

EDITORIAL POLICY

This policy describes guidelines in the publication process of our journal.

African Perspectives of Research in Teaching and Learning (APORTAL) ISSN 2521-0262 is an international, double-blind peer-reviewed journal that publishes original articles encompassing a range of current topics related to teaching and learning from all fields, disciplines and subjects. Articles may be rooted in disciplinary, interdisciplinary or transdisciplinary domains. The main thrust of the journal, which will be published once a year is directed at bringing to the fore discussions, debates and issues as they pertain to teaching and learning across a wide spectrum of education contexts in Africa without a commitment to a particular approach, methodology or worldview. It is concerned with and devoted to high quality articles that unravel, explain or problematize contemporary complexities of teaching and learning. It also embraces the ideal of building a new generation of teaching and learning scholars through the promotion of primary research by new and established researchers

1. Submission of manuscript

Authors should read the “Instruction for Authors” on the journal’s webpage before making a submission. Manuscript should be prepared according to the style and specifications of the journal’s policy. Papers must be submitted electronically. The submission must be e-mailed to aportal.journal@ul.ac.za and addressed to: The Editor, African Perspectives of Research in Teaching and Learning

2. Review process

The review process is an important aspect of the publication process of an article. It helps an editor in making decision on an article and also enables the author to improve the manuscript. APORTAL operates a double blind review process. Author(s) identity is removed from the manuscript and shielded from the reviewers during the review process. The reviewer is left with only the manuscript without any information that might enable him/her uncovers the identity of the author(s). Information removed includes the author(s) name, address/affiliation, country, phone/fax and email.

The review process consists of the following: 1. The editors review the submitted manuscript for proper format and consistency with the mission of the journal. The author(s) is notified if the manuscript is deemed inappropriate for further consideration. 2. Manuscripts that pass the initial review are sent to an associate editor and a minimum of two reviewers for formal review. 3. The editors evaluate comments and recommendations of the reviewers and the associate editor and informs the author(s) of the decision regarding the publication of the manuscript (reject, accept, or revise/resubmit). The editors’ decision and comments, without identifying information, are forwarded to the associate editors and reviewers. 4. Requested revisions are returned to the same reviewers. In addition to the revised manuscript, the author(s) should submit (a) responses to the reviewer comments that restate the comments and identify how and where the comment is addressed in the revision (b) certificate of language editing (c) TURNITIN report for plagiarism.

3. Concurrent reviews

Manuscripts under consideration by another journal or other publisher should not be submitted. The submitting author will be asked to verify this during the web-based submission process

4. Resubmissions

Manuscripts that have been rejected are not eligible for further consideration by the same journal and thus should not be resubmitted. If a revision is allowed, it will be explicitly stated in the Editor's decision. Other revisions of previously rejected manuscripts will be promptly returned to the authors without review.

4. Changes in authorship

Whenever there is a need to make changes in the authorship of a manuscript or a published article, the changes will be implemented according to APORTAL specification. Only corresponding authors can make request for a change in authorship.

5. Plagiarism

As defined by the Merriam-Webster dictionary, to plagiarize is “to steal and pass off (the ideas or words of another) as one's own,” “use (another's production) without crediting the source,” or to “present as new and original an idea or product derived from an existing source” (<http://www.merriam-webster.com/dictionary/plagiarize> Accessed March 29, 2017). The American Marketing Association considers other forms of plagiarism to include “self-plagiarism”—instances in which an author borrows from his or her own previously published work without the proper citation. It is also unacceptable to submit manuscripts to APORTAL journals that have previously been published anywhere in any language. (<https://www.ama.org/publications/Pages/ama-editorial-policy-journals.aspx> }

6. Processing fees

The following processing fees shall be paid once the article has been accepted for publication: Local-R4500.00 and international-\$300.

EDITORIAL BOARD

Editor-in-Chief

Prof Newman Wadesango: Educational Management (Researcher & Senior Academic Development Consultant in the Centre for Academic Excellence- University of Limpopo, RSA)

Sub-editors

1. **Prof Nyna Amin:** Curriculum Studies (Associate Professor in the department of Curriculum Studies- University of KwaZulu-Natal, RSA)
2. **Prof Owence Chabaya:** Educational Management (Senior Academic Development Consultant in the Centre for Academic Excellence -University of Limpopo, RSA)
3. **Prof Kwena Masha:** Mathematics Education (Director in the Centre for Academic Excellence-University of Limpopo, RSA)

Internal board members

1. **Dr SK Malatji:** Curriculum and Professional Studies (Academic Development Consultant in the Centre for Academic Excellence -University of Limpopo, RSA)
2. **Prof T Netshisaulu:** Science Education (Acting Director in the school of Physical and Mineral Sciences- University of Limpopo, RSA)
3. **Pro S Maoto:** Maths Education (Dean in the Faculty of Humanities-University of Limpopo- RSA)
4. **Prof S K Singh:** Maths Education (Associate Professor in the Department of Maths Education-University of Limpopo, RSA)

National board members

1. **Prof A Bayaga:** Mathematics Education (HoD in the department of Neuro-Mathematics and Information Systems & Technology Risk- University of Zululand, RSA)
2. **Dr Rubby Dhunpath:** Educational Studies (Director of Teaching & Learning- University of Kwa-Zulu Natal, RSA)
3. **Dr J Garraway:** Philosophy of Education (HoD: Academic Staff Development- Cape Peninsula University of Technology, RSA)
4. **Dr Moyra Keane:** Maths Education (Training Consultant in the Centre for Learning, Teaching & Development -Witwatersrand University, RSA)
5. **Prof Sioux McKenna:** Scholarship of Teaching and Learning (Coordinator: PhD in Higher Education programme -Rhodes University, RSA)
6. **Prof S Mashau:** Curriculum Studies (Associate Professor in the Department of Educational Management- University of Venda, RSA)

7. **Dr Milton Nkoane:** Educational Management (HoD of the School of Education Studies- University of Free State, RSA)
8. **Dr N Toni:** Scholarship of Teaching and Learning (Director of the Teaching and Learning Centre- University of Fort Hare, RSA)
9. **Dr Percy Sepeng:** Maths Education (Director of the School for Teacher Education and Training- North West University, RSA)
10. **Prof C Maphosa:** Curriculum Studies (Research Professor in the Faculty of Education- University of Fort Hare, RSA)
11. **Dr Reshma Subbaya:** Higher Education: Director: Mentoring, Evaluation and Research. Mangosuthu University of Technology, RSA
12. **Prof D Maleka:** Science Education (Associate Professor in the department of Medical Sciences-Sefako Makgatho University, RSA)

Continental board members

1. **Dr N Kadhila:** Higher Education Studies (Director of Quality Assurance-University of Namibia, Namibia)
2. **Prof Mercy Kurebwa:** Educational Management (Professor in the Department of Educational Management-Zimbabwe Open University, Zimbabwe)
3. **Prof Stanley Modesto:** Dean of Faculty of Business Management- University of Botswana, Botswana)
4. **Prof Paul Mupa:** Educational Management (Associate Professor in the Department of Educational Management- Zimbabwe Open University, Zimbabwe)
5. **Dr Mary Goretti Nakabugo:** Educational Assessment (Twaweza Lead and Uwezo Manager- UWEZO-Uganda)
6. **Prof Overson Shumba:** Science Education (Research and Innovations Coordinator in the School of Mathematics and Natural Sciences- Copperbelt University, Zambia)

International board members

1. **Prof Lynn Fendler:** Curriculum and Instruction (Director of the College of Teacher Education- Michigan State University, USA)
2. **Prof Kenneth Jorgenson:** History and Political Science Education (Professor in the Department of Business and Management- Aarlborg University, Denmark)
3. **Prof Angela Kocker:** Educational Psychology and Counselling (Professor in the department of Educational Psychology and Counselling- Wake Forest University- USA)
4. **Prof Punya Mishra:** Educational Psychology & Educational Technology (Michigan State University- USA)
5. **Prof Irfan Muzaffar:** Curriculum, Instruction, and Education Policy (Education

Researcher in the school of Education-Adam Smith International, Pakistan/UK)

6. **Prof Erlend Eidsvik:** Educational Studies (Associate Professor in the Faculty of Education- Western Norway University of Applied Sciences, Norway)

TABLE OF CONTENT

Editorial Comment.....	1
Wadesango, N	
Examining views of teachers, parents and learners on their understanding of the role of School-Based Assessment in the learning and teaching process....	4
Chipfiko, J and Maphosa C	
Using internship as a tool for professional development in universities: a case of the Zimbabwe Open University....	22
Chaminuka, L and Mtezo, JZ	
The significance of university-industry collaboration in developing knowledge-based economies: the SADC perspectives....	33
Gomwe, P	
Relevance of the clothing curriculum to industry: A case study of a polytechnic in Zimbabwe.....	49
Mupfumira., IM, Ndamba, GT and Motsi E	
A comparative study of carbon footprint and opportunity costs of a distance education and a conventional university.....	63
Modesto, ST., Litt D., Phil	
Interrogating the implications for the exclusion of family, religious and moral education in infant education in Zimbabwe’s updated curriculum.....	82
Muchabaiwa W., Jakachira G and Kanda M	
Causes and impacts of private tuition in mauritius- a stakeholder analysis.....	94
Cassam SM and Vinayagum	
A review of quality education: the role of the community in Ghana.....	117
Buah, Emmanuel and Asah A	
The use of a digital learning system for developing pedagogical skills: ideas for research-based practice.....	129
Hanson R and Kutorglo E	

EDITORIAL COMMENT

Universities contain some of the best brains the world over. They are a wonderful local, national and international asset. Therefore, Universities must take a leadership role in the pursuit of an innovative and highly skilled economy. They are also bridges between businesses and the knowledge that can make a difference to their success.

It is essential that we now reposition universities as the institutions to influence the direction and quality of our research and ensure that they become the elite institutions that they were intended to be. We should be striving towards a research community, which is defined by increased global connectedness and networks with international research peers.

At the same time our tertiary system the world over should be dominated by collaboration and the sharing of knowledge between tertiary education organisations and other research providers, and the communities that they serve.

The tertiary sector must take responsibility for engaging effectively with these communities to disseminate new ideas, products and services that will be relevant.

The pages of this issue consist of empirically derived qualitative and statistically analyzed studies, cases, scenarios, problems, and commentaries on a wide range of issues that bear on teaching and learning.

Jack Chipfiko and Cosmas Maphosa sought to examine teachers, learners and parents' understanding of the roles of School-Based Assessment in the teaching and learning process. The study found out that there is a convergence on most of the roles of SBA in the teaching and learning process. Further, SBA provides feedback in the teaching and learning process, which is a key element for effective learning. SBA fosters better student understanding of their strengths and weaknesses. An understanding of one's strengths and weaknesses promote positive student performance. Both teachers and learners suggested that SBA complements public exams as the tasks focus on content covered providing students more opportunities for revision. Respondents agreed that SBA assisted teachers in deciding content to focus. Further research is recommended to establish reasons for teacher negative attitude towards SBA implementation in schools.

Lilian Chaminuka and Justina Mtezo: Research concluded that Open University students as compared to students who attend lectures on a daily basis are at a disadvantaged and companies are sceptical about employing them as they lack the necessary skills required within the workplace. To mitigate this, internships have been encouraged, to equip the students for the various activities that take place within the workplace. Internships allow for creativity and students are motivated and stand a better chance of being employed as their counterparts do. This therefore calls for universities to develop and maintain relationships with companies to ensure that their students are catered for in as far as internships are concerned as recommended by the researchers.

Petros Gomwe investigated the Significance of University-Industry Collaboration in developing Knowledge-Based Economies. A positive relationship between the University and Industry is recommended if ever the SADC region is to experience development. The researcher focused on how these two entities will benefit from each other. In his discussion, he noted that it is futile for universities to keep knowledge to themselves without sharing it to the

APORTAL VoL3 (1)2019

industry where they have the potential of developing the SADC region using the knowledge. The researchers suggested that now there is insignificant collaborations taking place, and until there is reciprocal efforts in creating collaborations the SADC region is still a long way from realising knowledge-based economies, meaning we will not realise development as early as would have anticipated as a region. Gomwe recommends that the government should come up with policies that facilitate University-industry collaborations while on the other hand universities should desist from over-dependency on government funding.

Isabel Makwara Mupfumira, Gamuchirai Tsitsi Ndamba and Emily Motsi in a case study carried out in Zimbabwe focused on the Relevance of the Clothing Curriculum to Industry. The researchers raised a concern that higher education institutions could be providing students with skills and competences, which might not be relevant for employment industry. The researchers sought to investigate whether a poly technical college in Zimbabwe was giving the students relevant skills and competencies for the industry. It was concluded that there should be consultation that takes place between colleges and industry to ensure that the curriculum offered to the students equips them with the relevant skills and competencies. The research found out that the students were being offered basic skills and competencies, which however, were not relevant in the industry as graduates ended up not getting employment in the clothing design and construction industry, and sought for better opportunities elsewhere.

Tichapondwa Modesto touched on Carbon Footprint and Opportunity Costs of a Distance Education and a Conventional University in the Botswana context. He sought to raise awareness on the two costs of education to which we do not pay attention. The discussion showed that face-to-face learners use more resources for their education, and miss the opportunity to work whilst distance learners miss the opportunity for government funding. Therefore, the researchers argued that there was need for governments to work on providing sustainable education taking into consideration the environmental impact and opportunity cost. Recommendation for further study was to investigate how the quality of distance learning differs from that of face-to-face after establishing the opportunity cost and carbon footprint.

The study conducted by Muchabaiwa Jakachira and Kanda interrogates the continuities and discontinuities of Zimbabwe's updated curriculum focusing on the exclusion of Family, Religion and Moral Education (FRME) in the infant school. The study reveals that FRME as one of the learning areas is only introduced at grade three. Paradoxically, the philosophy underpinning the updated curriculum emphasises morality and yet it denies a space for FRME in the infant school curriculum. The deliberate omission of FRME as a learning area in the infant school curriculum does not only pose challenges in terms of children's moral development, but also becomes a disjuncture in terms of a spiral and developmental curriculum.

According to Shakeel Mohammad and Cassam Vinayagum Chinapah, the research suggested that there are two schools of thought addressing the issue of private tuition Vs the school system. There was a justification of private tuition where the respondents argued that private tuition has a significant effect on academic success. On the other hand, the second school of thought is that private tuition is shadowing the school system and is decaying the Mauritian society.

Buah Emmanuel and Akuffofrank Asah focused on the role of community participation in Ghana towards quality education. The research indicates that the success of education is a collaborative effort of both the school and the community. Findings however, showed that communities are not participating in the success of Ghana education as they have become despondent because of politicians who politicise every activity that is related to education. The

APORTAL VoL3 (1)2019

government has misled the community by claiming that they will fund schools in all the development as well as provide resources needed for a conducive atmosphere of teaching and learning. However, their claims are never fulfilled resulting in the schools being in a dilapidated condition and compromising the quality of education. The researchers therefore recommended that the government should empower the communities and allow them to participate in the Education of their societies as there a given a chance to come up with constructive education policies.

In this fourth Industrial Revolution, technology has been greatly advocated for as a way of enabling technology enhanced learning. The research by Ruby Hanson and Emmanuel Kutorglo sought to evaluate whether a digital learning system could provide learners with enhanced interaction modes to improve their pedagogical skills. The findings showed that pedagogical skills for professional development were enhanced and the digital learning system increased interaction between teacher and trainees as well as trainee-to-trainee interactions. However, some internet connection challenges were also identified which the researchers feel they can easily be resolved with the improvement in power supply.

I look forward to hearing from colleagues about them as well as about any other matters of editorial policy. I also, of course, look forward to receiving your manuscripts.

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

Jack Chipfiko

*Jacob Mdluli High School
Mpumalanga, South Africa*

Cosmas Maphosa

Institute of Distance Education
University of Eswatini, Eswatini

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

The role of school-based assessment

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; Mkwanzani, 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

The role of school-based assessment

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, Spaul & 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 understanding 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

The role of school-based assessment

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

Jack Chipfiko and Cosmas Maphosa

	(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	53 (100)
8. Promote continual improvement and confide building	13 (24.5)	32 (60.4)	6 (11.3)	(3.8)	0	53 (100)
9. Complement public examinations	17 (32.1)	29 (54.7)	6 (11.3)	1 (1.9)	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	53 (100)
11. Enhance learner collaborative skills	9 (17.0)	31 (58.5)	9 (17.0)	4 (7.5)	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:

The role of school-based assessment

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)	68 (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

Jack Chipfiko and Cosmas Maphosa

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).

The role of school-based assessment

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

The role of school-based assessment

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 & Mehradj, 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

The role of school-based assessment

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.

10. REFERENCES

- Afemikhe, A., and Omo- Egbekuse, J. (2010). *Classroom Assessment in Secondary Schools in Nigeria*, IAEA Bangkok 36th Annual Conference. www.iaea.info/documents/paper_4d224f87.pdf (Retrieved 4 April, 2017)
- Africa Union. (2015). *Agenda 2063: The Africa we want*. At <http://agenda2063.au.int/en/documents/agenda-2063-africa-we-want-popular-version-final-edition>, accessed 21 November 2016.
- Annie, T. S. Y. (2011). Exploring Students' perception of and Reaction to feedback in School – based Assessment. *Malaysian Journal of ELT Research*, 7(2): 104-147.
- Awofala, A. O. A., and Babajide, V. F. T. (2013). Examining Attitude towards Continuous Assessment Practices among Nigerian Pre- service STM Teachers. *Journal of Education and Practice*, 4(13): 37-49.
- Barley, S. Y. M., (2013). Perspectives of school-based assessment in the NSS curriculum through the eyes of the administrative and teaching stakeholders in Hong Kong. *Hong Kong Teachers' centre Journal*, 12: 21-47
- Bello, M. A., and Tijani, A. A. (2010). Training needs of teachers in School-Based Assessment in Anglophone West African countries: Ghana. www.laea.info/documents/papers_2fb24ab5.pdf (Retrieved 15 July 2016)
- Byabato, S., and Kismo, K. (2014). Implementation of School-based Continuous Assessment (CA) in Tanzania Ordinary Secondary Schools and its implications on the Quality of Education. *Developing Country Studies*, 4(6): 55-62
- Cheng, L. Andrews, S. and Yu, Y. (2010). Impact and consequences of school-based assessment (SBA): Students' and Parents' views of SBA in Hong Kong. *Language Testing*, 28(2): 221-249.
- Chong, K. K. K. (2009). *Whither school-based coursework assessment in Singapore: Paperwork 35th IAEA-Conference for creative world*, September
- Darling – Hammond, L., and Wentworth, L. (2010). *Benchmarking learning Systems: Student performances in international context*. California: Stanford
- Daugherty, R. (2011). *Designing and implementing a teacher-based assessment system: Where is the infrastructure?* Paperwork seminar on Teachers' judgments of summative assessment: strategies for enhancing consistency. June 20-22. Oxford
- Department for children, schools and families (DCSF). (2008). *The Impact of Parental Involvement on Children's Education*, Nottingham: DCSF.
- Department of Basic Education (DBE). (2011). *National Protocol for Assessment Grade R-12*. Pretoria: Government Printers
- Department of Basic Education (DBE). (2012). *South African School and Administration Management System (SA-SAM):30 November 2012*, Pretoria: Government Printers. www.education.gov.za. (Retrieved 11 November 2016).

- Department of Basic Education (DBE). (2014). *The Ministerial Task Team Report on the National Senior Certificate (NCS)*, 26 May 2014. Pretoria: Government Printers.
- Emerson, L., Fear, J., Fox, S., and Sanders, E. (2012). Parental engagement in learning and schooling: Lessons from research, a report by the Australian Research Alliance for Children and Youth (ARACY) for the Family-School and Community Partnership Bureau: Canberra.
- Gobena, G. A. (2013). Factors Affecting the implementation of Continuous Assessment in Rift Valley University College with Special Attention to Technical and Vocational Educational Training (TVET) Programs at Adam Main Campus, East shoa, Oromia Regional State, Ethiopia, East Africa. *Middle Eastern & African Journal*, 7: 74-90.
- Green, S. K., Johnson, R. L., Kim, D., and Pope, N. (2006). Ethics in Classroom assessment practices: Issues and attitudes. *Teaching and Teacher Education*, 23: 999-1011.
- Jaba, S. (2013). Acceptance towards School-based Assessment among Agricultural Integrated Living Skills Teachers: Challenges in Implementing a Holistic Assessment. *Journal of Technical Education and Training*, 5(11); 44-51
- Kapambwe, W. M., (2010). The implementation of school-based assessment (CA) in Zambia. *Educational Research and Review*, 5(3):99-107
- Kimu, A. M. (2012). Parental Involvement in Public Primary Schools in Kenya. University of South Africa (PhD Thesis)
- Kuze, M. W., and Shumba, A. (2011). An Investigation into Formative Assessment Practices in Selected Secondary Schools in Beaufort in South Africa. www.Krepublishers.com/. . .Pdf/. . /JSS- 29-2- 159-11- 1191-Kuze-M-W-Tt.pdf, (Retrieved 23 February 2017)
- Lumandi, M. W. (2013). Challenges Besetting Teachers in Classroom Assessment an Exploratory Perspective. *Journal of Social Science*, 34(3): 211-221.
- Mafa, O., and Makuba, E. (2013). The Involvement of Parents in the Education of their Children in Zimbabwe's Rural Primary Schools: The Case of Matabeleland North Province. *ISOR Journal of Research & Methods in Education*, 1(3):37-43.
- Maile, S. (2013). School-Based Quality Assurance of Assessment: An Analysis of Teachers' Practices from Selected Secondary Schools Located in Tshwane north district. *International Journal of Humanities and Social Science Invention (Online)*, 2(10):15-28.
- Majid, F.A. (2011). School-Based Assessment in Malaysian Schools: The Concern of English Teachers. *US - China Education Review*, B3:393-402.
- Mansor, A. N., Leng, O. H., Rasul, M. S., Raof, R. A., and Yousoff, N. (2013). The Benefits of School-Assessment. *Asian Social Science*, 9(8):101-106.
- Mansor, A. N., Leng, O. H., Rasul, M. S., Raof, R. A., and Yousoff, N. (2013). The Benefits of School-Assessment. *Asian Social Science*, 9(8):101-106.
- McNeal (Jr), R. B. (2014). Parent involvement, Academic Achievement and the Role of Student Attitudes and Behaviours as Mediators. *Universal Journal of Educational Research*, 2(8): 564-576
- Mishra, S. and Mallik, P. (2014). Perception of Teachers, Parents and Students about Continuous and Comprehensive Evaluation at Elementary School level in Odisha. *Pedagogy of Learning*, 2(1): 19-28

The role of school-based assessment

- Mkwanzani, H. N. (2014). *Teachers' use of formative assessment in the teaching of comprehension to grade 3 learners*, (PhD Thesis). University of Pretoria.
- Mpupalika, K. M. (2013). *Tanzania science teachers' practices in continuous assessment* (Mini-Thesis) <http://hdl.handle.net/10539/15822> (Retrieved 10 June 2016).
- Mwebaza, M. (2010). *Continuous assessment and students' performance in 'A' level secondary schools in Masaka District* (Mini-Thesis) http://news.mak.ac.ug/documents/makfiles/theses/mwebaza_micheal.pdf (Retrieved 10 June 2016).
- Nair, G. K. S., Setia, R., Samad, N. Z. A., Zahri, R. N. H. B. R., Luqman, A., Vadeveloo, T., and Ngah, H. C. (2014). Teachers' Knowledge and Issues in the Implementation of School - Based Assessment: A Case of Schools in Terengganu, *Asian Social Science*, 10(3): 186-194
- Narayan, N.A. (2014). The reforms to improve the internal assessment system: Teachers' perception. *International Journal of Educational Research*, 2 (10):105-111.
- National Education Association. (2008). *Parent, Family, Community Involvement in Education*. Washington DC, NEA Education Policy and Practice Department (Centre for Great Public Schools)
- Ndalichako, J. L. (2014). *Conceptualization and Implementation of continuous Assessment in Tanzania: Fit for the purpose?* www.iaea.info/documents/paper_3fc7348ce.pdf (Retrieved 10 June 2016).
- Ndalichako, J. L. (2015). Secondary School Teachers' Perception of Assessment. *International Journal of Information and Educational Technology*, 5(5): 326-330.
- Ngulube, P., Mathipa, E. R., and Gumbo, M.T. (2015). Theoretical and conceptual framework in social sciences. *Addressing research challenges: Making headway in developing researchers*. Mosala – MASEDI Publishers & Booksellers. <https://www.researchgate.net/...Theoretical-Framework-5587eo7bo8aebocdadeoe7> (Retrieved 2 May 2017).
- Nyambe - Nyambe, T. (2015). *Primary school teachers' experiences of implementing assessment policy in social studies in the Kavango region of Namibia* (Mini-Thesis). http://scholar.sun.za/bitstream/handle/10019.1/.../Nyambe_primary_2015pdf?...2 (Retrieved 10 June 2016).
- O'Hehir, J. and Savelsberg, H. (2014). *Towards Best Practices in Parental Involvement in Education: A literature review*. University of South Australia. Australia, Adelaide
- Oberholzer, A. (2010). "Please sir may I have some more?" – *The underutilisation of school - based assessment in the National Senior Certificate in South Africa: Paperwork 36th Annual Conference*. Bangkok, August 22-27.
- Ogunleye, A. W., and Omolayo, O. V. (2016). Classroom Assessment in Secondary Schools in Nigeria. *International Journal of Social Science*, 5(1):1-6.
- Polia R. R. (2009). *The management of quality assurance of school - based assessment at a national level in South Africa* (PhD Thesis). University of Johannesburg. <http://ujdigspace.uj.ac.za/ditstream/handle/10210/3688/Polia.pdf?sequence=1> (Retrieved 15 March 2016).
- Ramalepe, M. L. (2015). A Model for a successful implementation of Continuous Assessment in Limpopo Secondary schools. *Mediterranean Journal of Social Science*, 6(1): 578-583

- Republic of South Africa. (1996). *South Africa Schools Act No 84 of 1996*. Pretoria: Government Printers.
- Reyneke, M. (2016). School- Based Assessment in English Language teaching: Weighing the Cow will not fatten it. *Per Linguam*, 32(2):1-14.
- Reyneke, M., Meyer, L., and Nel, C. (2010). School-based assessment: the leash need to keep the poetic ‘unruly pack of hands’ effectively in hunt for learning outcomes. *South African Journal of Education*, 30: 277-292.
- Sumsudin, N., Rengasamy, P. A. Jizat, J. E. M., Wahid, H. A. Jalil, N. A. (2014). Investigating Teachers’ Readiness, Understanding and Workload in Implementation of School - based Assessment (SBA) 11th International Conference on Cognition and Exploratory Learning in Digital Age.
- Tangdhanakanond, K., and Wongwanich, S. (2012). Teacher Attitude and Assessment Concerning the Use of Student Portfolio Assessment in Thailand’s Educational Reform Process. *International Journal of Psychology: A Bio- psychosocial approach*, 10:71-88.
- Tong, S.A., and Adamson, B. (2015). Student Voices in School-Based Assessment. *Australian Journal of Teacher Education*, 40(2):15-28.
- Umalusi, (2015). Quality Assurance of the 2015 National Senior Certificate (NSC) Examinations and Assessment of the Department of Basic education (DBE). December 2015. Pretoria: Council for Quality Assurance.
- Umalusi, (2015). Quality Assurance of the 2015 National Senior Certificate (NSC) Examinations and Assessment of the Department of Basic education (DBE). December 2015. Pretoria: Council for Quality Assurance.
- Van der Berg, S. Taylor, S. Gustfsfsson, M. Spaul, N. and Armstrong, P. (2011). *Improving the Education Quality in South Africa, Report for the National Planning Commission*, niversity of Stellenbosch
- Vandeyer, S., and Killen, R. (2007). Educators’ conceptions and practices of classroom assessment in post - apartheid South Africa. *South African Journal of Education*, 27(1):101-105
- Xule, T.R. (2013). *An Investigation into Assessment Reform in South Africa with Special reference to Common Task Assessment (CTA)* (Mini Thesis), University of Zululand

Using internship as a tool for professional development in universities: a case of the Zimbabwe Open University.

