, 2015). Maile (2013) reports that teachers have lost track of what is expected of them as a result of the many policy changes that they have experienced in recent years in South African. Teachers indicated that they were not clear on what is required of them in the designing of SBA assessment tasks and the judgment of assessment evidence presented by learners (Kuze & Shumba, 2011; Maile, 2013; Mkwananzi, 2014; Lumadi, 2013; Polia, 2009; & Xule, 2013).

Reyneke (2016) reports that teachers' inadequate professional knowledge is a major cause of the ineffective implementation of SBA. Maile (2013) confirms the teachers' views that they lacked capacity to manage SBA, and had no confidence in their work. Reyneke (2016) observes that submissions by Teachers Unions and quality assurance bodies such as Umalusi to the 2013 Ministerial task team suggest that teachers' inadequate professional knowledge is a major cause of the ineffective implementation of SBA, both as a learning and teaching tool, and as an element in the final National Senior Certificate (NSC) mark.

The National Senior Certificate is the barometer for the health of the education system. However, SBA is perceived by many in the educational community as having a negative impact on the quality of the NSC qualification with the SBA mark seen as questionable (DBE, 2014). Oberholzer (2010) concurs and states that one of the major concerns of education in South Africa is the subject base of teachers, which has a knock-on effect on their ability to teach and assess effectively. The teachers' negative attitude, inadequate professional knowledge and lack of capacity were issues in the implementation of SBA, which created a gap in understanding what was happening, which this study sought to plug

2. VIEWS OF LEARNERS ON THE ON THE UNDERSTANDING OF THE ROLES OF SCHOOL-BASED ASSESSMENT

Learners as recipients of educational products are as important as the transmitter of the educational product. The value of student voices in contributing to school improvement initiatives has been widely recognised in developed countries in recent years (Tong & Adamson, 2015). South Africa recognises the voice of learners through the establishment of the Representative Council of Learners (RCL), as enshrined in the South Africa Schools Act (84 of 1996). Lodge (2005), in Tong and Adamson (2015), asserts that students make a valuable contribution to school improvement as key participants in the learning process. Literature in South Africa shows that, there is lack of studies on views of learners. The limited literature on

views of learners creates a fertile ground for this study. Annie (2011) asserts that studies of students' perspective of assessment and their reactions are remarkably lacking, especially in the primary and secondary school context.

In their study, Tong and Adamson (2015) state that students are somewhat appreciative of their teachers' understanding of SBA and selection of appropriate tasks and prepare themselves well for examinations and are motivated by SBA. In the same study, students praised their teachers for guiding them in understanding the requirements of SBA and for designing activities that are aligned to formal assessment tasks. Forgarty (1998) and Hedge (2010) in Nair et al. (2014) say with SBA, students would have ample opportunities to become engaged in the learning process. Among the characteristics of SBA, students are able to integrate their intelligence, emotional and spiritual quotient, and physical strength in their learning process directly. This allows setting of the learning targets and relating of the skills, knowledge and ideas learnt with real life situations. In Mishra and Mallik (2014), students appreciated the value of SBA and stated that;

We enjoy examinations. Unit test makes us confident for next other important examinations. We feel happy when teachers thank us or recognise us in classroom in presence of our classmates. We feel happy when teachers appreciate us in the classroom.

Students and other stakeholders should be convinced that when SBA is at its best, it can be motivating and productive to student helping them to know how well they are doing and what they need to do (Gobena, 2013).

On the negative side, students perceive the potential of harm of student-teacher relationship and teacher-student trust because of assessments that the students perceive as unfair or unfounded (Annie, 2011; Green et al. 2006; Narayan, 2014). Tong and Adamson (2015), in their study, report that students seem to be skeptical about the capacity of SBA performing the functions ascribed to it, such as advancing their learning. Their findings revealed that, over 80% of the students remarked negatively about SBA results in one round of assessment being able to predict their performance in future rounds of SBA. Mishra and Mallik (2014) concur with students' view that they did not enjoy examinations since teachers did not teach properly what to write in the examination.