Lilian Chaminuka and Justina Z Mtezo
Zimbabwe Open University

Abstract

Skills transference through internship has been a major model used by higher education institutions to facilitate students' practical application of knowledge and principles to real life situations. Internship therefore, has been a central feature of the learning process in many professional training fields such as medicine, nursing, and law, to name some. The primary goal of internship is to develop practical expertise of the trainee. Currently, some employers are skeptical about employing Open Distance Learning (ODL) graduates assuming that they lack hands-on experience. ODL graduates are, therefore, sometimes disadvantaged during upgrading and promotion in some organizations. This study sought to establish how internship could be applied as a tool for professional development for Open Distance Learning students. Adopting a qualitative methodology, the study employed a case study research design. An interview schedule was used to gather information from a purposively selected sample of fifteen students from the Faculty of Applied Social Sciences in six selected Regional Campuses of the Zimbabwe Open University. The study focused on students in the Master of Science in Counselling and Master of Science in Special Education degree programmes, who had completed or were still under internship with various organisations. Data were analysed using themes that emerged from the findings. It emerged that internship critically facilitates students to cope with varied assignments, learn to be creative and get highly motivated, and thus help improving use of counselling techniques. It also helped students gain knowledge on support systems for different cases for people with disabilities. One of the recommendations was that the university should strengthen internship programmes through enhanced supervisory visits to the internship sites and increase the number of internship hours.

Key words: Internship; professional development; Open and Distance Learning

INTRODUCTION

The transference of skills to students through internship reflects a chief model used by higher education institutions to facilitate students' practical application of knowledge and principles to real life situations. Work-based learning, whether in the form of an internship or apprenticeship, is currently one of the most influential ideas in public higher education and workforce development policy (Hora, Wolfram, & Thompson, 2017). Similarly, Cohen (2014) notes that it is

increasingly clear that internships with industrial, non-profit, or governmental organisations are valuable experiences for both the student and the hosting organisation. Internships are work-based educational experiences that relate to specific jobs, positions, occupations or professions (Meritt, 2008). Internship therefore, has been a central feature of the learning process in many professional training fields such as medicine, nursing, law, counselling, disability studies, social work and many

Internship as a tool for professional development

others. The primary goal of internship is to develop the practical expertise of the trainee.

There have been concerns raised by industry in relation to the role of universities in preparing graduates for success in their careers. Similarly, there is a misconception that ODL graduates lack hands-on experience in their areas of training. As a result, some employers are skeptical about employing ODL graduates thus disadvantaging them before and during employment, as well as upgrading and promotions in some organisations. However, it is important to note that some of the ODL graduates have a lot of relevant experience since most of them are already employed in their fields of specialisation. Such a scenario, therefore, accentuates the central role of internship in ODL institutions. Consequently, this article considers internship as an avenue for establishing the development of management competencies while conversely being utilised to determine possible deficits in students' professional development and marketability. The study therefore sought to establish how internship could be applied as a tool for professional development for Open and Distance Learning (ODL) students in Zimbabwe focusing on the Zimbabwe Open University (ZOU) experience.

STUDY BACKGROUND

According to Lee (2016), it is estimated that there are approximately fifty-two million interns at any one time globally, with 97% of large employers planning to hire interns each year. This stems from the backdrop that experience is the best teacher; hence, it is the major motivation for the majority of university and graduate students to take up internships. Despite the view that some university programmes oblige students to take internships, other valiant students are aware of the fact that the greatest way to put together pertinent work experience on their

resume is internship. At the same time, internship can facilitate one to obtain a prospective role at a reputable company. For Merrit (2008), there is a significant belief among organisations that interns are a low cost resource. However, research by the Association of Graduate Recruiters has indicated that those graduates who assumed their professions as interns are more likely to remain within the company that they were with during their internship for an elongated period compared to those who did not.

There is a growing number of students taking internships with a view to building their professional experience. In the light of this, it has become even more fundamental for organisations looking to attract and host the best interns to uphold and offer the best intern experience (Chow & Lam, 2015). However, the support expected from the company to the interns is changing, making it imperative for companies to stay ahead of the game (Lee, 2016). Therefore, a significant amount of coordination and employee support goes into managing interns in a short space of time. What this points to is the creation and institutionalisation of suitable policies, processes, people and technology in to attract the best as well as to minimise organisational costs.

In Zimbabwe, the most prominent ODL institution is the Zimbabwe Open University (ZOU). According to Bukaliya (2012) ZOU was established to cater for a substantial component of people who, by design or unintentionally, could not be accommodated in conventional universities, by offering them the opportunity to study in their homes and in their workplaces through distance education. Chiefly, Government through an Act of Parliament in 1993 instituted ZOU. At its inception, the University had one faculty, the Faculty of Education. As a university, ZOU now offers a range of undergraduate diploma and degree

programmes, Masters and Doctor of Philosophy degrees in six faculties, which are; Applied Social Sciences, Arts and Education, Faculty of Agriculture, Commerce and Law, Science and Technology and Information Technology and Multimedia Communication. Interestingly and most significantly, ZOU has a decentralised structure as reflected by the existence of Regional Campuses in all the ten (10) administrative provinces of Zimbabwe and a Virtual Campus to cater for all global students.

In terms of internship, three out of the six faculties do offer this facility. According to Bukaliya (2012) in the Applied Social Sciences, internships are offered in the Bachelor of Science degree in Counselling and the Master of Science in Counselling while the Faculty of Arts and Education, through the Department of Education, offers internships in a different form that is, teaching practice and attachment for Media Studies students. The teaching practice is offered under the Diploma in Education (both primary and secondary) and Bachelor of Education (secondary) programmes respectively. Internships are also offered in the Faculty of Science and Technology in the Physical Education and Sport programme. The establishment of internship programmes in the ODL institution was premised upon the recognition that there was a gap in the learning of their students, in as far as practical appreciation of skills was concerned. This thus, adds credence to the notion that internship is of utmost importance to the different degree and diploma programmes in which students are enrolled. Nevertheless, despite such noble intentions in the introduction of internship programmes in ODL, there are some few challenges that negatively affect its implementation across all faculties offering the facility. Against such a background, the study sought to assess the role of internship in developing students

professionally in ODL institutions with a particular focus on the ZOU experience.

CONCEPTUAL FRAMEWORK

Based on the given background there is a theoretical framework that informs this study. The study adopts John Dewey's theory of experiential learning. This study honors the fact that Dewey's philosophy combines a person's community service and academic study to produce a rich learning experience that benefits the learner and the community at large, which promotes mindfulness and positive focus on a career (Pacho, 2015). The philosophy of experience and learning is profound for this particular study because it brings to the fore one's social responsibility during service-learning. In other words, internship for ZOU students and other ODL students is most crucial, as it is a chance to acquire hands-on practice, which is required in the industry, adds onto individual growth. Hence, the guidance this study acquired from the Dewey's Experiential Learning theory.

THE CONCEPT OF INTERNSHIP

Before examining the role of internships in the professional development of students, it merits to consider and articulate what is meant by internship. Nevertheless, we have to be quick to point out that examined literature makes it apparent there is no single definition in existence and in practice that is finite. Internships assume many diverse forms, hence the varied definitions.

According to Beck and Halim (2008), "internships are considered as a valuable learning experience for students, academics and prospective employers." This implies that students are able to gain experience in real working environment and applying what they have learnt in classroom. Taylor (1988) defined internships as "structured and career relevant work experiences obtained by students prior to graduation from an

Internship as a tool for professional development

academic program.” In the Merriam-Webster Dictionary, an intern is defined as “an advanced student or graduate usually in a professional field (such as medicine or teaching) gaining supervised practical experience (as in a hospital or classroom).” This definition considers what is known as practicum (in nursing) or teaching practice (in education) as internships, along with the view that the experience is supervised and limited to advanced students (Hora et al., 2017). On the other hand, the Oxford English Dictionary defines internship as, “The position of a student or trainee who works in an organisation, sometimes without pay, in order to gain work experience or satisfy requirements for a qualification.” From this definition, it can be gleaned that the learner is a beginner and is viewed as employee of an organisation. It also makes reference to the subject of pay (or lack thereof), and the goal of obtaining qualifications.

The National Association of Colleges and Employers (2011) defined internship as a form of experiential learning that integrates knowledge and theory learned in the classroom with practical application and skills development in a professional setting. They further posit that internships present students with the opportunity to gain valuable applied experience and make connections in professional fields they are considering for career paths; and give employers the opportunity to guide and evaluate talent (National Association of Colleges and Employers, 2011). Similarly, Merrit (2008) argues that internships are career-oriented curricular endeavors of practical application.

In the light of the foregoing Hora et al. (2017) posit that the central idea behind the advocacy for work-based learning is that hands-on experiences in authentic, real-world contexts are an important complement to academic programmes and classroom teaching – an idea that has been expressed by

educational researchers and learning scientists for decades. Internships, in particular, are often touted as being a win-win situation: Students can get real-world job experience and establish professional networks, educators get their students opportunities to translate theory into practice, and employers get inexpensive and educated workers that may turn into new hires (Hora et al., 2017). Furthermore, internships are largely viewed as a vital strategy in solving the so-called “skills gap.”

A number of terms have been developed over the years to denote internship (Hora et al., 2017; Merrit, 2008). These encompass apprenticeship, authentic Assessment, coop, which is short for cooperative education, experiential education, experiential learning and externship, which is a short-duration, less extensive version of an internship in which a student becomes actively engaged and participates in applied, practical, experience-based learning in an area or field of interest. Other terms include individualized learning, job shadowing, performance assessment, performance exhibition, portfolio assessment, school-to-work programmes, and service-learning, which denote the hands-on educational approach that combines service to the community with the classroom curriculum (Merrit, 2008).

Historically, student internships (or cooperative education) originated in the U.S. in the early 1900s (Driscoll, 2014) of which history is intimately intertwined with that of experiential learning and experiential education, school-to-work programmes and initiatives, career academies and career-exploration programmes and service-learning programmes (Michigan Center for Career & Technical Education, 2015). In Europe, voluntary apprenticeships for youth originated in the early nineteenth century (Olson, 2013; Snell, 2014). Over the years,

internships have gained global recognition and application including in regions such as Asia, Africa and Latin America. The growth of internship programmes worldwide is best explained by the positive effects they have on the quality of instruction, professional development and education in general. In the light of this growth of internships, Zimbabwe has not been left behind. According to Bukaliya (2012) in order to accord the students the opportunity to attain hands-on experience, universities have introduced internship programmes in a number of both undergraduate and postgraduate studies. This has been done to provide students with a smooth transition from the academic world to the working environment.

NEXUS BETWEEN INTERNSHIP AND PROFESSIONAL DEVELOPMENT

Above, it has been shown how a learning Indeed, research has shown that there is a significant relationship between internship and the professional development of students. This is corroborated by Chow and Lan (2015) who in their study observed that service-learning and leadership education research has suggested that service-learning projects enhance students' leadership skills, in turn nurturing leaders with social responsibility for the twenty-first century. The results of their study further indicated that there is acquisition of shared-leadership skills, change of growth mindset, enhancement of social responsibility, and improvement of personal and social competencies among the students due to internship programmes (ibid).

Among the educational outcomes of internship programmes that have been noted, Merrit (2008) argues that during their internship programmes, students develop new, practical, usable skills of the workplace. He goes at length to detail that they learn aspects such as work ethic and work values, skills to help them compete effectively on the

job and in life, to improve their interpersonal relations and communications skills, to improve their organizational skills, to improve computer literacy and technology skills, to work independently, researching skills, report writing, team-working skills from working cooperatively on group projects, to complete work on time, to be positive, professional and articulate, to be dependable, to show initiative and to be self-motivated (ibid). This is over and above the ability to put theory into practice which internship does provide for. Overall, internship programmes have been noted to contribute towards both the personal and career development of the students who undergo such programmes through exposing them to the real issues underlying their learning process. As internship exposes students to real life-work situations, students gain self-confidence and so build up their leadership abilities through leadership training.

On the converse, it is also true that organisations do benefit from the work of interns. In a study by Dalby (2009) it was found that in organisations, the interns assist with a range of ad-hoc and ongoing projects, allowing experienced staff to deliver more value-added customer services, such as research and content-development. Dalby (2009) went on to assert that interns also query established practices, offer new ideas, and ensure that the systems and behaviours remain relevant and transparent. Apart from just amassing experience, the interns have contact with the present team of experienced staff who facilitate their practical learning of issues learnt while at the university. Through internships, a majority of students were aided in establishing understanding of the broader information profession, work with views they came across in their theoretical study and are advised on their first professional positions after completing university education.

Internship as a tool for professional development

Chow and Lam (2015) argue that internships offer students field experiences given that they take students out into the community and the real world of work. This helps the students to apply what skills they learnt and to appreciate the practical intricacies surrounding their future professions. This is made more visible by the nature and quality of the internship. For instance, internships that are challenging and high quality have proven to be an effective and efficacious approach that has many advantages and few disadvantages (Merritt, 2008). To this end, past studies have revealed that there is a direct correlation between the internships in which students have served and the ultimate career paths, which they select (ibid).

STATEMENT OF THE PROBLEM

Notwithstanding the fact that internships have been applauded for assimilating classroom education with practical experience by affording students the opportunity to transcend towards professionalism (Mpolomoka, Kanduza Sichali, Sampa & Hamweete, 2016), there have been a host of challenges that curtail the progression of internship in ODL institutions. The benefits of internship have not been well articulated in discourse underlying ODL. As such, not all programmes in ODL institutions undergo internship. Against this background, the present study sought to ascertain the benefits of internship to the professional development of students for the enhancement of employment opportunities.

RESEARCH OBJECTIVES

The major purpose of the study was to examine the role of internship in promoting professional development in Universities with specific focus placed on the Zimbabwe Open University.

In the quest to achieve the above study, the following specific research objectives guided the study, namely, to:

1. examine the benefits of internship to students in ODL;
2. assess the impact of internship programmes on the professional development of students; and
3. evaluate methods used to improve the current internship systems at ZOU.

METHODOLOGY

The study adopted a qualitative research approach in which a case study research design was employed. An interview schedule was used to gather information from a purposively chosen sample of fifteen students from the Faculty of Applied Social Sciences in six selected Regional Campuses of the Zimbabwe Open University. The study focused on students in the Master of Science in Counselling and Master of Science in Special Education degree programmes who had completed or were still under internship with various organizations that offer professional counselling and those that deal with people with disabilities. Data were analysed using themes that emerged from the findings, which themes were also used for the presentation of the study findings.

FINDINGS

The findings of the study largely confirm John Dewey and David Kolb's Experiential Learning Theory that places emphasis on a 'hands-on' approach during the learning process (Kolb, 2014). For Dewey and Kolb any kind of meaningful learning should be centered on experience, as a key driver. Barnwell (2016) guided by the same experiential learning theory, carried out a study to evaluate the impact of internships on

career preparation from the perspective of graduates. The results similarly suggest that Internship improved their level of career preparedness.

A host of advantages emanate from students interviewed across the six Regional Campuses that were selected for this study. However, equally important to note is the fact that there were a few disadvantages that were raised and will be subsequently highlighted.

From the interviews with participants, it emerged that internship critically helps students to cope with varied assignments given to them, which are omnipresent in the work environment.

In an interview with an intern from the Harare Regional Campus, she made this observation:

Internship has helped me a lot as it has made me able to multi-task and work under pressure. This is because in many instances, there are many things to be done almost at the same time and so you have to deal with each and every task accordingly.

Both the Oxford English Dictionary and Merriam-Webster Dictionary concur that the learner is a beginner and is viewed as employee of an organisation. The intern from Harare Regional Campus noted that she was literally employed and acknowledged that most of the material in the study modules learnt in classrooms are somehow not enough to produce knowledge and make her a competent graduate.

Another interviewee from the Mashonaland Central Regional Campus who confirms Bukaliya (2012) supported this view on the essential objectives of internship saying:

what internship has taught me is to be able to do a lot of things in a coordinated manner. You have to accomplish a lot of assignments given to you plus those that are related to school.

The above significantly points to the importance of internship in fostering coping mechanisms in students when faced with varied assignments. The emphasis is on coordinating tasks, which is essentially the practical aspect of working and this practical experience is much sought after by employers.

From the study, it was also indicated that internship helped students in realising and gaining knowledge on support systems for different cases for people with disabilities and those exposed to gender-based and domestic violence as well as rape. The students located in various organisations stated that they were exposed to a host systems crafted to support marginalised and affected groups of people including those living with disabilities and victims of violence. For instance, one interviewee noted:

it was interesting to learn that there are numerous bodies and facilities that help survivors of rape. During my internship, I learnt that there is the Adult Rape Clinic at Parirenyatwa Group of Hospitals and Harare Hospital. These help those exposed to rape in so many ways including counselling, post-exposure prophylaxis and other issues related to HIV exposure.

One interviewee also stated:

Being on internship really assisted me in knowing the various places to refer people who present different issues. I now keep a hard copy diary of addresses and locations for referral points because I don't want to be caught unaware and fail to help clients who

Internship as a tool for professional development

need specialist attention. Here I'm talking for example of people such as those who abuse substances and need rehabilitation services.

Therefore, internships help create awareness to students of systems that might not be readily visible to them when learning in the classroom.

Merrit (2008) argues that internships are definitely career-oriented curricular concerned with practical application. While this is true to a certain extent, Ayob et al (2013) noted with concern how some students fail to acquire relevant training. They argue that it is possible to go for internship but get experience that is not quite useful. Citing instances of a student from the Microelectronics program, attending training with a development and maintenance based company they argue that it is possible that one would end up not fully understanding the operation and technical aspects of their allocated projects since they may not be able to get basic knowledge in that area.

A more instructive example is where a company that is a provider of entrepreneurial training, tailored into providing support for the promotion of certain business products is likely not to be able to provide relevant experience required by the student to prepare himself for an engineering career.

Related to the above finding is the view that internship helped students to get something at work but at times, they would be relegated to secondary duties and serve as ancillary staff.

This was noted in one interview where the participant said:

Half the time I was available for senior management's personal errands and would be on standby to take up duties that

had virtually nothing to do with my counselling degree such as preparing tea for everyone. The practice of rotating interns across many departments was also boring as I also felt it undermined the development of my specific areas on interest. However, there was some merit to the intership program such that my creativity was enhanced. In counselling, you meet different people with different problems and issues. These have to be dealt with differently and so require you to be very creative.

Similarly, another interviewee from Mashonaland West Regional Campus raised such a view:

In the field, you are confronted with diverse situations that need you to come up with innovative options. This means you have to be quick to think about these situations in order to help the clients.

Thus, internship in the field of counselling enhances the skills of students in dealing with clients for their future roles after completing their studies.

Rolf van, Patrick & Guido (2009), in a study on motivation and student's generic skills development, established that an individual's motivation could be enhanced by working at a reputable firm or in a team because they have credible sources of reference.

In the interviews, it emerged among the majority of the participants that they were highly motivated by the hands-on experience offered to them by internship. They noted that the practical experience showed them what it was like to be involved in counselling and this is agreement to Pacho (2015) who agrees that experiential learning promotes mindfulness and positive focus on a career. It also gave them the ability to apply the

theoretical and practical skills learnt in the classroom.

The study also found that internship helped the students to improve the application of counselling techniques, which they had learned during their undergraduate studies. Techniques such as joining, widening the view and facilitating dialogue were highly improved through the practical application of such techniques. In the interviews, it surfaced that through applying practice from theory, students were able to enhance their appreciation and utilisation of the techniques in counselling.

Finally, one of the findings of the study was that internship helped the students develop relationships with people in the profession for future collaborations. The majority of the students interviewed outlined that during the time that they were under internship, they met a host of different people both within the organisations they were attached and outside the organisation. This gave them the opportunity to interact and develop relations that might prove helpful for them in the future. From these developed relations, the students indicated that they were likely to secure future employment, advance their careers and engage in interactive debates in fora such as conferences, symposiums and workshops.

CONCLUSIONS

The study sought to explore how internship can be employed as a tool for professional development in universities. It used the Zimbabwe Open University as a case study because it is an ODL institution. This was accomplished by conducting in-depth interviews with Masters Degree programmes' students who had completed or were still under internship with various organisations. Based on the presented findings, several conclusions have been

arrived at which are consistent with previous research suggesting internship enables students to acquire skills, which cannot be learned in the classroom environment and recommendations were proffered. Foremost, it can be concluded that the responses of students from across the six selected Regional Campuses have added credence to the significant role that internships do play a critical role in the counselling profession. Thus, there was common concurrence that internships are valuable in affording interns with practical comprehension of aspects learnt as well as giving them a wealth of exposure to the world of work. However, in order to implement internship programmes successfully there ought to be adequate resources to structure and monitor the programme. In addition, it is equally important for the interns to feel in control of some of their professional decisions in implementing their routine duties.

The third conclusion of the study was that internship programmes are a source of motivation for the students as they get to appreciate and apply the theoretical and conceptual aspects learnt in the classroom. Students can therefore easily adjudge whether what they learnt is practicable or not, and so are able to understand the relevance of their area of study. Fourthly, the study concluded that internship raises the students' ability to secure future employment by exposing them to different organisations that may potentially absorb them after completing their studies. Lastly, it was concluded that internships taught students the vital skills of employability.

RECOMMENDATIONS

Despite the positives of internship, there were concerns that the period the internship programme was rather short as only two semesters were set aside for that. With regard to this, the University ought to rethink its

Internship as a tool for professional development

policy on internship with a view to expand its duration where suitable. There is also further need to ensure that university staff pays more, frequent visits to the internship sites to allow for supervision that is more effective. It is the recommendation of the study that the University should liaise with organisations requiring interns such that it is not difficult for students to get internship placement. This is because the current scenario is that students have to seek internships on their own, armed only with an introductory letter from the university. The study further recommends that there is greater need for a coordinated approach on the part of the university and site supervisors on internship guidelines and expectations of the University as well as the host site. There should be the institutionalisation of statutes aimed at protecting interns against mistreatment by dishonest employers. Students on their own are encouraged to continue offering voluntary services to organisations who require their expertise even after they graduate. This will not only benefit the organisation but the student as well as the community. Dewey views this as a continuous cumulative interaction of a person and the world as rewarding and transforming (Dewey; 1934 cited in Pacho, 2015).

REFERENCES

- Barnwell, S. (2016) Relationship Between Internships and Employment Competencies of Degreed Professionals Who Completed a College Internship. Walden Dissertations and Doctoral Studies. [Online]<https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=4020&context=dissertations>. Accessed 10 February 2019
- Beck, J.E., and Halim, H. (2008), Undergraduate Internships in Accounting: What and How Do Singapore Interns Learn from Experience? *Journal of Accounting Education*, 17(2), 151-172
- Bukaliya, R. (2012). "The Potential Benefits and Challenges of Internship Programmes in an ODL Institution: A Case for the Zimbabwe Open University." *International Journal on New Trends in Education and their Implications*. January, February, March Vol 3; Issue 1. Article 13 pages 118-133.
- Chow, J.M. and Lam, S. (2015). "Nurturing Leadership and Changing Student Mindset through Meaningful Community Service: The HKU Service Leadership Internship." In Shek D and Chung, P. (eds) Promoting Service Leadership Qualities in University Students. *Quality of Life in Asia*. Vol 6. Springer, Singapore.
- Cohen, S. (2014). "Some Thoughts on the Importance of Internships as Part of an Undergraduate Program." *ASA Undergraduate Curriculum Committee*, November [Online]. Available at <http://www.amsat.org/education/curriculumguidelines.cfm> Accessed on 14 January 2018.
- Dalby, A. (2009). "Nurturing New Talent: Running a Corporate Internship Program." *Library Management*, Vol. 30 Issue 8 pages 583-592.
- Driscoll, J. (2014). "A Century of Internships: A Quick History of Internships and Coops in the Business World." Available at <http://news.pgitech.org/teq/teqstory.cfm?id=1573>. Accessed on 14 January 2018.
- Hora, M. T., Wolfram, M. and Thompson, S. (2017). "What do we know about the impact of internships on student outcomes? Results from a preliminary review of the scholarly

- and practitioner literatures.” *Research Brief Number 2*, Center for Research on College-Workforce Transitions, University of Wisconsin. <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=6866815&site=ehost-live>.
- Kolb, D. A. (2014). *Experiential learning: Experience as the source of learning and development*. FT press.
- Lee, J. (2016). “Intern Relocation-nurturing the Future Professionals of your organization” [Online] Available at: <http://www.relocatemagazine.com/articles/intern-relocation-nurturing-the-future-professionals-of-your-organization>. Accessed on 13 January 2018.
- Merritt, R. D. (2008). *Student Internships*. Available at <https://www.ebscohost.com/uploads/imported/thisTopic-dbTopic-1072.pdf>. Accessed on 14 January 2018. Michigan Center for Career and Technical Education, Michigan State University. (2015). *A guide to work-based learning programmes: Part II- Career Exposure*. East Lansing, MI: Michigan Center for Career and Technical Education, Michigan State University.
- Minneapolis 8th graders must choose high school theme. (2002). *Vocational Training Newsletter*, 33(2), 2-3. Retrieved July 16, 2007 from Online Database Business Source Complete.
- Mpolomoka, D.L, Kanduza, E., Sichali, C and Sampa, P and Hamweete, W. (2016). *Guidance and Counselling Internship Experiences of ODL students in Zambia*. *International Open and Distance Learning Journal (Teacher Development) Volume 3, No1*.
- Olson, L. (2014). “Creating apprenticeship system will be tough, advocates admit.” *Education Week*. 12(23): 1-29.
- Pacho, T. O. (2015). “Unpacking John Dewey’s Connection to Service-Learning.” *Journal of Education & Social Policy*. Vol. 2, No. 3; September 2015, pp 9-16.
- Rolf van, D., Patrick, A. T., & Guido, H. (2009). Do many hands make light work?: How to overcome social loafing and gain motivation in work teams. *European Business Review*, 21(3), 233-245.
- The National Association of Colleges and Employers, (2011) in Budhai, S.S and Skipwith, K. (2017). *Best Practices in engaging Online Learners through Active and Experiential Learning strategies*. London. Routledge.

The significance of university-industry collaboration in developing knowledge-based economies: the SADC perspectives**Petros Gomwe**

BBSHM (BOTSWANA)

petrosgomwe@hotmail.com

Abstract

This paper assesses the influence of university-industry collaborative efforts in developing knowledge-based economies. Due to the great persistence and demands on Sustainable Development Goals (SDGs), the SADC region is challenged to move from being resource-based region to creating knowledge-based economies. Lack of knowledge is a major stumbling block. Based on this problem, the purpose of this study was to identify and evaluate possible university-industry collaborations that can benefit the region. The primary objective was to identify the contribution of industry in shaping the university curricula. Review of related literature indicated that SADC universities and industry are parallel segments of the economy. The literature acknowledges that the universities do a commendable job in educating nations, notwithstanding that progress and the necessity to transform knowledge are long overdue. A critical document review process was adopted as a means of collecting the required data. A purposive sample of 16 universities amongst 66 in the region was included, and a detailed analysis of their strategic plans was done. Key findings revealed that, so far there is insignificant evidence of university-industry collaborations. It was concluded that SADC is yet to utilize university-industry collaborations in developing knowledge-based economies. Therefore, it was recommended that the region must embark on robust integration of the university and industry fraternities to realize the full potential of the region.

Key Words: Knowledge-based economy, SADC, SDGs, University-industry collaboration.

INTRODUCTION

According to Ssebuwufu, Ludwick and Béland (2012) universities are regarded as a source of knowledge, innovation and technological advances. The creation of a knowledge economy depends upon the effectiveness of the universities in creating and disseminating the knowledge amongst all the economic players or stakeholders. More so the development of the economy hinges greatly on knowledge acquired and shared by the economic participants. The universities' role of being knowledge centres makes them a strategic and inseparable determinate of economic development. Ssebuwufu, et al. (2012) attest that, due to such a strategic role, there is a great transition, across the globe, in regarding the universities as strategic assets

in building innovation and economic competitiveness.

The key roles of universities are to; research, teach and outreach. These basic mandates lay foundation on the duty of universities to create knowledge based economies. However, their impact is primarily affected by the level of university-industry collaboration (UIC). The general trend shows that UIC is intensified in developed than in developing countries (Sá, 2014; UNESCO, 2000; AAU, 2000, 2012; Massaquoi, 2002; Kruss, et al., 2009; The World Bank, 2009; 2010). Africa, and in particularly the SADC region, is a victim of insignificant UICs. The university-industry collaborations are a critical pillar for success and development of economies. The initiative is primarily

University-industry collaboration

important for sharing knowledge and enhancing synergies. The collaboration is also vital in creation of new knowledge and skills. SADC is a developing region and faces severe challenges in integrating the academia and the industry contexts. Sá (2014) states that very little is known about UIC in Africa. This researcher attributes this scenario to lack of higher expectations (benefits) from the UIC (Sá, 2014).

LITERATURE REVIEW

Creation of a knowledge-based economy is a major step towards achieving competitive advantage and sustainable development. The huge differences between a traditional and knowledge-based economy justifies the importance and the urgent need of a knowledge-based economy. According to Tocan (2012) major differences between a traditional and knowledge-based economy include;

- Elimination of the economic problem of *scarcity* – information is shared and becomes better and abundant as more people participate.
- More knowledge-embedded (hi-tech) products fetches a premium market value than the traditional products
- Prices depend on contexts – same information can be of different value to different people in different contexts
- Knowledge is locked in systems and not allowed to ‘walk out of door’ in people’s heads
- Human resources becomes a key capital asset

A basic comparison of traditional economic paradigm and the knowledge-based economies (KBE) clearly proves that KBE is the ideal approach to sustainable

development (Tocan, 2012). Africa in general, faces a great challenge in shifting to KBE due to a number of constraining factors. These factors include; lack of support policies, lack of funding and unavailability of enabling environment.

The outreach mandate of universities requires them to interact with the societies and communities in which they operate. This involve them participating and shaping the society through imparting knowledge and engagement in development programmes. UIC is one of the significant ways in which the universities reach out to the society. There are a lot of benefits that can be derived from such collaborations that accrues both to the society and the universities. The World Economic Forum (2011) identifies benefits of UICs including;

‘providing alternative funding channels in an era of constrained financing; access to/or acquisition of state-of-the-art equipment; improved curriculum and training in technology-oriented programmes and problem-solving; enhanced employment prospects for students; supplemental income for academic staff; and clearer contribution of universities to the economy, among others’ (World Economic Forum, 2011). See also Martin (2000).

UNIVERSITY-INDUSTRY COLLABORATIONS AND KNOWLEDGE-BASED ECONOMIES

There are various outcomes on the implementation and achievement of UICs in different regions of the world (Peng, 2007). Notably, there is a huge progress distinction between the developed and developing economies. The USA is a role model in the implementations of UICs (Peng, 2007). According to Peng (2007) building a successful KBE requires; strength in ability to acquire knowledge, creating knowledge, communicating knowledge, and using knowledge. These

key requirements are all the core functions of universities. Ideally, universities take a leading role in developing and driving knowledge in any country. However, the universities' core business may not allow them to fully use the knowledge they produce hence the need to partner the industry in order to ensure that the produced knowledge is put to full utilisation.

China is currently the second largest economy in the world, but the country is under pressure to conserve the resources, for sustainability (Peng, 2007). This calls for great innovative initiatives, i.e. the creation and use of knowledge use of new knowledge. This scenario puts the universities in the context of the industries progression. Universities in China have a significant role to play, creating and sharing the new knowledge with the industries in China. Zyl, Amadi-Echendu and Bothma (2007) suggest nine critical drivers for effective sharing of knowledge between the universities and the industries. The critical amongst these include;

- the need to extract appropriate knowledge at the right time to make critical decisions
- the perception that knowledge is a valuable resource
- the emphasis on getting a return on investment in research
- the need to protect knowledge for competitive advantage
- the need to close the knowledge gap
- the need to protect intellectual property such as patents and trademarks
- geographic proximity between the knowledge source and recipient

Source: Zyl, Amadi-Echendu and Bothma (2007)

These drivers set a platform for pursuing strategic partnerships. Particularly, they outline major considerations that both the universities and the industries must take into account. Major drivers relate to creation of relevant knowledge at the right time. This technically refers to critical thinking for problem solving. Universities need to be familiar to the industries in their country and be ready to provide solutions to the problems they face as well as improving their operational systems through innovations. In sharing this knowledge, a balance must be achieved in protecting the intellectual property rights as well as closing the knowledge gap. The collaborations must create mutual benefits for the partners, ideally funding the university research facilities and creating competitive advantage to the industry partners.

THE ORETICAL FRAMEWORK

There are three distinct theories that explain the university-industry collaborations. These include Michael Porter's 'Cluster' or 'Diamond' model (1990), 'Triple-Helix Model' of university-industry-government interactions by Etzkowitz and Leydesdorff (1997, 1998, 2000) and lastly the National Innovation Systems by Freeman (1987) and Lundvall (1992). While these theories are founded on diverse premises, they generally share the common explanation that creating a knowledge-based economy is a collaborative effort of key economic participants (Edgar & Kharazmi, 2011).

Notably, the National Innovation Systems and Triple Helix theories share the arguments that creation of knowledge is a shared responsibility. In contrast Michael Porter's 'Cluster' or 'Diamond' model identifies the government as the key player in creating knowledge. Porter (1990) argues that the creation of knowledge is prudent

University-industry collaboration

when the government seizes the ‘chances’ that arise in the economy. Porter (1990) notes that developing an effective strategy, creating the suitable conditions, availing support structures and understanding the demand are key to promotion of innovation and creation of knowledge. Porter’s model does not place importance on the collaboration of key stakeholders.

Arguably, the National Innovation Systems theory attribute innovation and creation of knowledge to complex set of relationships among actors in the system, which includes enterprises, universities and government research institutes (Lundvall, 1992). While the National Innovation Systems acknowledge the roles played by key stakeholders, Sheehan et al. (1995) downplays the theory stating that studies conducted in 1994 across Australia conclude that;

‘Government laboratories, private research institutes and higher education institutions were considered relatively unimportant, indicating that insufficient collaboration between businesses and both public and private sector research agencies problem’

The weakness is attributed to lack of clear roadmap in defining the health and effective links that the industry, government and the universities must forge to promote innovation and knowledge creation (MERIT, 1995). Nonetheless the National Innovation Systems is a founding ground of the Triple Helix model (Edgar & Kharazmi, 2011). This is disregarding that the National Innovation System is challenged by excess broadness that makes it fail to address with precision the legit roadmap that the three economic players must adopt to create a successful knowledge-based economy.

The Triple Helix theory provides a founding basis for this study. The theory as propounded by Etzkowitz and Leydesdorff (2000) states that innovation is a product of

the interconnectivity of the three agents; the government, universities and the industry. The industry is considered to include the buyers, suppliers and firms. Hakansson and Snehota (1995) relate that the relationship of these three agents hinges on the following links; activity, resources and actors.

Hakansson and Snehota (1995) argue that the government, universities and the industry can establish and strengthen their relationship if they can find significant technical, administrative, commercial and other activities that link them up. Intrinsically, Etzkowitz, Gulbrandsen and Levitt (2000) argue that for the relationship to be worthwhile, the activity links must be value adding to all the participants. Even though the government does not derive material benefits in the Triple Helix matrix but it is fundamental that they should create an accommodative system that enhances the other two agents; the industry and the universities to relate well.

The Triple Helix theory is a development of the National Innovation Systems model that postulates that innovation is an achievement of the integrated effort of key economic agents (Lundvall, 1992). The Triple Helix theory distinctly connects the roles of the government, industry and the universities as fundamental to national innovation and building knowledge-based economies. However, Edgar and Kharazmi, (2011) argue that the government has a champion role to set the ‘rules of the game’ that governs the relationships and interactions that must prevail between the participants. Notably the key matters related to effective functionality of university-industry collaboration is the culture and trust amongst the players (Cooke & Morgan, 1998).

Cooke and Morgan (1998) and Lee (2011) recognise the vitality of culture in developing effective university-industry collaborations. Malerba (2003) advocates

for universities and industries to change their perception towards the roles and significance of each other. Lockett and Knockaertd (2008) state that the industry must trust that universities can create and transfer technology that can successfully transform their operations. In a reciprocal manner, the universities also need to believe that there are several inputs that the industry can provide to the functionality of a university. The role of the government, as stated by Perkmann et al. (2013) is to create the ideal linking ties between participants through encouraging policies and regulations that ensure fairness and growth of trust amongst participants.

The Triple Helix model provides that collaborations can only be fuelled by motivations. Thus the theory identifies two way forms of benefits between the industry and university communities. Liu and Jiang (2001) identify the following among the factors motivating the motives behind individual university staff working with industry; recognition need for promotion, personal accomplishment, better welfare, and more opportunities for grants and research funding. At large, the universities are motivated to collaborate with industry because of new funding, increased new research output, education programmes and student recruitment and placement (Muscio, 2013). On the other hand, the industry is motivated by high value research projects, access to subsidised research access to intellectual property, access to students and a better position in society among other factors (Muscio, 2013).

PROBLEM STATEMENT

SADC, like the rest of Africa, faces a great challenge in forging beneficial UICs. This challenge exposes the region to major problems such as; emerging high graduate unemployment and under-employment in many parts of Africa (Pauw et al, 2008). These mishaps coupled with

other pressing issues related to the underdevelopment of the region makes UIC a dearest sustainable solution. More so, the industrial operations in regional countries lack state-of-art technological advancement. This is a clear lack of knowledge sharing between the universities and industries in SADC. Several other researchers share the same insight, for instance; Ssebuwufu, et al. (2012), Afuwuqi and Wu (2009) and, Blankley and Booyens (2010).

RESEARCH QUESTIONS

1. What measures do SADC universities take to forge UICs?
2. How effective are the strategies used to pursue UICs?
3. How effective are the current university-industry synergy initiatives.
4. What support structures are in place to promote UICs in SADC region?

RESEARCH METHODS

The study adopted a qualitative approach. A qualitative paradigm was ideal and fundamental in helping the researcher to explore the universities in order to develop a detailed discussion. Subsequently a purposive sampling technique was performed. The study sought to deliberately include diverse universities, small, huge, new and old universities. This was fundamental to produce a balanced and broadly inclusive discussion. A total of 16 universities from 10 SADC countries were covered. The universities are all members of the Southern Africa Region University Association (SARUA). The study findings were obtained through document review. The researcher reviewed the universities' strategic plans. Certain sections of these strategic plans were significant for the purpose of this study. Main focus was on the situational analysis, key focus areas and

University-industry collaboration

the objectives of each studied university. The situational analysis was important for understanding the past and current circumstances surrounding these universities, strategic key focus areas and objectives of the universities were important for establishing the future plans of these universities. Other supplementary documents including the research policies and annual reports were also reviewed.

FINDINGS

For objective analysis of the study sample, strategic plans, research policies, annual reports and the research strategies were reviewed in order to obtain the insights about each university's approach in forging external collaborations with the industry and society in general. Table 1 below summarises the sample distribution.

Table 1: Sample Distribution

University Names	Country	Term	Reviewed Documents
University of Zimbabwe	Zimbabwe	2016-2020	Strategic Plan
University of Dar es Salaam	Tanzania	2014-2023	Strategic Plan
University of Mauritius	Mauritius	2015-2020	Strategic Plan
University of Free State	RSA	2015-2020	Strategic Plan
University of Seychelles	Seychelles	2017-2021	Strategic Plan
University of Swaziland	Swaziland	2016-2021	Strategic Plan
University of Cape Town	RSA	2016-2020	Strategic Plan
Copperbelt University	Zambia	2014-2018	Strategic Plan
University of Johannesburg	RSA	2015-2025	Strategic Plan
University of Stellenbosch	RSA	2013-2018	Strategic Plan
University of Malawi	Malawi	Approved 2016	Research Policy
BIUST	Botswana	2016-2022	Strategic Plan
Central University of Technology	RSA	2016-2020	Strategic Plan
University of Namibia	Namibia	For the Year 2016	Annual Report
University of Botswana	Botswana	Approved 2008	Research Strategy
University of Zambia	Zambia	2013-2014	Strategic Plan

Sixteen (16) SADC universities were studied. Five (5) were from South Africa. Zambia and Botswana had two representatives each. Malawi, Seychelles, Swaziland, Namibia, Tanzania, Mauritius and Zimbabwe, a single representative

each. All universities selected in this study are members of the Southern African Region University Association (SARUA). The table illustrate the tenure and nature of the documents reviewed for each institution. Ideally the Strategic plan was

central to the objectives of this study. However, where the strategic plan was not accessible relevant documents were used, for example in cases of University of Malawi, University of Namibia and University of Botswana, Research Policy, Annual Report and Research Strategy were used.

The preliminary investigation of the universities' strategic documents reveals the nature of strategic objectives and the priority of UICs in the institutions. Majority of the universities have the subject on their key focus objectives and is equally treated as a high priority objective in their plans. However, the nature of the objectives differs. In most cases it emerged that universities correlate the collaboration and partnerships to matters of research and innovation. While this is quite relevant to creating a knowledge-based economy, most universities overemphasise the creation of new knowledge, through research, but with limited to no intention to share the accumulating knowledge in the repository. For example, University of Cape Town, University of Zimbabwe, University of Botswana and University of Johannesburg aim to be world class centres for research. Their main thrust is to furbish the university to foster academic research which has no specific and immediate problem-solving implication in the industry. The table 2 refers.

In most cases, the universities' research aims to increase the published output. While this is equally significant, the substantive role of universities in creating KBE challenges them to focus on increasing the intellectual properties and patents which they commercialise or

partner in commercialisation. The implication of this approach produces more Mode I Knowledge than Applied Knowledge (Mode II Knowledge). The universities have solid plans on academic research output but very little is planned on how their initiatives will benefit the industries within their catchment area, besides producing learned graduates.

Evidence shows that the universities' primary focus is on achieving excellence in academic provision. Several universities strive to improve the quality and quantity of published literature output. This is a significant input in creating a knowledge-based economy, but makes a little impact in improving the performance of the corporate industry if there are no effective means by which that knowledge will be shared with the corporate world.

University of Dar es Salaam, University of Zambia, Central University of Technology and Copperbelt University have more solid strategic perspectives regarding forging UICs. This is commendable, especially noting that this is their top level strategic focus. Nonetheless, the universities do not have a clear structural procedure planned for achieving these objectives. BIUST, for example, has a clearer approach to preparing the institution for UICs; the university shall pursue their aim through sustainable research staffing and infrastructural development to support strong linkages. The Zambian universities (University of Zambia and Copperbelt University) adopt a unique approach to UICs concept their strategic focus has a more practical essence in terms of incorporating the industry.

University-industry collaboration

Table 2: Strategic Objectives

University Name	Strategic priority (NO/YES)	Nature of Objective
University of Zimbabwe	✓	To lead in utilisation-focused research through patenting and intellectual property protection and revenue generation
University of Dar es Salaam	✓	The university will establish partnerships with the private sector
University of Mauritius	✓	To drive research based on industry and societal needs
University of Zambia	✓	Promote Beneficial Partnerships in the Knowledge Economy.
University of Free State	X	Not applicable
University of Seychelles	X	To disseminate the output of the research to the general community
University of Swaziland	✓	Large capital projects may be financed through public-private partnership arrangements.
University of Cape Town	✓	To advance UCT as a research-intensive university that makes a distinctive contribution to knowledge, locally and globally
BIUST (Botswana)	✓	To ensure that research is institutionalised as a strategic priority with strong industry linkages supported by sustainable research staffing and infrastructure
University of Johannesburg	✓	Promote the culture of innovation and entrepreneurship by providing a stimulating and supportive environment, especially in its technology stations, for problem-solving research projects that can be commercialised, and applied technology-driven research and development with the potential to lead to patents and technology transfer.
University of Stellenbosch	✓	Align our research with a wide-ranging spectrum of challenges facing the world, Africa, our country and the local community
Copperbelt University	✓	Collaborations and Strategic Partnerships

Petros Gomwe

University of Malawi	✓	To provide a framework for establishing research partnerships by staff of the University.
Central University of Technology	✓	Forge strategic partnerships that are mutually beneficial
University of Namibia	X	NOT INDICTAED
University of Botswana	✓	To increase international collaborative research

The Zambian universities aim to forge strategic relationships with the private sector organisations. It is such kind of relationships that have a huge positive implication on creating a knowledge-based economy. University of Seychelles also has an ideal approach to this subject, although this is not regarded at their strategic level. The university aims to disseminate their research output into the society. The priority of pursuing this objective remains a major worry in their case, but their approach is the best and effective in creation of a knowledge-based economy.

University of Swaziland has a unique perspective regarding the subject. The university indicates that the major projects in their university business shall be financed through private partnerships. The university further confirms that it has received some tenders from the international community. It is greatly appreciable that the university is pursuing partnerships with the private corporate world; however, the partnerships do not have a great impact on the dissemination of knowledge they create rather they have great financial benefits.

A notable private university, Stellenbosch aims to align their research to several problems that face the world. A great stance to solving the issues of sustainability the corporate world currently face. Also this approach is likely to shift the universities approach from emphasising

basic research to applied research, although this would yield more benefits if the university further pursue mutually beneficial collaborations with the corporate world.

Free State University does not have any objective that relate to forging any collaborations with the industry. While this clearly does not appear anywhere in their strategic plan, this is not the only university from this sample that does not have a specific objective to pursue UICs. Several other universities do not directly indicate their plans in pursuing UICs, rather they emphasise innovative research and lean more on aiming to produce the research output which the wish to commercialise.

PROGRESSION IN PURSUING UICS

Further than mere objectives as outlined in the strategic plans, the researcher also examined the implementation level of these strategic objectives. This was meant to establish the priority accorded to the objectives. Moreover, the researcher identified the strategies used to pursue their objectives. Table 3 below provides a summary on the observations.

University-industry collaboration

Table 3: Implementation Strategies

Strategy	Implementation Level	Frequency
Research Partnerships	Strategic and Policy	All (16)
Curriculum Development	Strategic and Policy	All (Consultative basis) (16)
Incubation Centres	Strategic	UNAM, UZ, CBU, UCT, UJ (5)
Students Attachment	Operational	All (16)
Workshops and Trainings	Operational	All (16)

RESEARCH PARTNERSHIPS

All the universities studied have strategic interest in pursuing research partnerships. This is pursued at strategic level. While this is a great stride towards successful collaborations, the most common partnerships identified involve mostly the sponsorship and funding of the universities research projects. Few cases involve applied research, for instance, in 2014/5 the University of Zimbabwe was consulted to conduct an applied survey by a parastatal. Also, the Copperbelt University (CBU) carries continuous studies for the Copper mining in Zambia.

CURRICULUM DEVELOPMENT

As a norm, and a requirement by several national education frameworks, all universities consult with the industries when developing their curricula. This is done at a strategic level, but does not allow the industry to fully influence the learning programmes that the universities develop, instead in most cases they may be required only to endorse the programmes already developed. This form of interaction opens the doors for the universities to interact with the industry but it is not fully utilised in the SADC region.

INCUBATION CENTRES

The least number of universities have successful incubation centres. This is a major endeavour by the universities and industries in sharing the knowledge. Successful examples include the UNAM's Centre for Innovation and Development, University of Zimbabwe's Parirenyatwa Medical School, UZ School of Social Work and Copperbelt University Africa Centre of Excellence for Sustainable Mining (CBU ACESM) among other cases in the Republic of South Africa.

STUDENTS ATTACHMENT

All contemporary universities introduced the students' attachment programmes. The attachment programmes vary from one university to another but at most students spend a year in a work-related learning environment. The attachments are a critical tool for sharing knowledge between the universities and the industries, however, the evaluation of the attachment programmes indicate that the learners face a great challenge reconciling the industry and academic experience (Sa, 2014). This is partially explained by lack of synchronisation of the academic programmes to the ever-changing demands of the industry.

WORKSHOPS AND TRAININGS

These involve a formal short term learning services that are provided to industry members by the academia as well as interactive sessions between the academia and the industry. Trainings and workshops benefit the industry most. The industry successfully absorbs knowledge from the academia but the academia may not be able to learn from the industry trainees. This creates an unbalanced situation where knowledge flows only from one side. However, this is appreciable because it allows the industry trainees to gain more knowledge from the academia which mostly has the freshest knowledge

obtained through continuous basic research.