SBA is supposed to provide feedback, however, studies reveal that this is not the case. Tong and Adamson (2015) reveal that students expressed reservations about the value of SBA as a mode of assessment since they were unable to benefit from the feedback they were receiving from teachers. Umalusi (2015) identifies lack of feedback to learners as one of the critical factors hindering effective implementation of SBA in South African Schools.

Learners also grapple with heavy workload in the implementation of SBA in high schools (Barley, 2013; Green, 2014; Mishra & Mallik, 2014); Tong and Adamson, 2015; In South Africa, Polia (2009) observes increased workload for learners who are required to satisfy the SBA requirements for all seven subjects in the case of National School Certificate (NSC). Oberholzer (2010) reports that overload on students in respect of the number and type of tasks required for SBA is of great concern in South Africa, with students in year 12 required to do 61 tasks in three terms. The tasks include projects, oral presentations, demonstrations, performances, tests, examinations and practical demonstrations (DBE, 2011). Review of the Implementation of the National Curriculum

Statement (2009), in Oberholzer (2010:5), gives a synopsis of the findings of the curriculum review process on the issue of overload on teachers and students as;

In terms of the usefulness and quality of assessment methods, parents and teachers widely cited the unnecessarily complex and unhelpful assessment demands on themselves and their children/ students, such as portfolios, research tasks and projects. Apart from the generally superficial nature and lack of educational rigor of these tasks, the review team was concerned that they do not offer equal opportunities for learning across communities. Rural and economically disadvantaged students do not have access to appropriate resources, nor do their parents understand the complexity of assessments such as research projects, resulting in futile activities.

The current study sought to interrogate the issues of divergent expectations, negative attitudes and learner workload reported by learners, during the focus group discussions with learners.

3. VIEWS OF PARENTS ON THE UNDERSTANDING OF THE ROLES OF SCHOOL- BASED ASSESSMENT

Participation of parents in the education of their children is critical, hence a multitude of studies, public debate and policy formulation from different corners of the world on parental involvement (Department for children, schools and families (DCSF, 2008; Emerson, Fear, Fox, & Sanders, 2012; Kimu, 2012; Mafa & Makuba, 2013; McNeal, 2014; O'Hehir & Savelsberg, 2014; National Education Association (NEA), 2008). Parents are important because they decide the school to be attended by their children and provide support to their children, and the opportunities for involvement (Emerson, Fear, Fox, & Sanders, 2012; O'Hehir & Savelsberg, 2014). Recent studies in Africa on parental involvement in Kenya (Kimu, 2012), in South Africa (Ramalepe, 2015), and in Zimbabwe (Mafa & Makuba, 2013), confirm the importance of parental involvement in teaching and learning.

Literature known to the researchers on views of parents on SBA is very thin (Cheng, Andrew & Yu, 2010; Mishra & Mallik, 2014). Cheng et al. (2010) report in their study on impact and consequence of SBA that it is one of the few that have provided linked results from two major stakeholders; students and parents on the impact of School-Based Assessment. Currently, no study known to the researcher has been done on the views of parents, teachers and learners on SBA in Mpumalanga province of South Africa. This study seeks to fill this gap.

The few studies known to the researchers on views of parents on the role of SBA raise mixed views on the issue. From their study on the views of parents in India, on parental involvement in the implementation of SBA, Mishra and Mallik's (2014) findings present a gloomy picture that: parents are unaware of the SBA system (90%). In Singapore, Chong (2009) reports that parents have the perception that SBA is more subjective compared to traditional timed, pencil and paper external examinations and as such, are perceived to be less reliable. In Tanzania, Byabato and Kismo, (2014) conclude that parental involvement/participation in the implementation of SBA was minimal.

These findings are in contrast with the observation by Noorazam (2011) in Nair et al. (2014) that many parents are now educated and should be able to guide their children at home. Nair et al. (2014) assert that SBAs enable parents to get involved in the

education of their children, and make parents and teachers partners in the education of their children. In South Africa, parents' view is that South African schools require an educational assessment framework that empowers parents with information on their children's performance (Van der Berg, Taylor, Gustafsson, Spaull & Armstrong, 2011). Parents' views seem to be the missing link in the implementation of SBA in South African schools. The focus of this paper was to fill the gap on understanding the role of parental involvement in the implementation of SBA and the enhancement of teaching and learning.