DISCUSSION

SADC universities are playing a fundamental role in educating their nations, but their mandate is restricted to their campuses. This is a peculiar challenge that is attributed to lack of the enabling policies and environment by governments in SADC. Tocan (2012) relates this to lack of support policies that enable the universities to collaborate with the industry and the government research institutions. Ideally, Tocan (2012) argues that the lack of such an enabling environment stifles the full utilisation of the universities' roles of outreaching. More so, it results in knowledge being locked up in the universities when the industries suffer stunted growth.

Nonetheless, the universities play a pivotal role in attracting and educating learners in various learning fields but the impact of this education is less evident in their societies especially considering the low rates of development, high levels of unemployment and unsustainable production systems in the region. Also as noted by Tocan (2012) where a successful knowledge-based economy is created, there will be changes in the nature of jobs in the economy, thus a shift from blue-collar jobs to white-collar jobs. The study generally observes insignificant change in the nature of jobs.

While this study observed that irrespective of the pivotal role that the universities play but their mandate for outreaching remains needing. This is evident as Sá (2014) attests that the universities in Africa are yet to explore on collaborations with the industry. Lack of trust between potential partners and indefinite benefits from such collaborations underscores the will to pursue them (Gulbrandsen & Levitt, 2000). This implies that transformation stagnates in the region

University-industry collaboration

pushing further the dream to create knowledge based economies in SADC region. The region is challenged by lack of concise and definite roadmap and disseminating benefits of UICs (Gulbrandsen & Levitt, 2000).

The outreaching role of the universities challenges them to participate and interact with the societies. This remains an uncompleted task in the SADC. According to Ssebuwufu, et al. (2012) the university-industry collaborations are a major step towards transforming Africa. In the same study sponsored by the Association of African Universities (AAU) and the Association of Universities and Colleges of Canada (AUCC) it is reported that there is very little data on what has been done by the universities in forging these collaborations. Their strategic approach is very positive yet the communities and societies lack positive appreciation of such collaborations.

As argued by Ssebuwufu, et al. (2012), the African continent is yet to establish a systematic way in which their higher and tertiary education institutions can relate with the industry and other governmental research institutions. This is in contrary to the Triple Helix Model, which anticipated that for effective collaborations, partners should define the course of their interaction as well as outline and agree on the benefits to accrue to each party of the collaboration. In addition, for such collaborations to be functional, the government must play a critical role of administering governing policies that create and enable formality and development of trust between the collaborating partners (Saad & Zawdie, 2005)

The findings of this study reveal that strategic plans of the universities do not directly address the matters of UICs, rather they emphasise more on improving their research capacities. This ideology is critical as Zyl, et al. (2007) who argue that for

effective knowledge creation, there must be a strong perception that knowledge is a valuable resource support it. A notable observation of the study is that universities do emphasise the need and importance of information in their countries but the cycle is not completed by ensuring that the gathered information is shared in ways that makes it valuable and make economic essence. The study found that universities do create knowledge and places great value on the information they gather. However, the SADC governments have not invested a considerable effort in ensuring that the information output is converted into economic prospect for their respective countries as suggested by Zyl, et al. (2007) when he argues that for success knowledge fountains need to emphasise on getting the return on the investment on research.

Failure to build capacity on information utilisation weakens the potential of SADC region. It is evident that SADC universities amass volumes of research output and intellectual properties, which if they were fully utilised could have expanded the industrialisation in the region (AAU, 2012). Information utilisation remains an important aspect in the knowledge-based economy and indeed Massaquoi (2002) emphasises that the most fundamental way of creating a knowledge economy is through dissemination of the information. Information dissemination therefore ought to be a top priority for SADC region since currently there are quite very few higher learning institutions which have clear roadmap on how to disseminate the knowledge they create.

Research partnerships emerge to be the common target of all universities in the SADC region. This is particularly for benefits that Liu and Jiang (2001) attribute UICs. However, while partnerships are developing to be a strong approach to capacitate the universities' research roles, the region may remain underdeveloped and struggles to transform to a knowledge-

based economy if their research output is not mutually beneficial with the industry and the rest of the society. Apparently, as the Triple Helix model proposes, the government is the key controlling stakeholder hence must ensure that there are clear dimensions of interactions that define benefits of UICs (Muscio, 2013). Most SADC universities aim to commercialise their research output merely for revenue generation. This approach is income-oriented and mostly likely to benefit the region in short run terms. In the long-run commercialising research output, must be coupled with the industry partners for they are resource capacitated to put the concepts into practice.

A mere aim by the universities to commercialise their research output has a little impact on creating a knowledge-based economy. Firstly, because the universities in SADC region have limited resource endowment to fully commercialise economic ideas. Secondly, because a university commercialising its economic idea means that the created knowledge revolves in the same institution, which in essence is resource, crippled to fully develop the idea into a realistic product (Peng, 2007). The hand-glove and underutilised relationship ties that the universities have with the industry fails to explore the countries' economic possibilities (*ibid*).

The study further discovered that the SADC universities do a commendable job in consulting with the industry stakeholders when developing their curricula. This, as noted particularly in countries such as South Africa and Botswana where learning programmes' accreditation must be accompanied by the needs assessment report, has helped in enhancing relevance of the study programmes and increase the employability of the graduates (WEF, 2011). However, this does not yield as many benefits as the approach is potential of since the industries

are not involved in the subsequent stages of the implementation of those curricula. Apparently the industry's roles is only limited to endorsing the curricula but not involved in the implementation and inputting of the process.

The challenge of limited involvement also challenges the other forms of interactions that take place between the universities and the industry such as the attachment programmes and trainings and workshops (WEF, 2011). The attachment programme does not have an ideal platform that may allow the industry to feed into the academic system, hence only allows the students to learn the industries' norms. Tocan (2012) notes that training and workshops are restricted to specified areas of learning and do not allow the academic system to expand the platform to share their knowledge in other critical areas unless the companies have special interest and can afford to be engaged in those areas.

This is contrary to the premises of National Innovation Systems that advocates for the full involvement and participation of all key stakeholders (Martin, 2000). The study found out that the interactions that take place between the universities and the industries are one way, in which information basically flows only from the universities and little is learnt about the industry by the universities.

Incubations centres represent the most effective ways for UICs. However, this remains a dream target if the centres do not allow the corporate world to play an active role. Most incubation centres reviewed for the purpose of this study concentrate on grooming the leaners on theoretical concepts in the curricula except for medical schools. This limits the effectiveness of their purpose in creating and sharing knowledge. The centres should adequately interface with the corporate world and allow the industry to input their

University-industry collaboration

ideas which the academia must challenge and in turn refine.

CONCLUSIONS

This study reflects on the role and influence of UICs in creating KBE. The reviewed literature signifies the potent role that UICs play in developing KBE. The universities are charged with the roles of creating and sharing knowledge while partaking with the industry. SADC region is still in the preliminary phase of creating UICs. Main focus of the SADC universities is on improving their research-centre functionality. The theoretical framework of the study confirms the critical role of the UICs in creating KBE, but evidence gathered in this study indicates that SADC universities are yet to play this critical role. It is, however, appreciable that the universities are taking a step towards the right direction even though they still remain challenged to accomplish the task.

The strategic outlook of SADC universities is geared towards creating knowledge, but in isolation of the industry. A few universities aim to model their research paradigm towards solving the national and international problems. This initiative may not be fully effective if the universities and the industry remain isolated in their operations. The available evidence for the strategic planning of universities solidly reflects that the industry and the universities operate two different philosophies. Their philosophies are not reconciled and their operations are yet to reflect that complimentary work can expand the knowledge horizons by a wide margin. This basically reflects that attaining KBEs is still a raw subject in the region.

While regular problems of developing nations continue stumbling progress on this agenda, Ssebuwufu, et al. (2012) identify matters of funding, policy alignment and lack of expectation for fundamental benefits as the major challenges to effectiveness of UICs in

developing KBE. It is identified that the governments do not provide for appropriate structural policies and procedural approach to promoting the UICs in SADC. Funding of UICs in SADC is inconsistent and not provided for by the governments. The government structures do not have funding support for UICs. The issue remains the aspect between the universities and the industries, yet they always have financial challenges. This cripples the development and progress of UICs in SADC.

Lack of specific and objective data on what the universities have done so far in forging the UICs challenges effective evaluation of their role in creating KBEs. However, gathered evidence clearly shows that their universities are yet to record successes in this regard. An analytical study to find out what SADC universities are currently doing in creating KBE represents future research direction.

RECOMMENDATIONS

Based on the conclusions made in this study the following recommendations are made;

- a. SADC governments should align the economic policies to promote and facilitate the interaction between the government research bodies, the industry and the universities. The policy alignment is a fundamental prerequisite; it helps to create a cultural paradigm shift. Facilitative policies will build the trust amongst the players because it acts as the point of reference and a governing tool during the interactions and relationships of the participants. The policy alignment should focus on eliminating bureaucracy that cripples the interaction efforts between the universities and the industry.
- b. Alternative self-sustainable funding mechanisms must also be sought to

avoid overreliance of universities on government funding. This calls for universities to initiate strategic relationships with the industry that earns them income on long term basis. Such relationships should be founded on grounds mutual benefit and reciprocity.

References

- A van Zyl, Amadi-Echendu, J. & Bothma, T. J. M. (2007). Nine drivers of knowledge transfer between universities and industry R&D partners in South Africa. *South African Journal of Information Management, Vol XIII, No. 30 June 2007*
- AAU & AUCC. (2012). *Strengthening university-industry linkages in Africa: A study on institutional capacities and gaps*. Accra, APNET.
- Afuwoqi, A. & Wu, H. (2009). *Promoting Industry-University Partnership in Information Technology*. Unpublished paper
- Blankley W. O, & Booyens I. (2010). Building a knowledge economy in South Africa. *South African Journal of Science of 2010; Volume 106 (11/12)*
- Cooke, P. & Morgan, K. (1998). The Associational Economy: Firms, Regions, and Innovation. *Research Policy, DOI 10.1016/S0048-7333(02)00123-3*
- Edgar, G, & Kharazmi, O. M. (2011). *University-Industry Collaboration in a National Systems of Innovation: Generating Transition Policy Scenarios for Iran*. University of Sterling. United Kingdom.
- Etzkowitz, H and Leydesdorff, L. (1997). *Universities in the Global Knowledge Economy: A triple helix of university-industry-government relations*. London: Cassell.
- Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: From National Systems and “Mode 2” to a Triple Helix of university—industry—government relations. *Research Policy, Volume 29, pp 109—123*.
- Etzkowitz, H., Magnus G. and Levitt, J. (2000). *Public Venture Capital: Government Funding Sources for Technology Entrepreneurs*. New York: Harcourt
- Freeman, C. (1987). *Technology and Economic Performance: Lessons from Japan*, Pinter, London.
- Hakansson, H. and Snehota, I. (1995) *Developing Relationships in Business Networks*. Routledge, London.
- Kruss, G., et al. (2009). Knowledge for Development: University-Firm Interaction in Sub-Saharan Africa: The Case of Uganda: *Working Papers. Nigerian Institute of Social and Economic Research (NISER)*. Unpublished paper.
- Lee, K. J. (2011). From interpersonal networks to inter-organizational alliances for university—industry collaborations in Japan: The case of the Tokyo Institute of Technology. *R & D Management, Volume 41, pp 190—201*.
- Liu, H. & Jiang, Y. (2001). Technology transfer from higher education institutions to industry in China: nature and implications. *Technovation Volume 21 (2001) pp 175—188*.
- Lockett, A., & Wright, M. (2008). Resources, capabilities, risk capital and the creation of university spin-out companies. *Research Policy, Volume 34, pp 1043—1057*.
- Lundvall, B, A. (1992). *National Innovation Systems: Towards a Theory of Innovation and Interactive Learning*. Pinter, London.
- Malerba, F. (2003). Sectoral System and Innovation and Technology Policy, *Revista Brasileira de Inovacao, Volume 2, pp 329-374*.
- Martin, M. (2000). *Managing university-industry relations: A study of institutional practices from 12 different countries*. UNESCO.

University-industry collaboration

- Massaquoi, J.G.M. (2002). University-Industry Partnership for Cooperative Technology Development in Africa: Opportunities, Challenges, Strategies and Policy Issues. Nairobi, UNESCO.
- MERIT (1995). Innovation Strategies of Europe's Largest Industrial Firms. *PACE Report*. Luxembourg.
- Muscio, A. (2013). University—industry linkages: What are the determinants of distance in collaborations? *Papers in Regional Science*, pp 92, 715—739.
- Peng, X. (2007). A Comparative Study of Knowledge-Based Economy Development between China and the USA. *Data Science Journal*, Volume 6, Supplement, 9 July 2007.
- Perkmann, M., Tartari, V., Mckelvey, M., Autio, E., Brostroöm, A., D'este, P., et al. (2013). Academic engagement and commercialisation: A review of the literature on university—industry relations. *Research Policy*. pp 42, 423—442.
- Porter, M. (1990), *The Competitive Advantage of Nations*. Macmillan, Basingstoke, UK.
- Sá C. M. (2014). Perspective of Industry's Engagement with African Universities. *Indagatio Didactica*. Vol. 6 (no prelo)
- Saad. M. & Zawdie, G. (2005). From technology transfer to the emergence of a triple helix culture: The experience of Algeria in innovation and technological capability development, *Technology Analysis & Strategic Management*, Vol 17:1, pp 89-103.
- Sheehan, P.J. et al. (1995). Australia and the Knowledge Economy: An Assessment of Enhanced Economic Growth through Science and Technology. *Centre for Strategic Economic Studies*. Victoria University, Melbourne, Australia
- Ssebuwufu, J., Ludwick, M. & Béland, T. (2012). Strengthening Linkages between Industry and the Productive Sector and Higher Education Institutions in Africa. *Working Paper*
- Tocan. M. C. (2012) Knowledge Based Economy Assessment, *Unpublished paper*
- World Economic Forum. (2011). *The Africa Competitiveness Report 2011*. Geneva: World Economic Forum.

Relevance of the clothing curriculum to industry: A case study of a polytechnic in Zimbabwe***Isabel Makwara Mupfumira, *Gamuchirai Tsitsi Ndamba and **Emily Motsi**

*Robert Mugabe School of Education and Culture, Great Zimbabwe University

**Faculty of Education University of Zimbabwe

Corresponding Author: ndambagt@gmail.com Cell: +263 777128992 / +263 782795253

Abstract

This study examined the relevance of the National Certificate in Industrial Clothing Design and Construction Curriculum to the Clothing Industry. A qualitative approach was used in the study utilising a case study of one Polytechnic in Zimbabwe. Convenience and purposive sampling were used to come up with a sample for the study. The participants were four second-year clothing students, four production managers and three clothing lecturers. Data were collected through interviews, observation and document analysis. The findings showed that the curriculum furnished students with basic skills and competences for the clothing industry. However, the skills and competences may not be relevant for employment in the clothing industry. The study established that stakeholder involvement in curriculum design and implementation was essential for development of relevant programmes. The study recommends a link between curriculum designers and implementers with industry for development of relevant programmes.

Keywords: curriculum, stakeholder involvement, skills and competences, employment, clothing industry.

INTRODUCTION

The National Certificate in Industrial Clothing Design and Construction is a two-year programme. The entry requirement is a minimum of five 'O' level passes including Fashion and Fabrics and English Language.

In 1997, the National Certificate in Industrial Clothing Construction Programme 374 was introduced at the Polytechnic. According to Higher Education Examination Council of Zimbabwe (1993b), the programme was designed to produce a clothing constructor who is highly skilled in

the construction of garments to satisfy the needs of the clothing industry. The programme comprised Industrial Pattern Techniques, Industrial Sewing Techniques, Clothing Factory Management and Operations, Garment Design and Textile Studies. One of the programme's aims was to train versatile operators within the clothing industries. In 2005, the programme was revised and renamed code 374/04 National Certificate in Industrial Clothing Design and Construction. In addition to the subjects outlined, the revised programme also offers Computer appreciation and Entrepreneurial Skills Development.

Relevance of the clothing curriculum to industry

The problem noted by clothing lecturers at the Polytechnic was that graduates were unable to secure jobs in the clothing industry. This posed the question of whether the clothing curriculum was relevant to industry or not. Information gathered from the Head of Department for Clothing at the Polytechnic provided statistics to support the problem noted. The statistics gathered just before the study was conducted showed that from an intake of 31 students, 18 (58%) were teaching Fashion and Fabrics in secondary schools, 12 (39%) were self-employed in the business of making clothes and 1 (3%) was in other areas not related to clothing. The same trend was noted for the other earlier intakes.

AIMS AND OBJECTIVES OF THE STUDY

The study aimed at examining the relevance of the National Certificate in Industrial Clothing Design and Construction to the clothing industry. Specifically, the research sought to examine whether the aims, objectives and content of the clothing curriculum equipped students with the relevant skills and competences for the clothing industry

CONCEPTUAL FRAMEWORK:

CURRICULUM

Curriculum refers to a structured plan of intended learning outcomes underpinning knowledge, skills, behaviour and associated learning experiences (Doll, 1992; Nkomo, 1995). Cronbleth (1992) defines curriculum as answering three questions: What knowledge, skills and values are most worthwhile? Why are they most worthwhile? How should the young acquire them? In this research, the clothing curriculum was defined as the content of the subjects offered in the National Certificate in Industrial Clothing Design and Construction Programme and all

the learning experiences, which the students undergo.

Carl (1995) refers to subject curriculum as a description of systematically selected and classified aims, objectives, content, teaching and learning experience and evaluation, for a subject. A subject curriculum looks at a particular subject for the whole programme. The current Industrial Pattern Techniques subject covers the aims, objectives, content, teaching, learning experiences and evaluation for the National Certificate, Diploma and Higher National Diploma levels.

RELEVANCE OF A CURRICULUM

Relevance is important to all curriculum planners and implementers, including those in the clothing field. The industrial clothing curriculum should be of utility value to the Clothing industry (Shah, 2010). For relevance, the clothing curriculum should meet expectations of industry (Simons, 2014). There is need for contextualisation of the teaching and learning of the clothing curriculum for relevance to industry (Fletcher, Djajalaksana, & Eison, 2012). Dewey in the Central African Correspondence College (CACC) Study Module (2002), and Gunther, Estes and Schwab (1999) are of the view that for curriculum to be relevant, it should address the needs of the learner, societal purpose of schooling and subject matter. The curriculum should be relevant to the society into which the individual should fit, with vocational goals being prepared for an occupation (Boyd, 1979; Peresu & Nhundu, 1999; Shah, 2010). The National Certificate in Industrial Clothing Design and Construction curriculum should be relevant to the clothing industry. As module 13 (2000) states, curriculum should include knowledge which is applicable to the sector which uses it.

Theorising on curriculum usually centres on the needs of society, the learner, learning content, teaching and learning activities and desired learning outcomes (Schubert, 1987). According to the CACC Study Module (2002), these considerations bring about the five essential components of curriculum design namely: 1) situation analysis, 2) aims and objectives, 3) guidelines on teaching and learning opportunities, 4) learning content and 5) evaluation. For relevance, the clothing curriculum should take into account the context, the total situation that incorporates the learner, industry, personnel, college facilities and subject matter.

CURRICULUM MODELS

Carl (1995) regards a curriculum design as the systematic and effective planning action, which brings together the essential components of the curriculum. According to Vermeulen (1998), different components of the curriculum are organised using models. There are different types of curriculum models, such as those propounded by Tyler, Wheeler, Taba, Nichole, Fraser and Killen, among others (CACC Study Module, 2002).

Two models selected to illustrate the organisation of curriculum components are Fraser's and Killen's. Fraser's model is considered as a traditional model (Fraser et al., 1993). The model places emphasis on situational analysis, aims and objectives, guidelines on teaching and learning opportunities, learning content and evaluation.

Situation analysis interrelates with other components and addresses the question of who is in the situation (Vermeulen, 1997). The situation constitutes the learners, society, learning content and institutions to which curriculum relates. The aims usually refer to

the specific knowledge, skills and attitudes the curriculum aims at. Vermeulen (1997) points out that learning content should correlate with a specific society, its technology, the didactic environment, availability of funds and workshop support services for it to be relevant. Relevance of the clothing curriculum can only be realised through an appropriate didactic environment by the provision of adequate teaching and learning resources and appropriate personnel (Gwarinda, 2000; Puyate, 2004, 2008; Teaching Home Economics, 2013). In Nigeria, inadequate funding has been found to weaken technical education (Momoh, 2012). The relevance of the industrial Clothing curriculum may be affected by lack of funding since technical subjects are capital intensive (Gudyanga, 2014).

In Fraser's model, situation analysis interrelates with other components and addresses the question of who is in the situation (Vermeulen, 1997). The situation constitutes the learners, society, learning content and institutions to which curriculum relates. The aims provide direction of intent of the educational process (Ofei, 2011). The clothing curriculum should relate to the clothing industry. Vermeulen (1997) points out that learning content should correlate with a specific society, its technology, the didactic environment, availability of funds and workshop support services for it to be relevant. Teaching and learning experiences involve interaction between the learner and learning content.

The second model is that of Killen's outcomes based model of curriculum design.

In Killen's outcomes based model, the outcomes have prominence as they influence and affect selection of content, instruction method, assessment, placement and advancement. Outcomes based education focuses on desired results (Gouws, 2007).

Relevance of the clothing curriculum to industry

When comparing the Killen and Fraser's models, there is some interdependence in the components of Fraser's model, no part is given prominence. In Killen's model, outcomes have

prominence as they affect and influence the other parts.

SUGGESTED MODEL FOR THE CLOTHING CURRICULUM

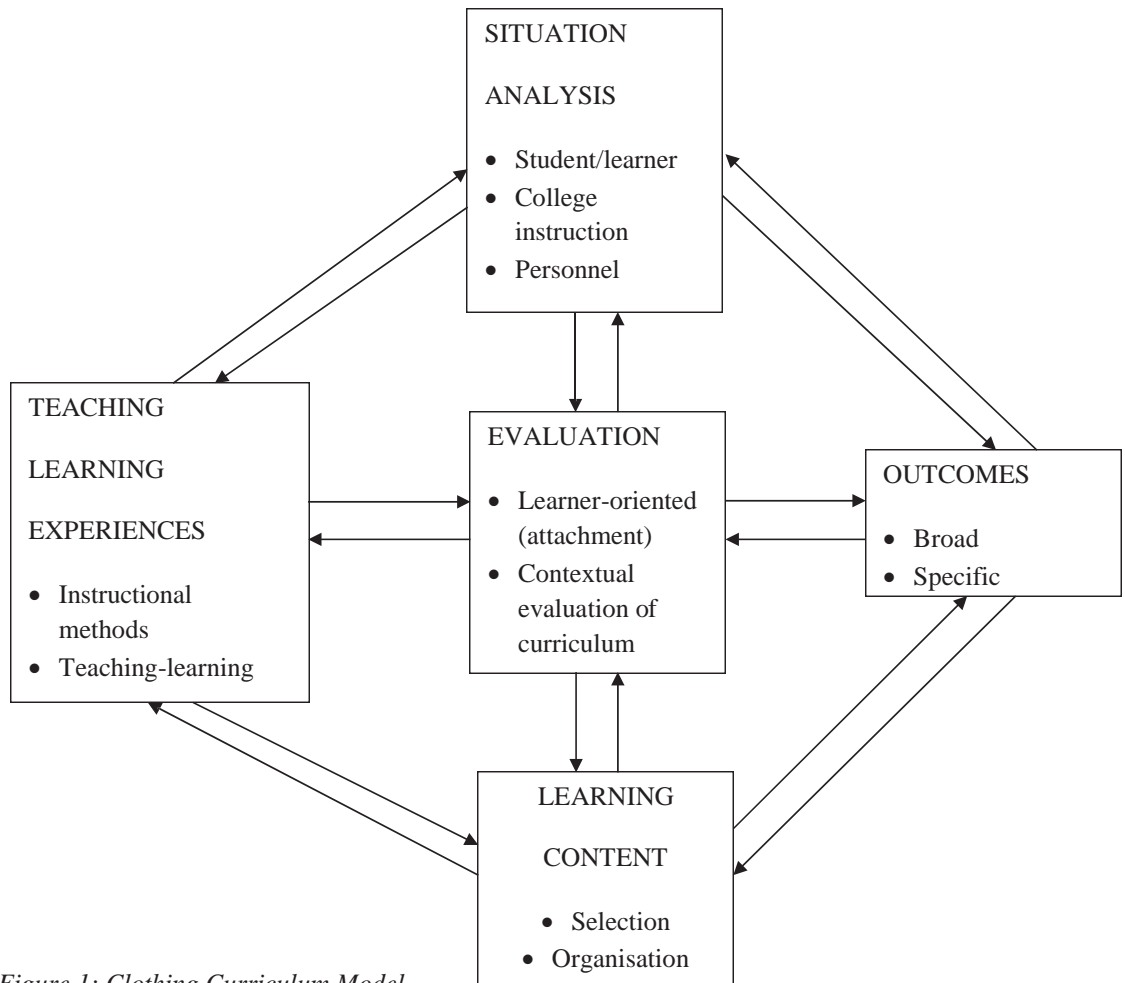


Figure 1: Clothing Curriculum Model

Source: Author 2018

The model above, which is the researchers' own work, has five parts, which are interactive. The total situation is analysed to establish the needs of students, the clothing industry and subject matter. Outcomes are formulated to encompass the whole programme (broad outcomes) and the specific outcomes relate to the different subject areas for example Industrial Sewing Techniques. The other components influence the selection and organisation of content, teaching and learning situation.