Currently, assessment literature is dominated by research studies on teachers. This scenario needs to change if permanent solutions to the implementation challenges on SBA are to be found. The argument was that schools are a complex social system, and any change in the way of doing things need to involve the whole system if it was to be effective. It was high time assessment landscape should get over the teething problems in the implementation of SBA. Hard lessons need to be learnt from Sweden and Finland's experiences. There was need for a paradigm shift on the perception of how teachers can help learners and parents to how learners and parents can help the teacher in the implementation of SBA.

The choice of Total Quality Management as a theory to direct the paper blends with the study in that teacher, learner and parent are systems, which must be synchronised in the implementation process. The current study was guided by the mixed methods approach, unlike most of the studies reviewed which were either qualitative or quantitative, creating a methodological gap.

RESEARCH OBJECTIVE

This study sought to:

- Examine teachers, learners and parents' understanding of the roles of School-Based Assessment in the teaching and learning process.

The study was unpacked by responding to the following question:

- What are the views of teachers, parents and learners on their undrstanding the role of School-Based Assessment in the learning and teaching process?

4. RESEARCH METHODOLOGY

Mixed Methods was the methodology of choice as it allows the researchers to use the strengths of the qualitative approach to overcome the weaknesses of the quantitative approach by having both in a research study (Caruth, 2013). Ponce and Pagán-Maldonado (2014) assert that mixed studies address research problems in which clear objective and subjective aspects are manifested, that require the use of quantitative and qualitative approaches. In agreement, Antwi and Hamza (2015) reveal that, it is important to understand both the subjective and objective realities in our world. Educational issues like implementation of School-Based Assessment are a complex phenomenon with multiple realities and have a huge impact on the direction of any educational system. This enhanced the body of knowledge and presents a more robust conclusion, and generates more questions of interest for future studies since the researcher was not limited to one research design. A mixed method also allows the integration component, which gives readers more confidence in the results and the conclusions drawn from the study (Greene, 2007 in Almalki, 2016). To unpack the SBA implementation issues in SA high schools, a pragmatic paradigm was adopted. A major tenet of pragmatism is that quantitative and qualitative methods are compatible (Molina

Azorín & Cameron, 2010). Malina et al. (2011) note that, combined quantitative and qualitative methods enable exploring more complex aspects and relations of the human and social world. A mixed methods approach was adopted, guided by the concurrent triangulation design. Quantitative and qualitative findings were triangulated to establish the common understanding of the roles of SBA in the teaching and learning. The sample size for this study was 140 respondents for the quantitative sample and 88 participants for the qualitative sample. Data were collected using closed-ended (structured) and open-ended (unstructured) Questionnaires, interviews and focus group discussions. Computer software programme SPSS version 2.1 was applied in the statistical analysis of data. Descriptive statistics in form of frequencies, mean and standard deviation were used to present and compare the data.

Results

In pursuit of answers to the research, the study sought to examine the views of teachers, learners and parents on their understanding of the roles of School-Based Assessment in the teaching and learning process. Qualitative data was collected from the semi-structured questionnaires for teachers and learners, semi-structured interviews with SGB chairpersons and FGDs with learners. Qualitative data was presented as direct extracts after a thematic analysis. Table 1 shows teachers' responses to the closed questions in the semi- structured questionnaire which sought to address the research question.

5. VIEWS OF TEACHERS ON THE ROLES OF SBA IN HIGH SCHOOLS

Table1: views of teachers on the roles of SBA in high schools (N=53)

Roles of School - Based Assessment	SA	A	N	D	SDG	Total
	5	4	3	2	1	
1. Enable teachers to give feedback to students frequently	26 (49.1)	24 (45.3)	2 (3.8)	1 (1.9)	0 (0)	53 (100)
2. Enable students to demonstrate their ability in areas which cannot be assessed in public examinations	7 (13.2)	34 (64.2)	3 (5.7)	7 (13.2)	2 (3.8)	53 (100)
3. Promote creative teaching and learning activities	16 (30.2)	27 (50.9)	9 (17.0)	1 (1.9)	0 (0)	53 (100)
4. Empower teachers in the evaluation process	15	31	5	2	0	53