INVOLVEMENT OF STAKEHOLDERS IN CURRICULUM DESIGN AND IMPLEMENTATION

As a measure of providing relevant curriculum, there is need for stakeholder involvement when curriculum is designed and implemented. Interest groups like industry influence curriculum and for this reason, it is important to develop a partnership with them for provision of relevant curriculum (Burkhill & Eaton, 2011). A link between polytechnics and industry is important as the stakeholders may assist in provision of material support and relevant content, which may be included in the programmes (Rose, 2003; Ngwenya, 2010; Bull, 2011). Calloids and Hallocks (1980), Dale (1989), UNESCO (1993; 1999) all are of the view that curriculum needs to be relevant to the interested groups like commerce and industry. Education should have a close relationship with the world of work (Boyd, 1979; Lauglo, 1983; Chowdry & Sudha Rao, 1992; Matseke, 1997). Frantz (1997) points out that education plays an important role in the preparation of a workforce with the right qualification. This applies to the Polytechnic's Clothing Curriculum, (the focus of the present study), which also has to relate to the needs of the clothing industry.

Barlow (1974) suggests use of the advisory committee, which provides a structure through which representatives of business and industry are involved and keep vocational education attuned to labour force needs. Roger (1985) also suggests that good contacts in industry help the educator place graduates in industry and structure programme to suit industry. The Polytechnic's Clothing Department used to have an advisory committee. This committee assisted in the procurement of industrial machinery, attachment of students, curriculum review, among other responsibilities. However, this was phased out due to financial constraints. The Polytechnic could not afford to pay the sitting allowances.

Involving stakeholders, helps provide a relevant curriculum (Tan & Venables, 2010; Vollmers, Rattiff & Hoge: <http://sbaer.uca.ed/research/acme/2001/46.pdf>). This would avoid what Roger (1988) refers to as a mismatch between student capacities and requirements of the employers. Stakeholder involvement would also avoid a situation put forward by Mandebvu (1996) where his study established that employers preferred to train their own employees because skills learnt in school were incompatible with requirements of industry. Burt (1987) says the number of graduates who find jobs in the field they have been trained for measures the success of a technical programme. The Polytechnic under the study falls far short in this area because only a small percentage of graduates join the clothing industry.

Relevance of the clothing curriculum to industry

METHODOLOGY:

Design

The qualitative approach was used in the study. Qualitative research is said to involve an interpretive, naturalistic approach to subject matter (McMillan & Schumacher, 2010; Marshall, 1995). A case study design was used (Cohen, Manion & Morrison, 2011).

A case study is a type of qualitative research in which a researcher explores a single entity or phenomenon bounded by time and activity and collects detailed data using a variety of data collection instruments (Leedy & Ormrod, 2005; Hancock & Algozzine, 2006; DeVos, Strydom, Fouche & Deport, 2012).

A case study of one Polytechnic was conducted. Borg Gall and Gall (1997), Leedy and Ormrod (2005) and McMillan and Schumacher (2010) support the study of a particular case. They say qualitative research is based on the assumption that each individual in each setting is unique. A case study was the best research design for studying the relevance of the Industrial Clothing Design and construction curriculum as it helped to provide a detailed description of the phenomenon.

SAMPLE

The population comprised students, lecturers and production managers. The clothing lecturers were selected, as they were responsible for the interpretation and implementation of the curriculum. The National Certificate students were selected as they already had the contact session at college and were on attachment in industry. These were second year students and were better placed to judge whether skills gained at college were relevant to industry. The

production managers in the clothing industry were chosen as they were considered to be in a better position to assess if students were adequately prepared for industry.

A sample of 11 participants was drawn using purposive and convenience sampling (Cohen, et. al., 2011; Johnson, & Christensen, 2012). Peshkin in Leedy and Ormrod (2005) and Cohen and Manion (1994) say qualitative researchers select participants purposively to gain understanding of the complex phenomenon in question. Three (3) lecturers who participated in the study were purposively selected basing on those lecturing in subjects essential in the production line. The convenience sampling was used to select 4 second year students and 4 production managers. The criterion used was closeness of factories to minimise on time and financial costs. Marshall and Rossman (2011) say this form of sampling is planned around practical issues such as costs and researcher's comfort.

INSTRUMENTS

The data were collected through interviews, observation, document analysis and informal conversation. Making use of several methods of data collection is a good example of triangulation (Borg, Gall & Gall, 1993; Neuman, 2000; Chisaka & Vakalisa, 2003; Leedy & Ormrod 2005).

INTERVIEW

The researchers used the interview as the primary method of data collection. It was used because it is a direct method of gathering data on a person's experience, attitudes and interests (Smith, 1995). The interview also accommodated all types of questions and extensive probes to get more information and clarification on issues (McMillan & Schumacher, 1989).

The non-scheduled structured interview was also used to gather data. This type of interview was chosen as it allows participants to express their views broadly on certain issues by commenting widely on defined issues (Smith, 1995; Cohen, et. al., 2011). In this case, participants expressed their views on the relevance of the clothing curriculum to industry. The interview contained precise questions. It made provision for alternative or sub-questions depending on answers given. Industry personnel, lecturers and second year students were interviewed. The interview was to find out the views and attitudes of the participants towards the relevance of the clothing curriculum to industry. This was in relation to the skills and competences developed in students as they relate to industry.

DOCUMENT ANALYSIS

Analysing documents is a way of generating qualitative data from a written, printed or recorded source to answer research questions (Lincoln & Guba, 1985; Punch, 2009; Creswell, 2010). Documents studied were the Regulations and Syllabi. The documents provided information on the documented intended Curriculum for National Certificate Industrial Clothing Design and construction. The researchers, production managers and the lecturers studied the syllabi documents to assess relevance of contents to the needs of the industry. In addition, the researchers looked at industrial attachment logbooks to assess the performance of students in the various departments.

OBSERVATION

The other procedure used was observation. Marshall and Rossman (2011) say observation entails the systematic description of events, behaviours and artefacts in the social setting selected for

study as seen by the researcher. Non-participant observation was used. The researchers observed the activities and procedures occurring in the various departments in the clothing industries. These were compared with those suggested in the syllabus to determine whether the syllabus furnished students with relevant skills.

PROCEDURE

The study was conducted at a Polytechnic's clothing department and clothing industry factories in Harare where the Polytechnic students were attached. This was meant to provide a setting for determining the relevance of the clothing curriculum to the clothing industry.

A visitation schedule was prepared for the visits to the clothing industries. The visitation schedule was made up of specific arrangements to see the production managers, students, factory facilities, equipment and the industrial attachment logbooks. The industrial attachment visits covered a period of five months. The researchers spent approximately four hours at each factory, making four visits per factory.

The first visit was a familiarisation visit. The second visit involved an analysis of the contents of the industrial attachment logbook and student interviews. The production managers were given the syllabuses to study in preparation for the interview for the next visit. The third and fourth visits focused on further examination of the logbook, students and production managers' interviews.

In order to collect data from lecturers, it was necessary to schedule interviews. One interview was conducted per lecturer covering one hour to one and half hours. The syllabuses for Garment Design, Sewing Techniques and Pattern Techniques were analysed during the interview.

Relevance of the clothing curriculum to industry

DATA ANALYSIS

The data collected from interviews, observation and logbook analysis were presented in descriptive form. Recurring themes were identified from data and were used as basis for data presentation, analysis and discussion.

FINDINGS AND DISCUSSION

The findings and discussion focused on the themes, which emerged from the research. The recurring themes were:

- Relevance of syllabus aims, objectives and content.
- Stakeholders' involvement in curriculum design.
- Employment in Clothing Industry.

RELEVANCE OF THE SYLLABUS AIMS, OBJECTIVES AND CONTENT

From syllabus analysis and interviews conducted, the evidence produced was that the aims, objectives and content of the programme support acquisition of relevant basic skills for clothing construction. This ensures that the national certificate industrial clothing curriculum is of utility value (Shah, 2010). This situation reflects Chowdry and Sudha Rao's (1992) view that the main objective of vocational education is to provide requisite skills to contribute to the economic development of the country. The main aim of the programme is to develop artisans with knowledge, skills and attitudes required in the clothing industry (Higher Education Examinations Council Programme Regulations, 2005). This shows that the programme was designed to meet the requirements of industry. Cronbleth (1992) is of the view that curriculum should answer the question on what knowledge, skills and

values are most worthwhile and why. The findings from the production managers' interview indicated that the programme furnished students with relevant skills and competences for the production of clothes. This was echoed by one Production Manager who said, "*The programme is relevant for National Certificate, it gives students basic skills for the Production of clothes*".

Lecturers from the various subject areas constituting the whole programme revealed that the programme was relevant for the acquisition of basic skills in industry. This is reflected in the following statement: "*The programme itself is relevant as it exposes students to relevant skills and competences for production of clothes*". Acquisition of basic skills and competences helps the graduate to be able to make clothing in the industry. This is in line with Boyd (1979), Peresu and Nhundu (1999) and Module 13 (2000) that the individual should fit into the occupation being prepared for.

It was revealed that the programme furnishes the students with skills and competences in using industrial machines in the construction of men's wear, children's wear and casual wear. The programme also exposed students to relevant techniques in industrial pattern making, sewing and design. Gunther, et al. (1999) indicate that the curriculum should also adequately cover the content of the subject. From the student interview, it was apparent that the programme furnished the students with relevant skills and competences in the construction of skirts, blouses/shirts, dresses and trousers. Students did not have problems in the production line. One of the students said, "*The programme is adequate, it covers all that is done at industry in different departments e.g. pattern making, cutting room, assembly line*". The findings show that the subject matter was adequately addressed as the programme exposes students to processes used in clothing production.

The findings showed that the programme aims, objectives and content furnished students with relevant skills and competences for the clothing industry. This is in line with Lauglo's (1993) view that if education is properly organised, it should be centred on the workplace. Students should be furnished with knowledge and skills applicable at the workplace (Simons, 2014). By being able to operate and maintain machines, college graduates would successfully operate in industry. The acquisition of different techniques in designing, pattern making and factory management helped students to effectively operate in the production of a variety of clothing for different uses.

The findings further established that some of the intended aims and objectives of the programme were not met due to inadequate equipment. This was the case in acquisition of skills in computer aided design and pattern making. For effective learning, Matseke (1997) says Polytechnics should be equipped like industry. The lecturers' interview showed that lack of some equipment was a limiting factor in the implementation of the curriculum as shown by the following statement, *"Lack of resources like computers for computer aided design makes implementation of the curriculum difficult. At college students are only exposed to manual designing, pattern making and grading."*

Students also expressed that skill acquisition in some cases was negatively affected by lack of certain equipment at college. One of the students interviewed said, *"We are not prepared to use computers at college as all grading and marker making is done by hand. We come across computer aided pattern making for the first time in industry"*. The absence of Computer Aided Design (CAD)/Computer Aided Manufacture (CAM) at the polytechnic has a negative

impact on acquisition of computer skills in designing and pattern making. CACC Study Guide (2002) says the situation where curriculum is implemented should be analysed for relevance. Lack of a relevant didactic environment can affect the relevance of curriculum (Puyate, 2004; 2008; Gwarinda, 2001). Technology, availability of funds and workshop support services should be considered for relevance (Vermaulen, 1997). Lack of relevant support services affects acquisition of skills and competences.

EMPLOYMENT IN THE CLOTHING INDUSTRY

The findings showed that although students gained basic skills and competences for the production processes in the clothing industry, the majority of graduates did not find employment in the clothing industry. This is quite worrying. The number of graduates who join the field they are being prepared for (Burts, 1997; Mandebvu, 1996; Roger, 1988) reflects the success of a programme.

The lecturers and production managers expressed that most of the jobs in industry were not challenging enough for college graduates. The views of lecturers and production managers were demonstrated by a production manager who stated that, *"Most of the jobs available are too low for students. Students cannot work as machinists."* In these jobs, one is expected to carry out the same operation throughout the day and every day, for example, sewing on buttons. As one production manager pointed out, *"We employ people with dress making qualifications for machinists. A machinist job does not require someone with a college diploma."*

The general sentiments expressed by both the lecturers and production managers were that the college graduates were overqualified for machinist jobs. Although the clothing

Relevance of the clothing curriculum to industry

graduates acquired basic skills, these skills did not make them employable in the clothing industry. They were over qualified for machinist jobs (Vermeulen, 1997, 1998). The curriculum does not adequately address or focus on the result (Gouws, 2007). For relevance, clothing graduates should be absorbed in the clothing industry.

The general view by production managers and lecturers was that polytechnic graduates were better off in management, designing, pattern making, marketing and merchandising. However, these jobs are few and usually go to people trained within the company. With reference to managerial jobs, the views expressed by production managers were that polytechnic graduates lacked specialisation and experience in management as reflected in the following statements, *“For management, management qualification is required. Experience is also considered---To work in management, students need practical training at college and in industry itself on managerial duties and responsibilities---They need to learn to handle people.”* These sentiments indicate that education plays a crucial role in preparing a workforce with the right qualification (Frantz, 1997).

The production managers recommended that students should specialise in management at National Diploma level since they will gain the basic skills on how the production processes in the clothing industry are carried out at National Certificate level. This view was also supported by lecturers who said, *“At National Diploma level students should specialise in management, marketing and merchandising, design and pattern making. These areas are quite challenging and well paying in industry.”* If these observations were implemented, this would facilitate absorption of clothing graduates into challenging well paying jobs.

Most of the students did not find working in the clothing industry attractive. They cited poor working conditions and remuneration as factors, which made industry unattractive. One participant pointed out, *“When I have completed training I would like to work as a teacher. Teachers are better paid and rest during holidays. At industry people work long hours, for little pay.”* If furnished with the relevant skills and competences, students would be employed in management upon completion.

The findings indicate that most jobs in the clothing industry are routine machinist jobs not requiring college graduates.

STAKEHOLDER INVOLVEMENT IN CURRICULUM DESIGN

Findings from the production managers revealed that, out of the four companies in the study, only one had been involved in the designing of the clothing curriculum as one production manager indicated, *“We have not been involved in the designing of the programmes. This is the first time we have been asked to say anything about the programme.”* Another participant indicated that, *“It is important for us to be involved simply because we know what we want students to learn so that they can fit well in industry.”* The general sentiments expressed by the participants indicate that it is important for interested groups to be involved in curriculum design as they know the skills and competences required by students for them to fit in the relevant industry (Rose, 2003; Zengeya, 2009; Tan & Venables, 2010; Ngwenya, 2010; Bull, 2011).

Lecturers also supported the involvement of stakeholders in curriculum design. This is reflected in the following statement from one participant: *“Industrialists are better placed to know the skills and competences required at the*

workplace. They are the ones on the ground so they need to be involved in the designing of the curriculum. This would produce relevant programmes.”

Involvement of stakeholders in curriculum design is important to make curriculum compatible with industry, bringing about relevance. As Matseke (1997) and Ngwenya (2010) point out, curriculum reflects the content of the workplace the students are being prepared for. This shows that, it is logical for training to respond to the needs of commerce and industry (Dale, 1989). Since students are prepared to fit in industry, the results of this study indicate that there is need to involve the clothing industry when developing the curriculum. This would ensure that skills learnt at college are compatible with industry (Mandebvu, 1996). Advisory committees or good contacts in industry (Roger, 1985) could involve stakeholders. In the model for curriculum development suggested in this research, the clothing industry is part of the total situation under situational analysis.

RECOMMENDATIONS

The study recommends that:

- For effective implementation of the curriculum, relevant facilities should be provided at the Polytechnics. There is need for the Ministry of Higher and Tertiary Education to provide adequate funding to Polytechnics.
- Industry as a stakeholder should be involved in curriculum development so that appropriate programmes are designed for all levels in the Polytechnic.
- At National Diploma level, Clothing students should specialise in

management, merchandising and marketing, pattern making and design to be employable in the clothing industry.

Further studies should be conducted to establish whether specialisation in management, merchandising and marketing, design and pattern making at Diploma level would make the clothing curriculum relevant to industry.

CONCLUSION

Findings from this study, suggest that it may be concluded that the National Certificate in Industrial Clothing Design and Construction furnishes students with basic skills and competences for the clothing construction. Although they acquired basic skills, it was observed that the competences were not relevant for placement in the clothing industry. This is so because from the findings, most of the polytechnic clothing graduates did not join the clothing industry. The study has shown that most jobs in the clothing industry are not challenging for college graduates. Since the polytechnic graduate is expected to be absorbed in the clothing industry, stakeholder involvement is critical to ensure that relevant curriculum is designed.

REFERENCES

- Barlow, M.L. (Ed) (1974). *The Philosophy of Quality Vocational Education Programmes*. Washington DC: American Vocational Association.
- Borg, W.R., Gall, J.P. & Gall, M.D. (1993). *Applying Educational Research*. London: Longman.
- Boyd, W.L. (1979). The Politics of Curriculum Change and Stability. *Educational Research*. 8(2), 12-18. <http://www.newfoundations.com/fdnsCurriculum.html>(17-09-2017).

Relevance of the clothing curriculum to industry

- Bull, A. (2011). *From Community Engagement in Education to Public Engagement with Education*. Available at: <http://www.nzer.org.nz/research/all-publications> (19/03/2013).
- Burkill, B. & Eaton, R. (2011). *Developing Teaching and Learning*. Cambridge: Cambridge University Press.
- Burt, S.M. (1987). *Industry and Technical Vocational Education*. London: McGraw Hill.
- Calloids, F. & Hallock, J. (1980). *Education, Work and Employment*. Paris: Pergamon.
- Carl, A.E. (1995). *Teacher Empowerment Through Curriculum Development*. Kenwyn: Junta and Company Ltd.
- Central Africa Correspondence College Study Guide (2002). *Theory of Education Curriculum Studies*. Harare: XACC Pvt Ltd.
- Chisaka, B.C. & Vakalisa, N.C.G. (2003). The Uses of Ability Grouping as an Instructional Strategy: A Qualitative Inquiry in Secondary Schools. *The Zimbabwe Bulletin of Teacher Education*. 12 (1), 16-39.
- Chowdry, A.J. (1995). *Introduction to Clothing Production Management*. (2nd Edition), Oxford: Blackwell Science.
- Cohen, L, Manion, L. & Morrison, K. (2011). *Research Methods in Education*. (7th ed). New York: Routledge.
- Cohen, L. & Manion, L. (1994) *Research Methods in Education*. London: Routledge.
- Cresswell, J. W. (2010). *Qualitative Enquiry and Research Design: Choosing Among Approaches*. London: SAGE.
- Dale, R. (Ed) (1989). *Education, Training and Employment: Towards a New Vocationism*. Oxford: Pergamon Press.
- DeVos, A.S., Strydom, H., Fouche, C. B. & Deport, C.S.L (2012). *Research at Grassroots for the Social Sciences and Human Services Professionals* (4th Edition). Pretoria: Van Schaik.
- Doll, R.C. (1992) *Curriculum Improvement: Decision Making Process*. Boston: Allyn Bacon.
- Fletcher, E.C, Djajalaksana, Y. & Eison, J. (2012). Instructional Strategy Use of Faculty in Career and Technical Education. *Journal of Career and Technical Education*, 27(2), 69-83.
- Frantz, N.R. (1997). The Identification of National Trends and Issues for Workplace Preparation and their Implications for Vocational Teacher Education. *Journal of Vocational Education*. 14(1). <http://scholar.lib.vt.edu/ejournals/JVTE/v14nl/JVTE-1.html>. 14/09/2017.
- Fraser, W.J. Loubser, C.P. & Van Rooy (1993). *Didactics For Undergraduate Students*. Durban: Buttersworth.
- Gouws, F.E. (2007). Teaching and learning through multiple intelligencies in the outcomes-based education classroom. *Africa Education Review*. 4(2), 60-74.
- Gudyanga, A. (2014). Vocationalisation of Education. In R.Zvobgo (Ed). *Contemporary Issues in Education*. Harare: College Press.
- Gunther, M.A. Estes, T.H. & Swab, T. (1999). *Instruction: A Model Approach*. Boston: Allyn Bacon.
- Gwarinda, T. (1995). *The Practice of Teaching*. Bulawayo College Press Publishers (Pvt) Ltd.
- Hancock, D. R. & Algozzine, B. (2006). *Doing Case Study Research: A practical Guide for Beginning Researchers*. New York: Teachers College Press.
- Higher Education Examinations Council (1993a) *Regulations and Syllabus for National Certificate in Clothing Technology*. Harare. Ministry of Higher Education.

- Higher Education Examinations Council (1993b) *Regulations and Syllabus for National Certificate in Industrial Clothing Construction*. Harare. Ministry of Higher Education.
- Higher Education Examinations Council (2005) *Regulations and Syllabus for National Certificate in Industrial Clothing Design and Construction*. Harare. Ministry of Higher Education.
- Johnson, B. & Christensen, L. (2012). *Educational Research: Quantitative Qualitative and Mixed Approaches* (4^{ed}). Thousand Oaks CA: Sage.
- Killen, R. (1997) Outcomes Based Education: Rethinking Teaching. *Ekonomie*: 10 (1 and 2), 26 – 32.
- Leedy, P.D. & Ormrod, J.E. (2005) *Practical Research. Planning and Design*. New Jersey: Pearson Education Inc.
- Lincoln, Y.S. & Guba, E. (1985). *Naturalistic Inquiry*. Beverly Hill CA: SAGE.
- Mandebvu, O.S. (1996). Relevance of School Education to Employment: Expectations of Employers in Harare. *Zimbabwe Journal of Educational Research*. 8(1), 12-26.
- Marshall, C. & Rossman, G.B. (2011). *Designing Qualitative Research* (5th Ed.). Los Angeles: SAGE Publications.
- Matseke, C. M. (1997). Evaluation of Technical High Schools in Soweto, Johannesburg. Unpublished Master of Education Dissertation, University of Zimbabwe.
- McMillan, J. H. & Schumacher, S. (1989). *Research Education Conceptual Introduction*. (2nd Edition). New York: Harper Collins Publishers.
- McMillan, J.H. & Schumacher, S. (2010). *Research in Education*. New York: Harper.
- Module 13, (2000). *Curriculum Theory, Design and Assessment. General Education Modules*. The Commonwealth of Learning, October.
- Mutch, C. (2005). *Doing Educational Research: A Practitioners' Guide to Getting Started*. Wellington, New Zealand: NZCER.
- Neuman, W.L. (2000) *Social Research Methods. Qualitative Approaches*. London: Allyn Bacon.
- Ngwenya, V.C. (2010). *Managing Parental Involvement with Education in Zimbabwe*. Unpublished PhD Thesis. Pretoria : University of South Africa.
- Nkomo, G.M. (1995). *Curriculum Implementation, Change and Innovation*. Module AED3AD3003. Harare: Centre for Distance Education.
- Ofei, A.M.A. (2011). *Curriculum Goals* (available online at <http://www.slideshare.net/adelaideofei/urriculum-objective>)
- Peresu, M. & Nhundu, T. (1999). *Foundations of Education for Africa*. Harare: College Press.
- Punch, K. F. (2009). *Introduction to Research Methods in Education*. London: Sage.
- Puyate, S. T. (2004). *Manpower production for National development*. Paper presented at the Nigerian Association of Teachers of Technology Annual Conference. Ibadan Oyo State, Nigeria.
- Puyate, S.T., (2008). *Facilities and the Implementation of the National Policies of Education*. Paper presented at the Annual Conference of the Nigerian Association of Teachers of Technology. Ununze, Anamba State, Nigeria.
- Rose, P. (2003). Community participation in school policy and practice in Malawi: Balancing local knowledge, national policies and international agency priorities. *Journal of*

Relevance of the clothing curriculum to industry

- comparative international education*, 33(1), 47-64.
- Shah, T. (2010). *Pragmatism as a school of philosophy*. Retrieved from <http://pakphilosophy.blogspot.com/2010/06/pragmatism-as-school-philosophy-by-htm?m=1> (16/08/2017). (20/08/2017).
- Simons, J. (2014). The nature of knowledge in higher vocational curriculum. In Lea, J. (Ed) *Supporting higher education in college settings*, London: SEDA
- Smith, B.S. (1995). *Fundamentals of Social Research Methods. An African Perspective* (2nd Edition). Kenwyn: Junta and Company Ltd.
- Tan, G. & Venables, V. (2010) Education Innovations in Practice. *Journal of Information Technology*. Volume 9. <http://informingcience.org/jte/documents/JITEV90P103-112Tan805.pdf> (17-09-2017).
- Teaching Home Economics (2013). *Principles and Methods of Teaching Home Economics*. TKI/NZ Curriculum Marautanga
- Project/Health and Physical Education/Home Economics Education. New Zealand. Accessed from <http://www.tki.org.nz/r/curriculum/draft.curriculum/healthphyscale.phd>
- Vermaulen, L.M. (1998). *Didactics and Curriculum 2005: A guide for Students and Teachers*. Vanderbylpark: University for Christian Higher Education.
- Vermeulen, L.M. (1997). *Curriculum 2005 Outcomes Based Education and the Curriculum*. Vanderbylpark: University for Christian Higher Education.
- Vollmers, S.M., Ratliff, J.M. & Hoge, B. A Framework for Developing Entrepreneurship Curriculum Through Stakeholder Involvement. <http://sbaer.uca.edu/research/acme/2001/46.pdf> (18-08-2017).
- Zengeya, M.A. (2009). An Analysis of Technical and Vocational Education Policy Growth and Development in the United States of America, the United Kingdom and Africa. *Zimbabwe Journal of Educational Research*, 21(3), 276-301.