	(28.3)	(58.5)	(9.4)	(3.8)	(0)	(100)
5. Provide a stable and continuous pressure free assessment	9 (17.0)	30 (56.6)	12 (22.6)	2 (3.8)	0)	53 (100)
6. Enable teachers to decide what to teach	11 (20.8)	25 (47.2)	3 (5.7)	13 (24.5)	1 (1.9)	53 (100)
7. Enable students to have a better understanding of their own strength and weaknesses in learning	18 (34.0)	31 (58.5)	2 (3.8)	2 (3.8)	0 (0)	53 (100)
8. Promote continual improvement and confide building	13 (24.5)	32 (60.4)	6 (11.3)	(3.8)	0 (0)	53 (100)
9. Complement public examinations	17 (32.1)	29 (54.7)	6 (11.3)	1 (1.9)	0 (0)	53 (100)
10. Help learners to develop positive attitude in learning	14 (26.4)	28 (52.8)	9 (17.0)	2 (3.8)	0 (0)	53 (100)
11. Enhance learner collaborative skills	9 (17.0)	31 (58.5)	9 (17.0)	4 (7.5)	0 (0)	53 (100)

SA= Strongly Agree; A= Agree; D= Disagree; SDA= Strongly Disagree; Std. D= Standard Deviation. (Mean 1- 2.4 = low; 2.5 - 3.4 = moderate; 3.5- 5.0 high)

The results from open ended questions in the questionnaire show that teachers confirm the importance of SBA giving feedback to learners in the teaching and learning process with the highest affirmation value of 50(94.4%). Enabling teachers to decide what to teach had the least affirmation value of 36(68%). The results show that SBA is being implemented as shown by a high prevalence of SA response and a low prevalence of the SDG on the Likert scale on all the given roles. Teacher responses converged with learners submissions in the FGD (qualitative). Some of the excerpts from learners were:

Teachers look for learner's mistakes and how to help them (FGD1).

Prepare learners for final examinations (FGD2; FGD3).

SBA tells what the learner understands and what the learner does not understand (FGD5).

Learners work in groups work and will be able to check own understanding and challenges (FGD2).

SBA marks can act as wake up call to learners who did not prepare if they get a poor mark they co-operate to improve their marks (FGD6).

6. VIEWS OF LEARNERS ON THE ROLES OF SBA IN HIGH SCHOOLS

Table 2: Views of learners on the roles of SBA in high schools (N=68)

Roles of school - based assessment	SA	A	N	D	SDG	Total	Mean	Std. D
	5	4	3	2	1			
1. Enable teachers to give feedback to students frequently	37 (54.4)	27 (39.7)	3 (4.4)	1 (1.5)	0 (0)	68 (100)	4.47	.657
2. Enable students to demonstrate their ability in areas which cannot be assessed in public examinations	28 (41.2)	22 (32.4)	10 (14.7)	6 (8.8)	2 (2.9)	68 (100)	4.00	1.09
3. Promote creative teaching and learning activities	45 (66.2)	15 (22.1)	7 (10.3)	1 (1.5)	0 (0)	68 (100)	4.53	.743
4. Empower teachers in the evaluation process	25 (36.8)	38 (55.9)	4 (5.9)	1 (1.5)	0 (0)	68 (100)	4.28	.643
5. Provide learners with a stable and continuous pressure free assessment	32 (47.1)	25 (36.8)	9 (13.2)	2 (2.9)	0 (0)	8 (100)	4.28	.808
6. Enable teachers to decide on what to teach	31 (45.6)	17 (25.0)	2 (17.6)	6 (8.8)	2 (2.9)	68 (100)	4.01	1.126