A comparative study of carbon footprint and opportunity costs of a distance education and a conventional university

S. Tichapondwa Modesto (D Litt et Phil)
Botswana College of Distance and Open Learning
stmodesto2006@gmail.com

Abstract

The six-week study investigated two costs of education that are often overlooked, namely, the amount of greenhouse gases produced to support the learner's activities (carbon footprint); and what students forgo in order to pursue their studies (opportunity cost). The objective was to measure these two variables of a student in an ODL setting vis-à-vis that of a similar one doing a similar degree programme (Entrepreneurship) in a conventional university. The two basic questions were:

- a. How does the carbon footprint of an ODL programme compare to that of a similar face-to-face programme?
- b. How do the opportunity costs of an ODL programme compare to those of a similar face-to-face programme?

It was presumed that, *inter alia*, the investigation would contribute to the growing body of knowledge on the environmental impact and opportunity costs of conventional higher education, and of the ODL mode in the context of a developing nation. The participants comprised two purposively sampled classes of entrepreneurship students, one registered with a distance learning university, and the other registered with a conventional one. Both groups were in their final year at separate institutions in Gaborone. A questionnaire was used for data elicitation. Comparisons (ANOVA) were employed to determine whether there are statistically significant differences between the overall carbon footprints and opportunity costs of the two groups. Some of the findings were that the carbon footprint of a face-to-face programme is higher than that of the distance education one. Secondly, the distance learner missed the opportunity for government sponsorship (opportunity cost). Conclusions arising from the findings were that statistically, there was a significant difference in the manifestation of variables measured between the two groups (opportunity cost and carbon footprint). One of the recommendations made was that there was need for sustained education for providers of university education on environmental impact and opportunity cost. Regarding further research, it was recommended that future scholars should consider carrying out research with specific focus on how the quality of distance learning contrasts with that of face-to-face learning, given that opportunity cost and carbon footprint will have been objectively established.

Keywords: Carbon footprint, opportunity cost, open and distance learning, conventional setting

INTRODUCTION

Education as both an indicator of and catalyst for sustainable development is not a

new idea. While the benefits of education have been studied at length, there is little research evidence about the potential costs of

education in certain aspects. Two costs of education often overlooked are:

- i. *Carbon footprint*, that is, the environmental impact, which can be measured by the total amount of greenhouse gases produced to directly and indirectly to support the learner's activities (Henebery, 2017). Carbon footprint refers to the sum of all emissions of CO₂ (carbon dioxide), which are induced by an individual's activities in a given period, and this is calculated over a period of time (<http://timeforchange.org/what-is-a-carbon-footprint-definition>). Carbon emissions are accounted for through the amount of paper used, fuel to and from school, electricity consumed, course textbooks, etc. Carbon footprint is measured in kilograms and tons.
- ii. *Opportunity cost*, that is, what students forgo in order to pursue their studies. Opportunity cost refers to a benefit that a person could have received, but gave up, to take another course of action. Stated differently, an opportunity cost represents an alternative given up when a decision is made (<https://www.investopedia.com/terms/o/opportunitycost.asp>).

While these potential costs of education do not negate its intrinsic or instrumental value, it is important to be cognisant of both the opportunity cost and environmental impact associated with higher education so that we can better understand how to reduce or mitigate them.

It has been suggested that one way to reduce both the environmental impact and

opportunity cost of higher education is the use of Open and Distance Learning (ODL) methodologies. It is presumed that the ODL mode of delivery ostensibly helps reduce the carbon footprint of learners and institutions, as this mode may utilise fewer material resources, and does not normally require extensive learner travel (Caird *et al.*, 2013.). Furthermore, the mode can reduce the opportunity cost associated with traditional face-to-face study by allowing the student flexibility in terms of study schedule, so he/she can continue to work and generate an income.

While these suppositions may seem self-evident, there are limited real world examples or case studies that have examined how the carbon footprints and opportunity costs of ODL learners compare to those of traditional face-to-face students, specifically in the context of developing countries like Botswana, South Africa, and Zimbabwe, to name a few SADC countries. Since an institution's geography, infrastructure, policies, and national development context have a large impact on carbon footprint, referencing a generic comparison based on anecdotes or averages from developed countries does not provide sufficient insight into a developing country's context (Cook & Washington, 2015). Similarly, the economic landscape and employment opportunities of a country affect opportunity cost greatly; thus, results from studies in developed countries may not be applicable to the developing world. Clearly, the developing country context requires a distinct, nuanced assessment of the environmental impacts of different delivery modes.

The current study, thus, sought to compare an ODL course with a traditional face-to-face course in Botswana, in order to determine whether there is any significant difference in their learners' course-related carbon footprints or the opportunity costs

A Comparative Study of Carbon Footprint and Opportunity Costs

incurred. The courses were similar in terms of duration and content, and both counted as a module, which makes up part of a recognised Bachelor's degree in Business and Entrepreneurship. An appropriate sample size and strategy was devised, and students from the two institutions were surveyed about their learning behaviours, consumption patterns, and demographics. Institutional contacts were also interviewed and reports or public documents reviewed in order to gather data on the individual institution. For the scope of this study, carbon emissions variables were calculated for electricity consumption, paper use and travel, and then added to come up with an overall 'carbon footprint' for learners' course-related activities.

Opportunity cost was estimated for the entire programme length and included costs of tuition, materials, travel and forgone income. The returns consisted of the predicted future lifecycle income. Only private monetary returns were calculated, as public and social returns are beyond the scope of this study. The study sought to ascertain whether there is a statistically significant difference between the ODL and face-to-face students' carbon footprints produced and/or opportunity costs incurred because of their participation in higher education.

THE SETTING

Botswana's fast-growing economy, boasts a GDP per capita (PPP adjusted) of \$18,825 per year as of 2015 - one of the highest in the continent. It also has the highest Human Development Index of continental Sub-Saharan Africa. However, Botswana faces many challenges in regards to environmental degradation and climate change:

The welfare of the people, the performance of the economy, and the state of the environment in Botswana are all very closely linked to the climate. According to the Botswana government, the country is "highly vulnerable to climate change" due to its fragile ecosystems and (semi-) aridity. Climate change is likely to add to existing stresses in Botswana causing significant changes in prevalent vegetation and rangeland cover, affecting species types, composition and distribution, as well as those depending on them...The sectors emitting most greenhouse gas emissions in Botswana (1994) are agriculture/livestock, energy, industry, waste as well as land use and forestry (in declining order of importance)... Related to the second largest emitter, the energy sector is facing the challenge to increase supply while at the same time mitigating greenhouse gas emissions" (Botswana Environmental and Climate Change Analysis, 29 May, 2008).

Botswana also faces challenges in its employment sector. The unemployment rate of approximately 18% has remained virtually unchanged, resulting in pronounced income inequality in the country (World Bank, Botswana, 2016). Education has been promoted as a way to create the skilled labour force the country needs to bolster and diversify its economy. At approximately 9% of GDP, Botswana's expenditure on education is amongst the highest in the world. Botswana has invested substantial resources in the education sector since it became a sovereign nation in 1966. At independence, there was no national university or tertiary institution. Botswana began a major reform of its higher education system in the early 1990s and in 1993; The Presidential Commission on Education was appointed and created a plan for sweeping, system-wide reforms. In 1994, this plan was adopted as the Revised National Policy on Education (RNPE). The highest level of tertiary

enrolment was seen in 2008-09, when 47,889 students were enrolled in either public or private tertiary education (54.6% in public institutions). Since 2009, public institutions have seen a minimal decrease in enrolment, while private institution enrolment has declined by close to 40%. In an attempt to move towards a knowledge-based economy, the Tertiary Education Council (TEC), now the Human Resource Development Council (HRDC) has been aiming to increase access to tertiary education to 17% by 2016, with the goal of increasing access to 20% by 2020. The Botswana International University of Science (BIUST) located at Palapye, held a roof-wetting rite on April 16, 2015 for the college's building. Along with the expansion of current institutions, this will be necessary to accommodate the expected influx of learners.

The two institutions selected for this study are the Botswana College of Distance and Open Learning (BOCODOL), and the Botswana Accountancy College (BAC). BOCODOL, now the Botswana Open University, was created by an Act of Parliament in July 1999, and is a semi-autonomous distance teaching university. In addition to its Headquarters in the capital Gaborone, the college has five Regional offices in Gaborone, Francistown, Palapye, Maun and Kang that operate through study centres countrywide. The Botswana Accountancy College (BAC) is a traditional face-to-face institution, which provides business education in Accountancy, Computing, Business Management and Insurance. The BAC owes its origins to a joint venture partnership between the Government of Botswana and Debswana, who are its guarantors. The Botswana Accountancy College's main campus is located in Gaborone with a second location in Francistown.

STATEMENT OF THE PROBLEM

In both conventional and open universities, there is the problem of finances and resources to sustain the student. However, the problem is that no studies have been conducted to establish for certain how much it costs to sustain an individual student in terms of expenditure on fuel, electricity, public transport, and quantities of paper used (carbon footprint). Further, there is also a gap in the knowledge about what opportunities the university student forgoes by studying either by distance mode or by studying full-time at university. Researched knowledge about these two phenomena has the potential to influence policy makers on future directions of tertiary education, more especially when the conventional and distance learning universities are juxtaposed for comparison.

RESEARCH QUESTIONS

The questions below guided the investigation:

- a. How does the carbon footprint of an ODL programme compare to that of a similar face-to-face programme in the context?
- b. Which factors contribute most to the carbon footprint produced by ODL learners and face-to-face learners?
- c. How do the opportunity costs of an ODL programme compare to those of a similar face-to-face programme in the context of Botswana?
- d. Which factors contribute most to the opportunity costs incurred by ODL learners and face-to-face learners?

THEORETICAL VIEWS

Today, governments, corporations and communities are striving to reduce their

A Comparative Study of Carbon Footprint and Opportunity Costs

carbon footprint and combat the impact of climate change – and schools are no exception.

With heat and power being emitted from classrooms, students and staff travelling to and from school, waste management, and the supply chain activities of companies providing goods and services, schools are contributors to this issue (Henebery, 2017).

Premised on the above, the present study was guided by The Polluter Pays Principle and Physical Harm propounded by Hayner and Weisbach (2016).

The Polluter Pays Principle (PPP) postulates that making polluters pay for the harm that they cause forces polluters to take all the costs of their actions into account. In other words, they must be aware of the consequences of their actions and appreciate the social costs in order for them to act more appropriately. Scholars, Coleman, Hershovitz, and Mendlow (2015, p. 6), put it succinctly thus, "...an individual has a duty to repair the wrongful losses that his conduct causes." That means, individuals are held responsible only if they know or should have known that their actions were unduly risky or would lead to harm.

The second theory is referred to as the Limited Resource Principle (LRP). According to Pickering and Barry (2012, p. 670), the theory is decomposed into three parts, namely: (1) all humans have a right, based in justice, to an equal share of the atmosphere's absorption capacity. Secondly, overuse of the atmosphere by anyone, such as by forcible taking, causes harm to those who are thereby deprived of their own fair usage; and thirdly, those who so overuse the atmosphere must compensate others for the overuse. Thus, guided by the theories, ODL students and full-time conventional learners,

after developing awareness, become mindful of ways to approach carbon footprint.

According to Cook and Washington (2015), some of the ways that a carbon footprint can be reduced are using *sustainable transport* whenever possible, e.g. walking or riding a bicycle. In addition, using public transportation can drastically reduce carbon dioxide emissions. *Improving home energy efficiency* by insulating and sealing it properly. Using recycled paper for printing and photocopying. *Recycling and composting* helps to reduce carbon emissions associated with the "provision of goods", or the extraction of resources, transport, manufacturing, and disposal of goods. *Reducing water usage* in the home and hostels. This lowers the amount of energy required to pump, treat, and heat water. Conservation along with using water saving showerheads, toilets, dishwashers, and washing machines can help here.

One opportunity cost theory upon which this study was grounded is derived from educatorblog.wordpress.com/2008/06/20/opportunity-cost/. Briefly summarised, the theory has these characteristics:

Firstly, it defines opportunity cost as a course of action that represents the forgone benefit from an alternative action. In order for a benefit to be forgone, the chosen and alternative actions have to be mutually exclusive. This means one cannot do both actions at the same time. Secondly, the concept of opportunity cost reflects the scarcity of our resources – especially time and money. When we integrate opportunity cost into our decision-making, we ensure the most efficient use of our scarce resources. Thirdly, in order to figure out the true value of any decision, the decision-maker does a cost-benefit analysis (often subconsciously).

S. Tichapondwa Modesto (D Litt et Phil

We must account for the “up front benefits” of an action and factor in forgone benefit.

The Theory highlights the concrete and abstract characteristics of opportunity cost, applicable to distance learning versus full-time study (Henebery, 2017), and these include:

- Time
- Money
- Physical safety
- Achievement
- Social services (health care, sex education, college and career consulting, etc.)
- Learning
- Fair distribution of social and economic opportunity
- Rights promotion
- Community-building and local support
- Emotional and mental stability
- Happiness and fulfillment

It is noteworthy that none of the items on this list is mutually exclusive. Suffice to say that the Theory serves as a guide in our discussion of opportunity cost for the ODL and conventional university learner.

Despite the growing popularity of sustainability principles in higher education institutions, the environmental impacts of different modes of delivery for higher education are not fully understood. Furthermore, there has been little research into the environmental impacts of existing

HE course models, with the exception of the Factor 10 and SusTEACH projects that were conducted by the Open University of the United Kingdom (OUUK) research teams in the past 10 years (Caird *et al.*, 2013.)

The SusTEACH project compared four ICT-enhanced courses with four online courses and fourteen mainly face-to-face taught courses. The findings showed that HE online and blended ICT-enhanced distance teaching models had significantly lower impacts than face-to-face teaching models (Caird *et al.*, 2013). While projects like SusTeach University have assessed and compared the carbon footprint of different modes of delivery, the focus has been on institutions in the UK, and the assessment tools used in these projects have not been applied widely in the developing world, or these results have not been widely published. Inferring similar findings for developing countries is problematic for a number of reasons.

- i. Firstly, the emissions factors used in calculating carbon footprint vary from country to country.
- ii. Furthermore, higher education institutions in developing countries may not have sustainability practices or infrastructure (like paperless courses, or energy efficient buildings) comparable to institutions in the UK.
- iii. Conversely, the carbon footprint in a developing country may be affected by lower rates of consumption.
- iv. Due to financial constraints, students in developing countries may be less likely to use vehicles to get to school, and may purchase fewer physical materials resulting in financially motivated, reduced consumption.

A Comparative Study of Carbon Footprint and Opportunity Costs

Clearly, therefore, the development context has the potential to greatly influence the carbon footprint of learners, and thus averages generated for ODL and face-to-face courses in the UK cannot be applied universally.

ODL is highly touted for its ability to increase access to higher education. Perraton and Hulsmann (2003, p.9) as summarised by Letseka (2012) contend that ODL can reduce opportunity costs in forgone earnings “and facilitate a higher integration of working and studying” (p. 223). In the traditional face-to-face mode of delivery, students may have to sacrifice income-generating activities in order to study. The costing of ODL normally takes into account both fixed and variable costs. However, it has been noted, “Many studies of educational economics leave ... opportunity costs out of account” (Perraton, 2004 p. 15), and do not consider the income forgone by students in order to pursue their studies. In a comprehensive cost analysis, the private cost of higher education should

include “any fees or direct cost that the individual pays *plus* the opportunity cost in terms of forgone income”; yet there is little information available on the cost of forgone income, and even less comparing income forgone by students in ODL and face-to-face delivery modes.

METHODOLOGY

Population and Study Sample

The population comprised students registered in a Bachelors Degree in Business and Entrepreneurship from BOCODOL, and from BAC, both classes in their final year. Additionally, the Chief Executive Officer of each institution, lecturers and academic registrars were included in the survey.

Only one class from either institution was purposively sampled, and the sample is summarised in Table 1.

Table 1 Research participants

Institution	CEO	Lecturers	Registrars	HoDs	Students
BOCODOL	1	2	1	1	26
BAC	1	2	1	1	34
Total	2	4	2	2	60

Two methods of collecting data were used, namely, oral interviews and written questionnaire. The Consultant and his research assistants recorded data from interviews and written questionnaire on Excel. Each respondent was given a number for tracking and the Consultant prepared a coding sheet for reference during the data analysis.

Ethics and Human Subjects Issues

Meticulous consideration was given by the Consultant to ethical issues at the levels of interaction with research assistants, institutional employees (CEOs, HoDs, registrars, and lecturers) and students. The following were taken into account: voluntary consent; liberty to withdraw consent at any point in the experiment; disclosure by the researcher of all information necessary for making an informed decision to participate in

S. Tichapondwa Modesto (D Litt et Phil

the research project including, what the study entailed, and its foreseeable risks and potential benefits, to the participant; use of numbers only in order to ensure confidentiality; and pledging to safeguard information.

RESULTS

Demographics

Table 2. Participants by Gender and Institution

BOCODOL Participants		BAC Participants		
Male 8 (31%)	Female 18 (69%)	Male 10 (30%)	Female 21 (64%)	No Response 2 (6%)

Travel Emissions

While BOCODOL students were more likely than their BAC counterparts to use a car as their main mode of transportation, they had significantly less programme related travel each semester. Table 2 shows the differences in the modes of

The BOCODOL students ranged from age 26 to 51, with an average age of 35 years compared to the BAC students who ranged from 19 to 26, with an average age of 24 years. As evident in Table 2, there were more females than males in both the BOCODOL and BAC groups, with similar proportions across the two groups.

transport for full-time and part-time students. The greater overall distance travelled by the BAC students contributes to their higher CO₂ emissions for travel each semester, as compared to the BOCODOL students. Figure 1 reflects the mean kilometres and emissions. This is based on the travel mode used by students in the different institutions.

A Comparative Study of Carbon Footprint and Opportunity Costs

Table 2. Travel Mode by Institution

		BOCODOL	BAC	Total
<i>Travel mode</i>	car	22	7	29
	walking	0	2	2
	bus	0	3	3
	other public transport	4	20	24
Total	26	32	58	

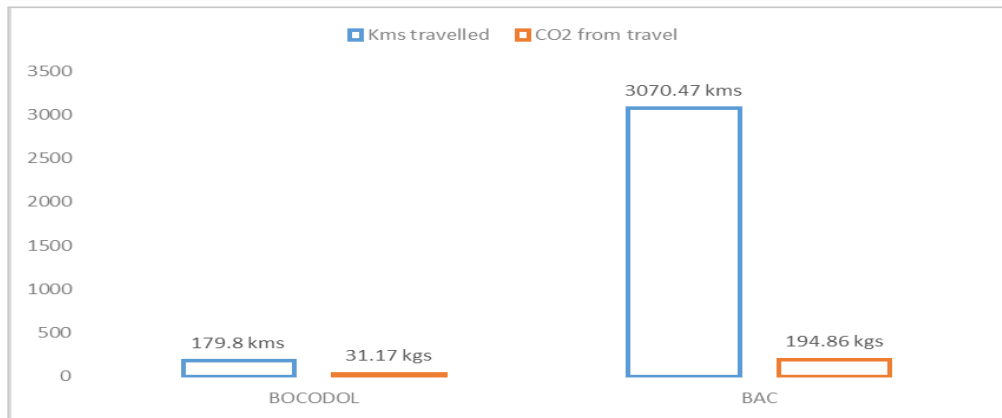


Figure 1 Kilometres travelled and co2 emissions per semester

Energy Consumption

On Campus

The on-campus electricity emissions were calculated as the sum of the classroom emissions and the emissions from on-campus ICT use. Overall, the BAC students have

significantly higher emissions from on-campus energy use, as compared to the BOCODOL students. This result is expected, as the BOCODOL students are only required to be on campus for contact classes four times during the semester.

Table 3. On Campus CO2 Emissions

		N	Mean	Std. Deviation
TOTAL Campus CO2	BOCODOL	26	49.0928	3.11698
	BAC	33	137.2370	5.57144

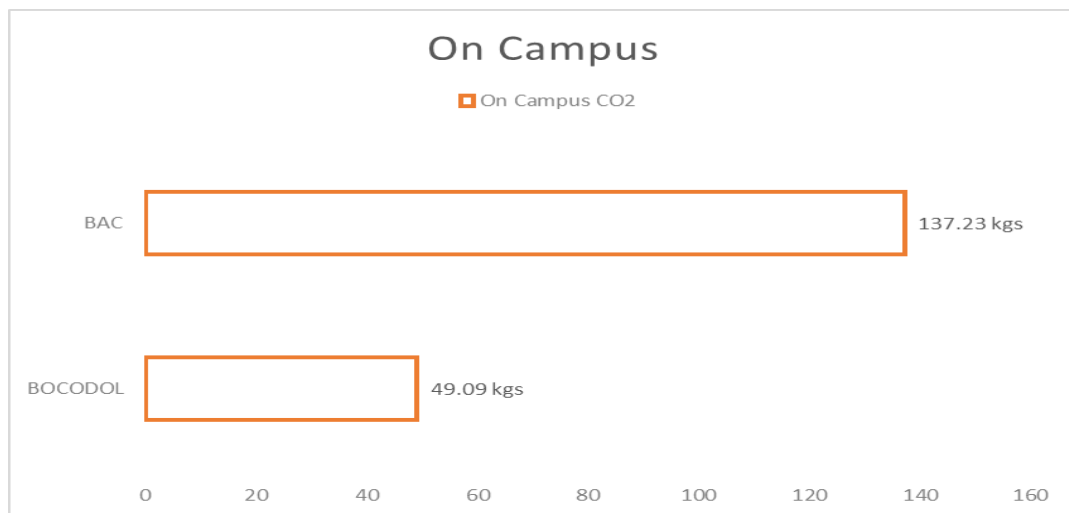


Figure 2 On Campus CO2 emissions

At home/residence emissions

The at-home energy usage consists of lighting; heat and ICT consumption of electricity for programme related work and study. While BOCODOL learners have higher emissions for at home ICT usage than the BAC students (Table 5), they have lower usage of additional heat and lighting at home

than their counterparts at BAC (Table 4). Overall, the BAC group has higher average home emissions than that BOCODOL group (Table 6 and Figure 3).

A Comparative Study of Carbon Footprint and Opportunity Costs

Table 4. Additional heat and lighting

		N	Mean	Std. Deviation
<i>Additional Home Lighting and Heat CO2</i>	BOCODOL	26	9.4985	18.28799
	BAC	33	24.6960	23.64462

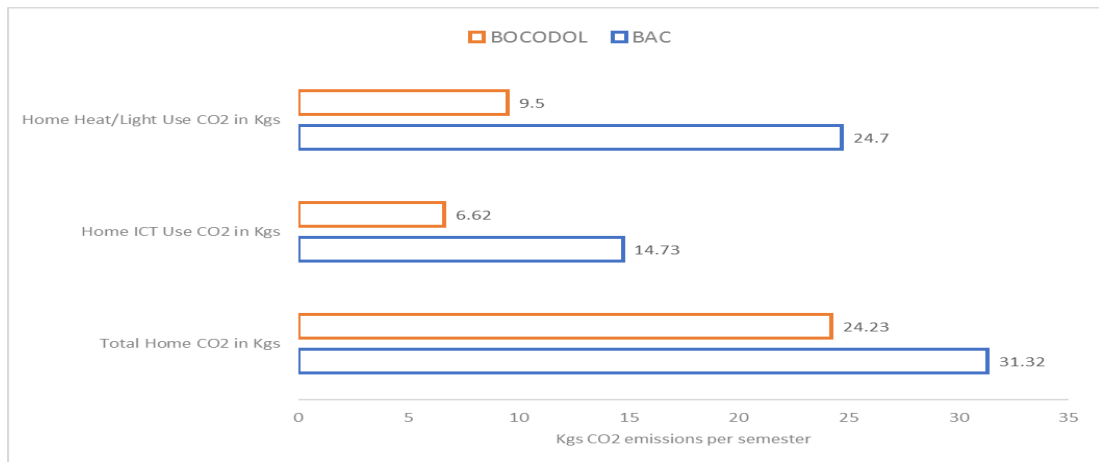
Table 5. Home ICT usage

		N	Mean	Std. Deviation
<i>Home ICT CO2</i>	BOCODOL	26	14.7328	34.10466
	BAC	33	6.6220	10.90689

Table 6. Total home emissions

		N	Mean	Std. Deviation
<i>TOTAL Home CO2</i>	BOCODOL	26	24.2313	48.45349
	BAC	33	31.3180	24.84029

Figure 3. Home CO2 Emissions



Paper Use

Respondents were asked to estimate the amount of paper they used in three different categories: paper distributed by the institution; paper for their own personal use; and, miscellaneous programme-related paper such as exams, registration documents, etc.