7. Enable students to have a better understanding of their own strengths and weaknesses in learning	36 (52.9)	23 (33.8)	8 (11.8)	1 (1.5)	0 (0)	68 (100)	4.38	754
8. Promote learner continual improvement and confidence building	29 (42.6)	21 (30.9)	12 (17.6)	4 (5.9)	2 (2.9)	68 (100)	4.04	1.057
9. Complement written public examinations	22 (32.4)	30 (44.1)	14 (20.9)	2 (2.9)	0 (0)	68 (100)	4.06	.808
10. Enhance learner development of positive attitudes in learning	22 (32.4)	26 (38.2)	17 (25.0)	2 (2.9)	1 (1.5)	68 (100)	3.97	.914
11. Enhance learner collaborative skills	25 (36.8)	25 (36.8)	16 (23.5)	1 (1.5)	1 (1.5)	68 (100)	4.06	8.96
12. Reduce reliance on standardised external examinations	14 (20.6)	24 (35.3)	12 (17.6)	15 (22.1)	3 (4.4)	68 (100)	3.46	1.177

SA= Strongly Agree; A= Agree; D= Disagree; SDA= Strongly Disagree; Std. D= Standard Deviation. (Mean 1- 2.4 = low; 2.5 – 3.4 = moderate; 3.5 – 5.0 high)

Closed questions in the questionnaire revealed that, learner respondents on SBA enabling teachers to give feedback to students frequently, correlates positively with findings from teacher respondents with the highest affirmation of 64(94,1%). The lowest on the affirmation was 'reducing reliance on standardised external examinations' which had 38(55, 9%). Overall, the views showed that learners understood the role of SBA. The SD showed a slight deviation from the mean, which was between moderate and high.

Learner responses from closed questions in the questionnaire converged with teacher responses from the open-ended questions in the questionnaire. Some of the teachers responses (qualitative) on their view on the role of SBA were;

Check progress of learner preparedness for exams (T40).

Enables teachers to evaluate their teaching methods, and strategies to improve learner performance (T9)

Helps teachers to trace the problems encountered by learners (T27).

Learners identify their strong and weak areas in the subject (T22).

Views of parents on their understanding of the roles of School- Based Assessment

Responses of parents (qualitative) from interviews converged with teacher and learner responses. Some of the parents had this to say on the role of SBA in the teaching and learning process.

Teachers are able to identify knowledge gaps when marking which assist in deciding what to teach (SGB1).

Teachers structure their content when teaching (SGB4).

Learners work in groups and will be able to check own understanding and challenges (SGB2).

Boosts the marks of the learners (SGB6)

SBA has a practical component which will be consolidated theoretically in public exams (SGB1; SGB5).

The results of the case studies inspired the evolution of the concept of 'learning-as-connection' and the books *Learning Today for Tomorrow: Sustainable Development Learning Processes in Sub-Saharan Africa* (Lotz-Sisitka & Lupele, 2012) and *Education for Sustainable Development and Schooling in Africa* (edited by Wilmot, Lotz-Sisitka, Shumba, & Lupele, 2017). With respect to Science Education, we have explored how the notion of learning as connection can lead to a balanced treatment of disciplinary knowledge, socio-ecological issues and other humanistic concerns in Science Education (Shumba, 2012; Shumba & Kampamba, 2012/13; Shumba & Kampamba, 2017) and proposed pedagogical innovations and transformative pedagogies in Science Education (Shumba, Kasali, Choobe, Mutondo, Maseka, and Mbewe, 2016)). Overall, we argue for a framework and an approach of integrating and connecting the scientific and technological content of curriculum and change projects to real life contexts, including social contexts. For example, we argue the need to gain scientific knowledge of, for example, climate change science, should not be the end all of learning in Science Education (Shumba, et al, 2016). Learning must include an understanding of the development issues associated with climate change and an appreciation of practical ways to act and do things to cope with or mitigate its impacts. A reflective change in the pedagogical content knowledge of Science and Technology educators premised on the notion of ESD pedagogical content knowledge (ESD PCK) was postulated (Shumba & Kampamba, 2012/13). The ESD PCK foregrounds the relevance of understanding ESD concepts, principles, and values (i.e. ESD content knowledge), and the appropriate teaching and learning approaches with which to interrogate and act on them (i.e., the ESD pedagogy). Therefore, ESD PCK relates to teacher expertise to connect subject content and concepts to issues of concern to society's development. This ability to tackle the universal concepts of science and contextualise them to local real-life issues and problems will lead to attainment of 21st century learning outcomes. This is defensible if we take de Jong's (2005) suggestion that an education in science should develop capabilities to form opinions and make political decisions on science-technology-society issues. We see science education as a knowledge area and a process that is beneficial to society, and as such, it must take its full share of responsibility for educating for sustainability thinking and action. For this to happen, social and humanistic issues in the sustainable development discourse must not remain at the periphery of science and technology learning.

7. DISCUSSION

The study sought to establish the views of teachers, learners and parents of their understanding the roles of SBA in teaching and learning. Findings confirmed that schools were implementing SBA basing on the level of understanding but teachers, learners and parent's levels of understanding was varied.

- Providing feedback to learners

Tong and Adamson (2015) revealed that, students expressed reservations about the value of SBA as mode of assessment and were unable to benefit from the feedback they were receiving from teachers. In SA, literature revealed lack of feedback as one of the critical factors hindering effective implementation of SBA in high Schools (Umalusi, 2015). Contrary to literature revelations, teacher and learner responses to the closed questions in the questionnaire and to open-ended questions in the questionnaire, FGDs and submissions by parents in the interviews confirmed having sound knowledge of how SBA assist in the teaching and learning process by providing feedback. Confirmation of feedback as a key role of SBA meant that teachers, learners and parents appreciate the value of SBA and would support its implementation.

- Assessing what cannot be assessed by public exams

School-Based Assessment is used to assess soft skills that cannot be assessed in public examinations (Darling–Hammond & Wentworth, (2010). Green (2014) opines that some important skills such as creativity, communication, independent learning and teamwork are difficult to assess in an examination, yet they are key to student's future success in their education and in the world of work. In concurrence teachers, learners and parents' responses revealed the role of SBA as being able to assess aspects, which cannot be assessed in public exams and concurred with the quantitative findings. Having the ability to test all skills enable SBA to offer total customer satisfaction which TQM management philosophy (Wani & Mehraj, 2014).

- Promote creative teaching and learning activities

Responses for both teachers and learners posited that SBA promotes creative teaching and learning. This was contrary to findings by Tong and Adamson's (2015) finding that, students in their study were not convinced that SBA provided them with a more enjoyable and less stressful assessment experience. However, findings were in tandem with the TQM principle of customer focus in that organisations depend on the users of their products, and the need to understand their current and future needs, as well as meet their demands and exceed their expectations (Luburić, 2014).

- Evaluation of teaching methods and strategies

Respondents and participants reported that SBA enabled teachers to evaluate their teaching methods and strategies. SBA would therefore, assist teachers to have self-introspection of their teaching as depicted by the results of the assessment. Learners would be able to make a personal judgment of their efforts. This is in line with TQM as there will be a realignment of the teaching and learning processes as dictated by the TQM, the theory informing this study. Mansor et al. (2013) revealed that teachers believed the implementation of SBA encouraged personal progress. The finding from the study and from Mansor et al. (2013) confirms the critical role of SBA in enabling teachers to

evaluate their teaching methods for enhancing teaching and learning.

- Provide learners with a stable and continuous pressure free assessment

The study results show a high levels of teachers who are sitting on the fence on the role of SBA providing a stable and continuous pressure free assessment. This confirms Chong (2009) observation that teachers have the perception that SBA is more subjective compared to traditional timed pencil and paper external examinations. Ironically, responses for students and parents show high levels of affirmation. Findings from parents are in contrast to findings by Mishra and Mallik's (2014) from literature that parents were unaware of SBA system.

- Enable teachers to decide on what to teach.

Literature revealed teacher's inadequate professional knowledge as a major cause of the ineffective implementation of SBA (Reyneke, 2016). Teachers viewed SBA as a means of preparing learners to succeed in national examinations rather than as a means of enhancing teaching and learning (Ndalichako, 2014). The result of the current study confirms the literature review findings and shows the lowest affirmation on the role of enabling teachers to decide what to teach by both teachers and learners.

- Identifying their strengths and weaknesses

Learners learn better by discovering their strengths and weaknesses as they reinforce on the strengths and build on the weaknesses. Teachers as the architects of the learning process would be able to reconfigure and recalibrate their pedagogic styles. This was confirmed in literature that, when SBA was at its best, it can be motivating and productive to students, helping them to know how well they are doing and what else they need to do (Gobena, 2013). Study results showed that responses of learners and teacher converged on SBA assisting learner to have a better understanding of strengths and weaknesses to enhance learning.