The BAC students reported using significantly more paper than the BOCODOL students, resulting in much higher average emissions from paper, as reflected in Table 7

Table 7. Total Paper CO₂ Emissions

		N	Mean	Std. Deviation
TOTAL Paper CO₂	BOCODOL	26	5.6686	2.02326
	BAC	33	30.0547	28.90344

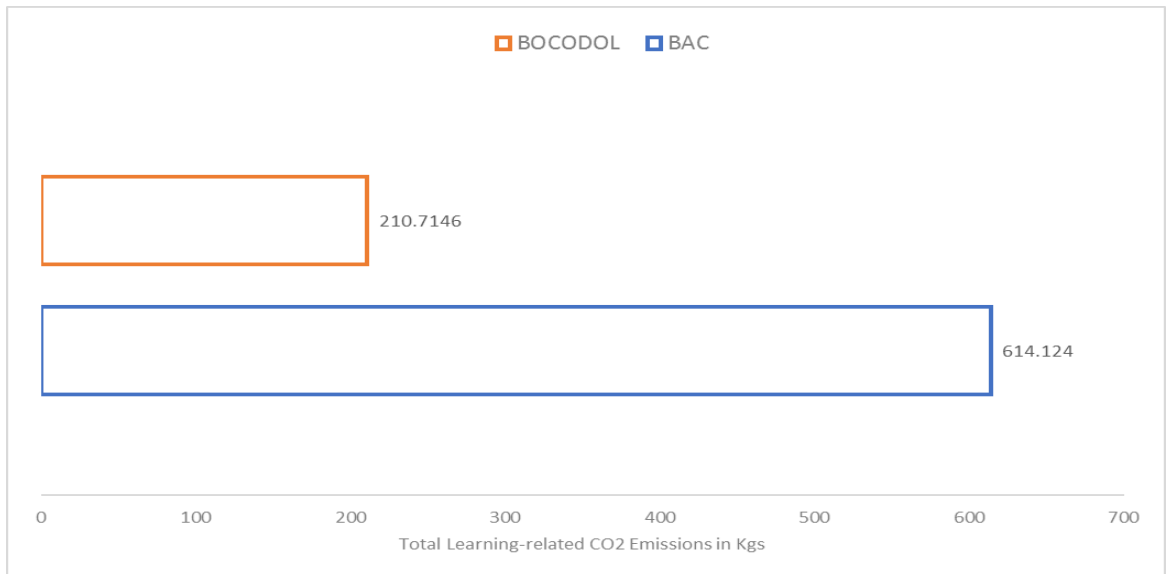
Learning Materials

While the BAC students each received four assigned hardcopy textbooks for the semester, the BAC students received their learning materials on a single CD. The average total emissions from the BAC textbooks was estimated at 60kgs per student while the emissions from the CD for the BOCODOL group was 0.5kgs per student.

To arrive at the overall learner carbon footprint, the sum of the travel, at-home and on-campus energy use, ICT purchased, paper and learning materials CO₂ emissions value was calculated. Overall, the average carbon footprint of the face-to-face mode BAC group was more than three times greater than that of the distance mode BOCODOL group.

Table 8. Total CO₂ Emissions (Carbon Footprint)

		N	Mean	Std. Deviation
TOTAL CARBON FOOTPRINT	BOCODOL	26	210.7146	110.68349
	BAC	33	614.1240	235.53545



A Comparative Study of Carbon Footprint and Opportunity Costs

Figure 4. Average Learner Carbon Footprint (Kgs)

Production Emissions from ICT Purchased

Respondents reported whether they had purchased any ICT specifically for their programme or not. The BAC students were more likely to have purchased a laptop specifically for the programme, as evident in Table 9 while BOCODOL students were more likely to have purchased a tablet for their programme (Table 10). Only laptops and tablets were reported as being purchased specifically for the programme.

Approximately 46% of BOCODOL students use existing ICTs for their programme (computer laboratories), while only 18% of the BAC students do. The total production CO₂ values used for ICT purchased was 200kg for laptops and 150kg for tablets. Due to the significantly higher proportion of BAC students who had purchased a laptop specifically for their programme as compared to the BOCODOL group, the average CO₂ emissions from ICT purchased was significantly higher for the BAC students (Figure 5).

Table 9. Percentage of Respondents that Purchased a Laptop by Institution

			BOCODOL		Total
			L	BAC	
<i>Purchased Laptop?</i>	NO	Count	16	8	24
		%	61.5%	24.2%	40.7%
	YES	Count	10	25	35
		%	38.5%	75.8%	59.3%

Table 10. Percentage of Respondents that Purchased a Tablet by Institution

			BOCODOL		Total
			OL	BAC	
<i>Purchased Tablet?</i>	NO	Count	22	31	53
		%	84.6%	93.9%	89.8%
	YES	Count	4	2	6
		%	15.4%	6.1%	10.2%

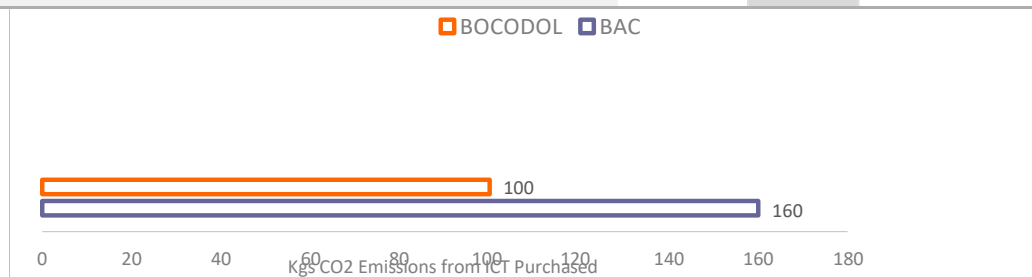


Figure 5. ICT Production Emissions for Devices Purchased for the Programme

S. Tichapondwa Modesto (D Litt et Phil)

To sum up, Table 11 lists the components of the overall carbon footprint calculation from the greatest difference in emissions between the two groups to the

least. BAC students, on average, have higher emissions in every component.

Table 11. Components of Total Carbon Footprint

Factor	BOCODOL Emissions (Kgs CO2)	BAC Emissions (Kgs CO2)	Difference
<i>Travel CO2</i>	31.17	194.85	163.68
<i>On campus energy use</i>	49.09	137.24	88.14
<i>ICT Purchased</i>	100.00	160.60	60.60
<i>Learning Materials</i>	0.5	60	59.5
<i>Paper</i>	5.67	30.05	24.38
<i>Home energy use</i>	24.23	31.31	7.08
TOTAL	210.71	614.12	403.41

Opportunity Cost

The findings about opportunity cost are presented based on individual research question: How do the opportunity costs of an ODL programme compare with those of a similar face-to-face programme?

Of the 26 ODL students who were interviewed, 20 (77%) are employed, as opposed to 6 (23%) who are not. This means the majority work and earn. Out of the 34 interviewees from BAC, 32 (94%) students are not employed, while only 2 (6%) are employed while studying full-time. Thus, ODL students maximise the opportunity to work and acquire a qualification at the same time. Table 12 below captures the situation.

Table 12 Percentage of respondents employed

		BOCODOL	BAC	Variance
Employed?	NO	Count	6	32
		%	23%	94%
	YES	Count	20	2
		%	77%	6%

A Comparative Study of Carbon Footprint and Opportunity Costs

However, verification interviews with ODL students and tutors, revealed that:

...they wanted more face-to-face time as it was not always easy to study alone most of the time.

Incidentally, the tutors are part-time as well, and their conceptualisation of principles of ODL mode seems somewhat deficient. It was clear that their (tutors) background is in conventional face-to-face teaching, or they have no teaching experience at all, hence they seem to find it difficult to adapt to the new mode, something that was ostensibly also reflected in the students. An interesting finding with a tutor was that:

...he was from the banking sector, and did not have any training on how to teach his area (Financial Accounting), though he possessed a lot of knowledge of the content.

Thus, many tutors seem to lack grounding in pedagogics.

While the ODL student was found to be able to earn and learn, he/she forgoes the opportunity for constant support by subject experts. In our interviews with tutors from both modes of delivery, there was a shared view about the time invested in studies by students from either divide.

ODL tutors expressed the view that their students did not give enough time to attend to their studies, as they had to also cope with demands of full-time employment.

On the other hand, lecturers from the conventional set-up (BAC) were explicit that:

...it was the business of their students to devote time to the only preoccupation of working towards a qualification.

This observation has implications for the issue of quality between the ODL and the

face-to-face student output, assuming that the more the time one invests in one's studies, the more the likelihood of quality outcome. However, this is a matter beyond the scope of the current study. To get back to the point, which is underscored, the ODL student forgoes the opportunity of devoting full time on studies, when compared to the face-to-face counterpart.

The ODL student pays P6 100 fees per semester, vis-à-vis P14 600 for the face-to-face student. However, the latter is fully subsidised by the Government, while the ODL student is self-sponsored. In this respect, the latter forgoes the opportunity to be sponsored by the state.

Interviews with ODL students revealed one issue that was not part of the scheduled questions, namely, the issue of socialisation. Students variously expressed the view that:

...they have problems when they want clarification of something because there will not be any of their peers or tutor in the vicinity.

Essentially, face-to-face students do not have a problem with that since:

...they study full-time, and have ready access to the library, the subject area specialists, as well as classmates.

The ODL students forgo this opportunity. ODL tutors observed that:

...their students were self-driven and purposeful because they paid fees for themselves and wanted to get the best out of what they did. They also revealed that in the attempt to balance their studies with their work, they had to create time to ensure equitably distributed attention.

S. Tichapondwa Modesto (D Litt et Phil)

On the contrary, lecturers at BAC indicated that:

...generally, the learners were not as motivated as they expected most probably because somebody paid their fees, hence in some cases motivation was not internal. Further, they were used to following a timetable prepared for them, and their independence was not as high as that of their ODL counterparts. They were not self-programmed.

Thus, face-to-face students forgo this opportunity of cultivating autonomy while pursuing their studies.

One of the findings, worth further investigation, was the employability of entrepreneurship graduates. The BAC students were somewhat concerned about how employable they would be after completing the degree. Botswana is a developing country where the conventional social expectation is that if one is going to look for a job as an accountant (accounting degree); teacher (teaching degree); pharmacist (pharmacy degree), and so forth. Entrepreneurship is a new qualification on the market, and according to students, the employment sector is not aware what sort of job someone with a qualification in entrepreneurship is capable of doing. In other words, their expressed concern was,

...What sort of job do I look for, other than going into self-employment?

In short, full-time students of BAC forgo employment opportunities by working on a degree qualification that is not properly understood in the market. The opposite was considered true for ODL research participants, the majority of whom were already employed, and the Entrepreneurship degree merely enhanced their promotion prospects.

Conclusions drawn from the results on opportunity cost

Deriving from the above, the following conclusions, serving as factors that contribute to opportunity cost incurred, were drawn:

- i. Face-to-face learners incur the opportunity cost to learn and earn.
- ii. ODL students incur the opportunity cost for government sponsorship.
- iii. ODL students incur the opportunity cost to have adequate time to dedicate to their studies.
- iv. Full-time students incur the opportunity cost to secure employment from a market that is used to conventional qualifications.
- v. While face-to-face learners constantly have subject experts and peers any time, ODL learners incur this opportunity cost as they are separated by transactional distance most of the time.
- vi. ODL students are taught by part-time tutors, unlike face-to-face students who are taught by lecturers solely dedicated to the programme. ODL students incur this opportunity cost.
- vii. Full-time students follow a commonly inflexible programme timetable. On the contrary, ODL students have the opportunity to self-manage, as there is greater scope for flexibility. In this respect, face-to-face learners incur the opportunity cost of self-management and autonomy.

A Comparative Study of Carbon Footprint and Opportunity Costs

Limitations

Notwithstanding the informative results presented above, the study had its limitations, which are taken into account in the subsequent section on further research. One of the ostensible limitations was that there was the potential for conflict of interest, as the consultant belongs to one of the institutions in the case studies. However, this was mitigated, firstly, by engaging research assistants who were non-inclined to the institutions. They collected data and entered them on Excel, after which the Consultant crosschecked for accuracy. Secondly, to avoid any bias in the interpretation of findings, the Commonwealth of Learning (COL), sponsor of the study, also assisted with the analysis, which the Consultant later verified.

The second limitation had to do with low numbers per institution, and confining the study to only two institutions. This was mitigated by the following factors:

- a. The study derives legitimacy from case study methodology where even one participant or institution can be focus of a study (cf. Yin, 1984). In this case, where there were 72 participants from two institutions, this argues favourably as justification for the study.
- b. Each institution has its uniqueness, one ODL and the other face-to-face, and the two are located in the same geographical environment (urban). This enhanced comparability and authenticity of results.

The third limitation was that one of the two variables, carbon footprint, is not a commonly understood phenomenon in educational circles. This had the potential of attracting little enthusiasm from participants.

In mitigation, the Consultant and the research assistants scheduled preliminary visits to the identified staff members of the institutions (CEOs, lecturers, academic registrars, and heads of departments), and addressed participating students explaining to them both concepts of carbon footprint and opportunity cost.

Discussion

Botswana is a developing country, and the Government of the country experiences budgetary constraints. The open and distance learning mode shares the same budget allocated for education with conventional institutions, and this is against a background where there is no open and distance learning policy in place as yet. The Policy would help towards rationalisation of funding to achieve the following:

1. To create opportunity to sponsor ODL learners, thus ensuring access to education for as many.
2. The ODL institution would have enough funding to give its part-time tutors adequate training so that they appreciate what ODL is in the fuller sense, than is currently the case, where there is minimal induction of tutors in ODL practices. With adequate training, tutors will be able to cascade principles of ODL to students, including minimisation of carbon footprint and maximisation of opportunity.

The link of carbon footprint and opportunity cost to equity in funding conventional and ODL systems, is that there are implications for better appreciation of the two issues. This is considered true against the background of the use of textbooks and requirements to purchase additional ones by face-to-face learners. It might be prudent for private

providers of tertiary programmes, like BAC, to train their lecturers and students on the use of ICT, and adopt blended learning using learning platforms, thus avoiding too many print media textbooks. This will have the potential to mitigate carbon footprint. The use of CDs, as established in the study, is a step in the right direction by the ODL institution.

For purposes of creating awareness in the country, a more systematic drive ought to be embarked on in terms of sensitising employers, and the communities at large, about entrepreneurship. Otherwise, graduates are likely to continue incurring employment opportunity costs in a competitive market where jobs are already jeopardised. The obverse of the argument is that with more graduates of entrepreneurship joining the labour market, it might be prudent for the government to set up funding to avail start-up capital for them to embark on their own enterprises.

FUTURE RESEARCH

Two limitations of the study influence suggestions for further research. These were outlined in one of the foregoing sections as the limited understanding of the concepts of carbon footprint and opportunity costs in developing educational environments. The second one pertains to the limited number of institutions and research participants for the current study. When combined, the two limitations motivate the view that it is imperative to conduct a broadened study, possibly beyond the borders of Botswana. This would involve multiple case studies, grouped as conventional and ODL providers. This would also take into account the Polluter Pays Principle (PPP) and the Limited Resource Principle (LRP), explained above. As Yin (2003) has aptly put it, this would enable the researcher to explore differences within and between cases. When carried out

in two or more countries, this would enable replication of findings across cases, but most importantly, across the sub region. Having more cases has the potential of ensuring predictability of the phenomena of carbon footprint and opportunity cost across culturally comparable countries of Southern Africa, where a gap in the literature has been noted. In particular, the characteristics of the opportunity cost theory, which has already been explained (educatorblog.wordpress.com/2008/06/20/opportunity-cost/) will find relevant scope for application on a wider plane.

The current study has been mainly on carbon footprint and opportunity cost, yet implicitly, it also touches on quality issues. The issues of time invested in the studies, money invested in textbooks and ICT gadgets, availing experts, to name some, manifest themselves differently in the two scenarios (in a developing environment). For example, is the qualification from BOCODOL of the same quality as that one from BAC? There might be need to investigate this phenomenon in a study that takes into account some of the items in the questionnaire that bespeak quality, by adding items more specific to that aspect of higher education. This is a phenomenon that does not seem to have been researched into in our developing countries. ODL enthusiasts have been vociferous about its benefits, but have little factual basis for their assertions relative to its quality. The question: What is the quality of ODL and conventional qualifications when a comparison is made of the two modes?, can be attempted in a similar way by juxtaposing BOCODOL and BAC, that is on a smaller scale, to begin with. This would then be broadened to accommodate more cases. At many conferences, the question of quality is often posed, and is yet to be answered.

A Comparative Study of Carbon Footprint and Opportunity Costs

CONCLUSION

The significant difference between the average carbon footprint of the BOCODOL group and the BAC group suggests that a given institution, as a proxy for mode of delivery, may be a determining factor of the learner's carbon footprint. The same applies to the significant differences in opportunity costs forgone in either institution. However, the issue of the quality of education offered by either mode of delivering higher education, bearing in mind, researched results, is another case for empirical investigation, and has not been objectified in the foregoing discourse.

REFERENCES

- Botswana Environmental and Climate Change Analysis (2008). University of Gothenburg.
- Brett Henebery, B. (2017) www.theeducatoronline.com (Retrieved 6 February 2019)
- Caird S., Lane A., Swithenby E. (2013) ICTs and the Design of Sustainable Higher Education Teaching Models: An Environmental Assessment of UK Courses. In: Caeiro S., Filho W., Jabbour C., Azeiteiro U. (eds) *Sustainability Assessment Tools in Higher Education Institutions*. Springer, Cham.
- Coleman, B., Jules, L., Hershovitz, C., Scott, P. and Gabriel, M. (2015). "Theories of the Common Law of Torts." In *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta. <http://plato.stanford.edu/archives/win2015/entries/tort-theories>
- Cook, J. and Washington, H. (2015). *Climate Change Denial: Heads in the Sand*, 1st ed. Washington, DC, U.S.A: Earthscan.
- Hayner, M. and Weisbach, D. (2016). Two Theories of Responsibility for Past Emissions of Carbon Dioxide. <https://doi.org/10.1111/misp.12049> (Retrieved 17 January, 2019) <http://timeforchange.org/what-is-a-carbon-footprint-definition> (Retrieved 25 January, 2019)
- <https://www.investopedia.com/terms/o/opportunitycost.asp>. (Retrieved 13 February, 2019)
- Letseka, M. (2012) "Access to higher education through Open Distance Learning (ODL): reflections on the University of South Africa (UNISA)", in Rubby Dhunpath and Renuka Vithal (eds) *Access to Higher Education: Under-prepared Students or Under-prepared Institutions?*, Pearson: Cape Town.
- Perraton, H. (2004). 'Aims and purpose' in H. Perraton and H. Lentell (ed.)
- Pickering, J. and Christian, B. (2012). "On the Concept of Climate Debt: Its Moral and Political Value." *Critical Review of International Social and Political Philosophy* 15: 667–85.
- Policy for open and distance learning*. London: Routledge.
- World Bank, Botswana (2016). The World Bank Group
- Yin, R. K. (1984). *Case Study Research: Design and methods*. Newbury Park, CA: Sage
- Yin, R. K. (2003). *Case Study Research: Design and methods* (3rd ed.). Thousand Oaks, CA: Sage

Interrogating the implications for the exclusion of family, religious and moral education in infant education in Zimbabwe's updated curriculum**Muchabaiwa W. Jakachira G and Kanda M**

Zimbabwe Ezekiel Guti University

Abstract

The study interrogates the continuities and discontinuities of Zimbabwe's updated curriculum focusing on the exclusion of Family, Religion and Moral Education (FRME) in the infant school. The study was carried out in Mashonaland Central Province and utilised Bindura district as a case to explore the implications for excluding FRME in the infant school curriculum. It adopted a qualitative research approach and utilised a case study research design informed by interpretivism as a research paradigm. The interpretive analysis model helped in establishing emerging patterns or themes from the collected data. Ten school heads, ten teachers in charge and 20 teachers were purposively selected on the basis of their experience and qualifications. The data collection methods were in-depth interviews and document analysis. The study reveals that FRME as one of the learning areas is only introduced at grade three. Paradoxically, the philosophy underpinning the updated curriculum emphasises morality and yet it denies a space for FRME in the infant school curriculum. The deliberate omission of FRME as a learning area in the infant school curriculum does not only pose challenges in terms of children's moral development, but also becomes a disjuncture in terms of a spiral and developmental curriculum. Thus, the study strongly recommends curriculum review to reconsider the reintroduction of FRME in infant education.

Key terms: updated curriculum, spiral curriculum, infant school, morality, Religious Education

DECLARATION: We hereby confirm that the article is our original work and has not been submitted elsewhere. All authors have approved the final article.

BACKGROUND

The study explored the continuities and discontinuities of Zimbabwe's updated curriculum focusing on the exclusion of Religious and Moral Education (RME) (now Family, Religion and Moral Education) in the infant school curriculum. It seeks to establish whether the exclusion of FRME in the updated infant school curriculum does not create a disjuncture in terms of moral development as well as in terms of a spiral and developmental curriculum. The findings of the study are analysed using Piaget's

theory of moral development which clearly shows that moral development starts at infancy.

On the attainment of Independence in 1980, the Government of Zimbabwe embarked on major reforms in the education sector. The programme, Education for All in 1987, led to the construction of more schools to ensure access to education by all learners (GoZ, 2004). There was dire need too to ensure that issues of equity and equality were addressed. In the second decade of independence, there was a paradigm shift in the running of affairs in the education sector as the Government realised the need to provide quality education to the masses of Zimbabwe. In 1998, therefore, the Government set up the Presidential

Implications for the exclusion of family, religious and moral education

Commission of Inquiry into Education and Training (CEIT) which is popularly referred to as the Nziramasanga Commission. While the Nziramasanga Commission has several recommendations in terms of the education system in Zimbabwe, one of the major findings was that, the curriculum was too academic and hence the need to review the school curriculum so that it addressed the needs of the learners and implementation.

With this background, Zimbabwe revised and updated curriculum framework for primary and secondary education to run from 2015 to 2022. The updated curriculum outlines the three learning levels as; infant school (ECD A–Grade Two), junior school (Grade 3-7) and secondary school (Form One-Form Six) (Zimbabwe Curriculum Framework, 2015).

Among other important aims, the updated curriculum was designed to inculcate awareness of heritage, culture and traditions as well as self-respect and respect for others (Unhu/Ubuntu). Accordingly, philosophical underpinning the curriculum epitomises universal human interdependence, solidarity, humanness and sense of community in African societies. It can be argued that the philosophy of Unhu/Ubuntu translated as morality can be best taught in the context of religion (Wanja, 2014). However, although religion may be perceived to play such a crucial role in the inculcation of Unhu/Ubuntu, the Zimbabwe's updated curriculum has relegated it to the periphery of the learning areas of the infant school. Infant school includes Early Childhood Development (ECD) A, ECD B, Grade 1 and Grade 2 classes (Dyanda and Dozva, 2007). In the updated curriculum, FRME as a learning area is only introduced at Grade three level. The deliberate omission of FRME as a learning area in infant school curriculum does not only pose challenges in terms of children's moral development but also becomes a disjuncture in terms of a spiral and

developmental curriculum. It is against this background that the study sought to explore the implications of the exclusion of FRME the as one of the learning areas at infant school level.

The Zambian curriculum framework for Early Childhood, Care, Development and Education (ECCDE) (2013:27) emphasises social, emotional, spiritual and moral development as a learning area for young learners aged 4 to 8. Similarly, the South African curriculum guidelines (2015:9) show that the ECD curriculum takes a spiral approach where social awareness as a learning area is introduced at Grade 00 through grade three. In this learning area, ECD learners are expected to demonstrate awareness and respect of religious, social and cultural differences among themselves. A study by Wanja (2014) reveals that Kenya has recently introduced Religious Education from ECD level. For Zambia, South Africa and Kenya, the teaching of RME is developmental and is introduced at the elementary stage which is typical of a spiral and developmental curriculum. Unlike the curricular for the above mentioned countries, Zimbabwe's updated curriculum has discontinued the teaching of RME in infant classes.

THEORETICAL FRAMEWORK

The study is informed by Jean Piaget's theory of moral development. Piaget (1965) in Mwamwenda (2005) proposed that moral development progresses in predictable stages from a very egocentric type through heteronomous morality or morality of realism to autonomous morality or morality of cooperation (Slavin, 2012). The theory is in two stages namely the heteronomous stage which incorporates the egocentric stage and the autonomous stage. By implication, infant learners are in the heteronomous stage of moral development.

According to Piaget in Slavin (2012), the egocentric stage spans from birth to about five years. He observed that, children in this stage have no regard for rules and are incapable of engaging in cooperative activities and moral reasoning owing to egocentrism. Piaget further noted that egocentrism influences children in the heteronomous stage to perceive justice and fairness as equal treatment. The children do not consider the needs and desires of others in their perception of fairness and justice. Kuyayama-Tumbare (2014) advises that teachers can help ECD learners grow out of egocentrism by involving them in RME activities which involve group interaction, turn taking and sharing. This was feasible with the old Zimbabwean infant curriculum which included RME issues in the Social Sciences learning area.

Piaget (1965) in Santrock (2009) states that from about five to 10 years children display heteronomous morality. The term heteronomous entails that the moral behaviour of the child is externally imposed rather than self-directed. From the age of six or seven years children in the heteronomous stage become aware of rules, but view them as sacred, unchangeable and requiring strict obedience. As a result, the child obeys rules to gain adult approval and for fear of punishment, rather than the maintenance of social harmony. The child also believes in immanent justice, the idea that, if a rule is broken punishment should be meted to the rule violator immediately. Hence, FRME should be included in the infant school curriculum to provide infant learners with opportunities to gradually understand the purpose of rules and the limitations of immanent justice.

Another key aspect of the heteronomous stage as noted by Piaget (1965) in Mwamwenda (2005) is that children regard behaviour as right if

significant others approve of it and wrong if they disapprove. In other words, the child's desire to gain the approval of significant others influences them to behave in an acceptable way. In the absence of FRME at infant level, teachers are denied opportunities to progressively lead learners to understand that doing something right merely to receive the approval of others is not always a sound basis of moral decision making and behaviour.

The heteronomous stage falls into Montessori's sensitive period of child development which spans from birth to five years. Montessori cited in Raskin (2018) argues that this is the period when children have the highest potential to acquire language, character and other dimensions of child development. However, with the updated curriculum, the teaching of FRME starts at Grade three when children have passed the sensitive period, delaying the teaching of FRME until children are in Grade three is bound to compromise their moral development. Since moral development is hierarchal, the exclusion of FRME in the infant curriculum may affect the smooth transition of learners to autonomous morality which is the ultimate goal of moral development.