- Promote learner continual improvement and confidence building

Gobena (2013) asserts that, when SBA is at its best, it can be motivating and productive to students, helping them to know how well they are doing and what else they need to do. Findings from the study revealed that teachers and learners were undecided on SBA promoting learner continual improvement and confidence building.

- Preparation of learners for final examinations

As a teaching and learning tool, SBA prepares learners for final examinations (Tong & Adamson, 2015). However, Mishra and Mallik (2014) observed that, learners do not enjoy examinations since teachers do not teach properly what to write in the examination. This perception concurs with Ndalichako's (2014) finding that teachers tend to view SBA as a means of preparing learners to succeed in national examinations rather than viewing SBA as a means for enhancing teaching and learning. Findings from the study, particularly from interview probing, confirmed the critical role of SBA of preparing learner for final exams.

- Developing positive attitudes

Study results show convergence on views of teachers and parents in both quantitative and qualitative findings on SBA developing positive attitudes. Learners on the other hand,

revealed a high prevalence of uncertainty on SBA, assisting them to develop a positive attitude. A high prevalence of uncertainty on learner responses in the findings for the current study confirms Tong and Adamson's (2015) revelation that students seemed to be skeptical about the capacity of SBA performing the functions ascribed to it, such as advancing their learning. This was contrary to TQM theory, which confirms learners as one of the internal customers in an educational context, and the quality of education being measured through satisfying the agreed learner needs and expectations. (Arcaro 2005 in Supramono & Larasati 2014; Wami & Mehraj, 2014).

- Enhancing collaborative skills

SBA helps to develop positive attitudes and enhances collaborative skills that promote creative teaching and learning activities (Mansor et al., 2013). Findings in the current study revealed that learner responses on SBA assisting learners in enhancing collaborative skills were polarised, with a high prevalence of the neutral response. The overall picture, however, was that views of teachers and learners were not in total consonance on SBA enhancing collaborative skills despite one of TQM principles advocating SBA activities to be customer focused, so that teachers, learners and parents can attain satisfaction from educational service. However, teacher responses confirmed the value of SBA in enhancing collaborative skills to ensure teaching and learning.

- Reduce reliance on standardised external examinations

Teachers viewed SBA as a means of preparing learners to succeed in national examinations rather than as a means of enhancing teaching and learning (Ndalichako, 2014).Contrary, study findings revealed that learners were not of the view that SBA reduces reliance on external examinations.

8. CONCLUSION

Findings from both quantitative and qualitative data show convergence on most of the roles of SBA in the teaching and learning process. Quantitative data findings agreed on the significance of SBA in the teaching and learning process. In addition, the quantitative data findings from teachers and learners reveal that SBA provides feedback in the teaching and learning process, which was a prerequisite for effective learning. Both respondents also confirmed that SBA enables learners to have a better understanding of their strengths and weaknesses, which assisted in the teaching and learning process as learners had to focus on both for an enhanced performance in their schoolwork. Another view raised by both teachers and learners was that SBA complements public exams in that, SBA tasks were prepared on the content covered, which was the same content to be covered in exams. Finally yet importantly, both respondents were in tandem on the view that SBA assisted teachers in deciding what to teach.

The findings from the quantitative data and qualitative data were in total convergence on the role of SBA in the implementation of School-Based Assessment. The implication was that teachers, learners and parents were well informed on the value of SBA in the teaching and learning process, and would therefore, support its implementation.

What emerged from the study findings was that participants and respondents were aware of the role of SBA in the education system. While the results showed that stakeholders acknowledged different roles of SBA as an assessment tool, there were sporadic incidences of questionable results. School-Based Assessment was being

implemented and benefiting the education system.

9. RECOMMENDATION

Assessments serve as a critical component of any educational system. However, teacher attitude towards SBA as an assessment tool left a lot to be desired. Further work needs to be done to establish the reasons for teacher negative attitude towards SBA implementation in schools.

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