OBJECTIVES

The study seeks to:

- Establish the relevance of FRME in infant school with reference to the Zimbabwean updated curriculum framework.
- Explore teachers' perceptions on the omission of FRME as a learning area in infant school curriculum.

Implications for the exclusion of family, religious and moral education

- Expose challenges posed by deferring the introduction of FRME in infant school if there are any.
- Proffer recommendations on embracing FRME as a learning area in the infant school.

METHODOLOGY

The study adopted a qualitative research approach and utilised a case study research design informed by interpretivism as a research paradigm. Interpretivism is a research paradigm which is based on the belief that reality is socially constructed during interaction and that the goal of social researchers is to understand what meanings people give to that reality (Neuman 2014:51). The study used Bindura as a case to study implications for excluding FRME in the infant school curriculum. There is a strong need to understand the importance of FRME within the context of culture and child development. All this entails attaching meanings to life experiences. The word qualitative implies an emphasis on the qualities of entities and on processes and meanings that are not experimentally examined or measured in terms of quantity, amount, intensity or frequency (Patton, 2007). The qualitative approach gathers information as text based units, which represent the social reality, context and attributes of a phenomenon. Qualitative findings may be transferred to other settings or contexts or they may involve theoretical generalisation, where findings are extrapolated in relation to their theoretical application (Neuman, 2014).

DATA COLLECTION METHODS

In-depth interviews

The study used in-depth interviews to generate data on the implications of

excluding FRME in infant education from school heads, teachers in charge of infant schools and teachers teaching infant classes. According to Cohen et al (2007:228), in-depth interviewing is a qualitative method which involves open-ended, relatively unstructured questions in which the interviewer seeks in-depth information on the interviewees' feelings, experiences and perceptions of a given social phenomenon on their own terms and in the context of their situation. In other words, the interviews captured perceptions of the curriculum implementers on the exclusion of FRME from the infant school curriculum.

Documents review

A desk study was conducted to gain deeper knowledge on the centrality of FRME to child development as well as to appreciate the cultural context surrounding child development. Zimbabwe's updated curriculum framework and curricular for schools in other countries like Zambia, Kenya and South Africa were reviewed to benchmark good practices in teaching RME..

SAMPLING

The study purposively selected 10 schools in Mashonaland province in Bindura district (five urban and five rural) to create a comprehensive perception of the phenomenon under study. From these schools, 10 school heads 10 teachers in charge and 20 teachers were purposively sampled. Purposive sampling is a non-probability sampling method in terms of which participants are selected for a specific purpose, usually because of their unique position, experience and knowledge (Baxter & Jack, 2008: 9; Cohen et al, 2007:114). Patton (2007:181) adds that the thrust of purposive sampling is to identify information-rich sites. In this regard, research participants were sampled on the basis of

their positions in the school, qualifications and experience. In so doing, more teachers with in infant teaching experience were sampled.

ETHICAL CONSIDERATIONS

Ethics in research involve considerations such as fairness, honesty, respect for the integrity of individuals and the confidentiality of certain information (Schutt, 2009:72). First and foremost, we sought permission to get into schools from the provincial education director. The participants in the various research sites were informed about the purpose of the study and of the possibility of policy recommendations for the infant school curriculum review. Informed consent is the most fundamental ethical principle that is involved in research. Participants must understand the nature and purpose of the research and must consent to participate without coercion (Burns, 1997:18). Christians (2000:138). Anonymity and confidentiality were also observed throughout the research process. “Anonymity means that the researcher will not and cannot identify the respondent. Confidentiality means that the researcher can match names with responses but ensures that no one else will have access to them” (de Vaus 1995:337). The study did not mention names of schools and participants to ensure their privacy and confidentiality of information.

FINDINGS AND DISCUSSION

Through document review, it was observed that, the updated Zimbabwean curriculum framework stipulates the following seven learning areas for the infant school curriculum:

- Indigenous Language
- Visual and Performing Arts

- Physical Education
- Mathematics and Science
- Family and Heritage Studies
- Information and Communication Technology (Zimbabwe Curriculum Framework 2015:31).

It can be observed that Religious and Moral Education is conspicuous by its absence from the selected learning areas. Curriculum review which was a recommendation by the Presidential Inquiry into Education Commission was meant to make the education system more relevant to the needs of Zimbabweans because Zimbabwe had inherited a curriculum from the colonial regime which did not directly address the needs of Zimbabweans.

The presidential commission was directed to enquire into the inherited system of education as to the relevance, quality and orientation in the rapidly changing socio-economic environment and to make recommendations for fundamental changes to the current curricular at all levels (GoZ, 1999:558)

The Commission of Inquiry into Education questioned the dominance of Christianity at the expense of other religions like African Traditional Religion. It then becomes even more questionable with the omission of FRME in the updated infant school curriculum. FRME is conspicuous by its absence in the under-listed learning areas for the infant school curriculum. The reasons given for omitting this important learning area are not very clear and convincing. Commenting on the justification for the omission of FRME in the infant school curriculum one school head had this to say:

Implications for the exclusion of family, religious and moral education

Of course the curriculum developers had their reasons for omitting FRME as a learning area in the infant school curriculum. One such misguided reason was that religion tends to indoctrinate learners and young learners are still incapacitated to choose a religion of their liking. FRME is not about converting learners to certain religious convictions. That line of thinking shows lack of understanding the role FRME in school curriculum.

A similar response was echoed by another school head:

I think one major reason for omitting FRME as a learning area in the infant school curriculum could be the assumption that young learners are not yet able to comprehend things of a spiritual nature. Yet young learners are very much able to understand morality when taught using appropriate media. Hence the assumption that issues covered in RME tend to be a bit abstract for young learners could be misguided and deferring the learning area to grade three can only cause discontinuities in moral development.

The sentiments above clearly show serious lack of understanding of the nature and role of FRME in the infant school curriculum on the part of the curriculum designers. It is important to note that the content delivery of FRME relies more on the multi-faith approach, without emphasising on one specific religion. The focus of FRME as a learning area is pivoted on the inculcation of moral values through religious stories and teachings. In other words, the thrust of FRME in the infant school curriculum is not on converting learners into particular religious practices but merely inculcating moral values in learners at this elementary stage of their learning, growth and development. For Kenya, religious education is geared towards continuous moral and spiritual development

of children through Christian Religious Education, Islamic Religious Education and Hindu Religious Education from pre-school (Njuguma, 2012). In other words, the Kenyans have embraced the multi-religious nature of their society.

Emphasising on the importance of FRME in the infant school curriculum a teacher in charge in the infant school explained:

Religion is a vehicle through which morality can be inculcated in learners, particularly young ones. The updated curriculum creates a paradox by emphasising the principles of ubuntu on one hand and rejecting such principles at the foundational stages of children's learning experiences. The omission of religious education creates discontinuity in the moral development of young learners and this defeats the purpose of the philosophical underpinnings of the updated curriculum.

The same sentiments were shared by another teacher during interviews:

Moral values such as sharing, empathy, sympathy love, work ethic as well as being honest can be best taught in the context of religion. It is only reasonable that such values which happen to be part of philosophical underpinnings of the updated curriculum be introduced from the on-start. The updated curriculum is guided by the philosophy of ubuntu hence religious education becomes inevitable in the infant school curriculum.

In Zimbabwe, the Commission of Inquiry into Education and Training concluded that the country did not have a clearly articulated philosophy of education and that, consequently, there is no clear national vision to guide formulation of the goals of educational excellence (GoZ,

1999:25) hence the current curriculum is informed by the philosophy of ubuntu. Paradoxically, the updated curriculum denies FRME a space in the infant school curriculum and yet the inculcation of ubuntu (translated as morality) in learners is the philosophical underpinning of Zimbabwe's updated curriculum. From the Piagetian theory of moral development standpoint, moral development starts at infancy through adulthood (Slavin, 2012 & Mwamwenda, 2005). Juxtaposing the Zimbabwean curriculum framework with either the Kenyan curriculum or Zambian curriculum framework shows that, other nations have rightfully considered RME from infancy while Zimbabwe's curriculum falls short in terms in this regard. It can thus, be argued that by refusing RME a space in the infant school curriculum, the Zimbabwean educators have created a disjuncture that impedes moral development in young learners.

THE DEVELOPMENTAL NATURE OF MORALITY

Most school heads and ECD teachers expressed disappointment with the omission of FRME in the updated infant school curriculum as it tends to pose serious challenges in terms of a spiral and developmental curriculum. Theories of moral development, for example Piaget's (1962) moral development theory emphasises that moral development starts at infancy and increases with each stage of moral development (Mwamwenda, 2005& Slavin 2012). By implication, the omission of FRME in the infant school curriculum points to the inadequacies of the infant school curriculum that impedes a smooth transition in terms of moral development from one stage to the other.

On the issue of developmental curricular, one school head had this to say during interviews;

It is only rational to consider FRME as one of the learning areas in the infant school curriculum because it is a critical component of a spiral curriculum. Deferring it until the fifth year (Grade three) of the primary school is rather too late. Introducing religious education at ECD A level helps to bring consistence and continuity in the delivery of a spiral and developmental curriculum.

A Teacher in Charge (TIC) in the infant department concurred and added:

What you need to understand here is that, infant education provides the foundation of later education. Introducing FRME later in grade three is like building a house without a foundation. Morality should be inculcated in young learners at a tender age through a spiral curriculum. I strongly believe that simplified religious and moral values should be introduced at ECD A and these should get complex as learners go up the grades until one understands moral dilemmas.

A grade three teacher shared her experiences:

What I have observed is that, introducing FRME at grade three poses pedagogical challenges because children learn from known to unknown. For FRME at grade three it is difficult to work with children's assumed knowledge because they have none of it. One has to teach basic content that should have been taught in infant classes and this stalls progress.

Similar sentiments were shared by one experienced ECD teacher:

Moral values are best taught in the context of religion. Denying religion a space in the infant school curriculum is a very big mistake. It is very critical to instil moral values in young children through religion. Concepts in religion at infant level can be

Implications for the exclusion of family, religious and moral education

simplified and introduced sequentially and developmentally.

Sentiments by most school heads and teachers show that, by deferring the introduction of FRME to grade three, Zimbabwe's updated curriculum denies young learners an opportunity to acquire moral values because morality is best taught in the context of religion (Asare-Danso, 2018:41). Similarly, Khan (2008) argues that religion and moral development are inseparable, given that religion drives people's behaviour and actions in a more productive direction and pointed out that religion enables young people to understand the importance of physical, social, emotional and spiritual well-being. In the same vein, Cherry (2014) observes that an education system without religious education could only bring disaster to schools when they produce bright but intolerant and violent people. In support Thungu (2010) says that teaching of religion and social ethics is a foundation for continued survival and enhancement of the quality of life in society and no society exists without moral values and religious education enriches peoples' morals for the welfare of individuals and society. This does not mean that moral values cannot be taught in other contexts, it is possible to teach moral values in the context of other subjects but religion remains the best context for inculcating moral values in young learners.

The teaching of religious education is also a human rights issue. In her study in Kenya, Wanja (2014) argues that teaching of religious education content fulfils a child's right as every child has a spiritual right to the Creator and relate with Him well enough in life. Another study by Cherry (2014) supported the idea that children of 6-10 years old are ready to understand religion and its complexity. By implication, FRME is a necessary pre-requisite learning area in the

pre-school as it enables pre-schoolers to develop morally and emotionally. According to Kohlberg (1987) children can make moral decisions about what is right or wrong, hence he believed that the objective of moral education is the reinforcement of children to grow from one stage to an upper stage (Santrock, 2009). Similarly Piaget (1962) in Santrock (2009) observed that from the age of six or seven children in the heteronomous stage become aware of rules, but view them as sacred, unchangeable and requiring strict obedience, hence findings of the study show that FRME should be introduced in the infant school curriculum to provide infant learners with opportunities to gradually understand the purpose of rules and the limitations of immanent justice. Kenya has since rectified the mistake of omitting religious education as a learning area in the infant school curriculum. According to Kenya Institute of Education (KIE) (2006), religious education component is a new inclusion in the ECD education curriculum, all along, it has been cited as a serious omission because religion plays a major role in any society. Unfortunately, Zimbabwe has taken a retrogressive trajectory in this regard.

The inclusion of FRME education in the ECD and Education curriculum inculcates a spirit of belonging, tolerance and cooperation. Piaget's (1962) theory of morality indicates that there is a direct correlation between a child's cognitive development level and his or her moral reasoning (Slavin, 2012). Sentiments by the research participants show that the deferring of the introduction of FRME in the infant school curriculum only creates hiccups in moral development for young children. In her study in Zimbabwe Kuyayama-Tumbare (2014) advises that teachers can help ECD learners grow out of egocentrism by involving them in religious and moral activities which involve group interaction, turn taking and sharing. Another study by

Asare-Danso (2018:40) in Ghana confirms that children should be encouraged to develop a sense of moral autonomy when they are young and as such, they need a kind of moral education that will challenge them to take moral decisions on their own. Like Piaget, Kohlberg (1987) observed that in order for a child to advance to a more developed level of morality, he or she must develop an equivalent level of intellectual ability. This justifies the implementation of a spiral and developmental curriculum where FRME is introduced at infancy through adulthood.

Comparatively, the old infant curriculum tended to be more effective than the updated infant curriculum because it addressed RME issues in the Social Sciences learning area and allowed for the developmental nature of morality. However, it would be misleading to over romanticise religious education as if it does not have weaknesses, a study by Lickon (1991) in Kenya revealed that curriculum content for religious education in Kenya tended to overlook the practical aspects of morality because some children in school remained intolerant and violent. This points to pedagogical approaches that may not be appropriate for inculcating moral values. In other words, approaches for FRME should be guided by developmentally appropriate practices in ECD. It is also important for teachers to note that moral learning in classrooms does not only occur through the formal curriculum but also through the hidden curriculum (Kohlberg, 1987). Sentiments shared by the different educators above reveal the challenges that are posed by a curriculum framework that defers the introduction of FRME to grade three. It impedes the smooth transition of moral development from one stage to the other. In other words, it poses challenges with the implementation of a spiral and developmental curriculum.

One teacher revealed that work ethic is another critical moral value enshrined in religious education which is missing in the updated curriculum:

The teaching of religious education also assists in the inculcation of work ethics in young children. Work ethic is a critical moral value for the success of any community hence the need to teach such moral values at infancy. Unfortunately, even the family, religious and moral education as learning area at grade three does not cover issues of work ethic. I think the issue of work ethic should be introduced at infancy through adulthood.

Another teacher concurred and added:

Another important moral value entrenched in religion is that of work ethic. It is only important that this important moral value be inculcated in young children at the elementary stage of their learning.

With regards to the relevance of work ethic as a moral value, a senior ECD teacher had this to say during interviews:

You need to understand that religious values tend to eliminate or reduce corruption, graft and laziness at work places. Such values are critical to the prosperity and development of any given society. It thus becomes very critical to inculcate work ethics through religious teachings to young learners. This is the problem with the updated curriculum it introduces FRME at grade three and I think this is rather too late.

The above sentiments further emphasise that the philosophy of work ethic in the context of religion should form part of the themes for infant education because values taught at that tender age are likely to endure forever. Weber's (1930) theory cited

Implications for the exclusion of family, religious and moral education

in Ritzer (2012) shows a strong relationship between religious values and work ethic which tends to promote development in a given society. The inculcation of work ethic in young children can thus become a foundational basis for the spirit of work ethic and development in a given society. The perceptions of school heads and teachers on the influence of religion on work ethics reveal the critical role of religion in the infant school curriculum, hence the challenges that come with denying it a place in an educational curriculum. As already alluded, analysing the new curriculum framework for Zimbabwe reveals that, religion as a learning area is only introduced at Grade 3 level. Even so, Family, Religious and Moral Education as a learning area covered at that level does not cover work ethics. By implication, the deliberate omission of FRME as a learning area in infant school curriculum does not only pose challenges in terms of inculcating work ethics in young children but also impedes a spiral and developmental curriculum.

THE CONTRIBUTION OF FRME TO CHILD DEVELOPMENTAL DOMAINS

Family, Religious and Moral Education contributes tremendously to the child developmental domains. Teaching and learning in ECD classes focuses on the child developmental domains which include social, emotional, linguistic and intellectual development among others (World Bank, 2013). Interviews with ECD teachers revealed that FRME has a critical role in enhancing these developmental domains through religious stories and teachings. An interview with one experienced ECD teacher reveals that;

The focus of learning in infant education centres on the development of social, emotional, intellectual, linguistic as well as psychomotor skills. Religious stories and moral values provide a great opportunity

for developing such skills. Thus, the omission of religious education in the updated infant school curriculum points to the inadequacies and short comings of a curriculum.

Another ECD teacher concurred and said:

Religious stories are very critical in developing young learners in the different developmental domains. They promote linguistic, social, emotional as well as intellectual skills. Thus, deferring the introduction of religious education until grade three is denying young children an opportunity for development and growth in these different domains.

The same sentiments were echoed by a TIC in the infant department:

For infant learners, FRME is not only about inculcating moral values but it enhances intellectual, linguistic as well as social and emotional skills through stories, drama, songs and rhymes derived from different religions in that particular community. The old infant school curriculum was more effective in this regard because it introduced RME right from ECD A.

The Sentiments from school heads and teachers reveal the critical role played by FRME in enhancing child development in the different domains. As enunciated by the research participants, FRME through religious stories, drama, songs and rhymes contributes immensely in developing intellectual, linguistic, social and emotional skills in young children. These skills form the foundational basis for children's later learning and constitute preparedness for formal learning (Wanja, 2014). Similarly, Montessori cited in Raskin (2018) argues that this is the period when children have the highest potential to acquire language, character and other dimensions of child development. Thus, rejecting FRME a space

in the infant school curriculum does not only affect the moral development of young children, but also the other developmental domains (emotional, social, linguistic and intellectual development). This implies that, FRME becomes one of the critical learning areas for the infant school curriculum which cannot be ignored. In this regard Zimbabwe should learn from other countries like Zambia, South Africa, Kenya and Ghana.

CONCLUSIONS

The study concludes that Zimbabwe's updated curriculum framework has deliberately omitted FRME as one of the learning areas in the infant school curriculum. This has not only caused a disjuncture in terms of a spiral and developmental curriculum but also impedes progression of moral development as well as other developmental domains. Although moral values can be taught in other subject areas, it is best taught in the context of religion. While other countries like Kenya and Zambia have reintroduced RME in ECD curriculum after having experienced challenges posed by its omission, Zimbabwe has taken a retrogressive trajectory by removing FRME in the infant school curriculum. The sentiments shared by participants are that the deliberate omission of FRME as one of the learning areas is not only detrimental to moral development of young children but also impedes a spiral and developmental curriculum. RME has been seen to contribute to the inculcation of work ethic as well as social, emotional, intellectual and linguistics skills for young learners and these are critical for formal learning preparedness.

RECOMMENDATIONS

FRME has been seen to be very critical for both the developmental domains and moral development of young children. It is against this backdrop that the study recommends review of the updated infant school curriculum to reconsider FRME as one of the learning areas of the infant school curriculum. It is also recommended that the learning areas in FRME be expanded to include work ethics from ECD A through grade seven. Judging from the sentiments by the participants, it becomes important for curriculum developers to take cognisance of the multi-religious nature of the Zimbabwean society and consider the multi-faith pedagogical approach to inculcate values of tolerance and respect for diversity.

REFERENCES

- Asare-Danso, S. (2018). Moral education and the curriculum: The Ghanaian experience. *International journal of scientific researchers and management*, 6(1), 34-42.
- Baxter, P. & Jack, S. (2008). *Qualitative case study methodology: Study design and implementation for novice researchers*.
<http://www.nova.edu/ssw/QR/OR.13-4/baxter.pdf>
- Burns, R. (1997). *Introduction to research methods*. Third edition, Longman: Melbourne.
- Cherry, K. (2014). Piaget's stages of cognitive development, Retrieved from
http://psychology.about.com/od/piagets_theory/a/key_concepts.htm
- Christians, C. (2000). "Ethics and politics in qualitative research". In Denzin, N & Lincoln, Y.S. (ed.). *Handbook of qualitative research* (2nd ed.), pp.

Implications for the exclusion of family, religious and moral education

- 133–165. London: Sage Publications.
- Cohen, L. Manion, L. & Morrison, K. (2007). *Research methods in education*. London:
- de Vaus, D. (1995). *Surveys in social research*. Fourth edition. Sydney: Allen and Unwin.
- Dyanda, C, & Dozva, M. (2007) Early Childhood development training in Zimbabwe's tertiary institutions: A reflective analysis. *Asian Journal of Management, Science and Education*, 1 (3), 121-132.
- Government of Zimbabwe. (1999). *Report of the presidential commission of inquiry into education and training*. Harare: Government Printers.
- Government of Zimbabwe. (2004). *Zimbabwe millennium development goals progress report*. Harare: Government Printers.
- Khan, C. (2008). *Religion and development are they complimentary?* UCCI Global Working Paper Lilydale, Australia.
- KIE (2006) *Teacher certificate in early childhood development and education syllabus*. Nairobi: Kenya Government Printers.
- Kohlberg, L. (1987). *The psychology of moral development*. London: Harper & Row
- Kuyayama-Tumbare, A. (2014). *Theories of child development in theory of early childhood development: Diploma in Education*. Harare: University of Zimbabwe.
- Lickon, T. (1991). *Moral development and behaviour: Theory and social research Issues*. New York: Rinehart Winston.
- Ministry of Primary and Secondary Education. (2015). *Curriculum framework for primary and secondary education 2015-2022*. Harare: Government Printers.
- Mwamwenda, T.S. (2005). *Educational psychology: African perspective*. Durban: Butterworth.
- Neuman, W.L. (2014). *Social research methods: Qualitative and quantitative approaches*. 4th ed. Boston: Allyn & Bacon.
- Njuguma, J.W. (2012). *Christian religious education*. Nairobi: Kenya Government Printers.
- Patton, M. (2007). *Qualitative research and evaluation methods*. London: Sage Publications.
- Raskin, J.D. (2018). *Abnormal psychology: Contrasting perspectives*. New York: MacMillan.
- Ritzer, G. (2012). *Sociological theory*. New York: McGraw-Hill.
- Routledge. Santrock, J.W. (200). *Life-span development*. Boston: McGraw-Hill.
- Schutt, R.K. (2007). *Research methods in education*. Boston: Sage Publications.
- Sieber, J.E. (2004). Empirical research on research ethics. *Ethics and behaviour*. 14(4), 397-412.
- Slavin, R.E. (2012). *Educational psychology: Theory and practice*. Boston: Pearson.
- Thungu, J. (2010). *Mastering PTE education*. Nairobi: East African Ltd
- Wanja, M. W. (2014). *Influence of Religious Education on Moral Development of pre-school children in Limuru zone, Kiambu County*. Unpublished Master's Degree, The University of Nairobi, Kenya.
- World Bank. (2013). *What matters most for Early Childhood Development: A Framework Paper*. Saber Working Paper, 5. Washinton DC: World Bank

Causes and impacts of private tuition in mauritius- a stakeholder analysis

*Shakeel Mohammad Cassam ATCHIA and Vinayagum CHINAPAH

*Open University of Mauritius

**International and Comparative Education, Stockholm University, Stockholm, SWEDEN

Abstract

Payment-based private supplementary tutoring is a growing phenomenon in Mauritius especially among students who prepare for competitive qualifying examinations such as the Primary school achievement certificate (PSAC), National Certificate of Education (NCE), Cambridge School certificate (SC) and Cambridge Higher School Certificate (HSC). Private tuition in Mauritius is one of the major educational challenges as it goes against the conception of providing free education at all levels ranging from primary to university levels. The aim of this paper is to examine the phenomenon of private tuition in relation to its causes and impacts. Thus, a mixed methodology was used with two distinct phases. Phase one with a quantitative stance, captured the perceptions of 600 students through an amended version of TIMSS students' questionnaire consisting of standardised set of items. The second phase with a qualitative stance consisted of a stakeholder analysis using open group discussions. Analysis of the data collected during the two phases revealed that there are two school of thoughts, where one justifies private tuition evidencing that generally tuition educators show higher level of professionalism in terms of class management, pedagogy, evaluation, feedback, monitoring, moral support, pastoral care and subject content knowledge compared to school educators. They believe that private tuition is significantly correlated with academic success. In addition to teacher factor, this paper explores how school and school leadership, the actual education system and parents are actually drivers of private tuition in Mauritius. However, the second school of thought believed that private tuition is shadowing the school system and is gangrening the Mauritian society.

Keywords: Private tuition, TIMSS students' questionnaire, stakeholder analysis.

I. Introduction

Private tuition lies deep in our local history and is arguably the most intriguing phenomenon of the Mauritian education system. However, analysis of the existing literature revealed that despite the multiple implications of private tuition ranging from pedagogical, psychological, social, economic, political, historical and even cultural, private tuition is an area that has only received limited research attention in the

Mauritian context. In fact, the reasons for the dependence of the Mauritian students on private tuition remain largely unexplored.

Actually, there are two schools of thought where one justifies its role in improving students' academic performance whereas the other explained that private tuition has turned into a shadow system posing a challenge to the regular formal system of education. Bray (2013) stated that in an ideal world, private tuition is meant to

favour individual attention, solve learning difficulties of those lagging behind and urge those aiming at excellence. However, when private tutoring starts to replace mainstream education, then problems crop up.

The present study, which focuses on the secondary level, explore the phenomenon of private tuition in Mauritius through a stakeholder analysis.

II. Literature review

To situate the issue of private tuition in Mauritius, this section provides (i) a brief description of the evolution of the education system in Mauritius, (ii) a brief of the actual educational reform: Nine Year Continuous Basic Education reform (NYCBE), (iii) a critical review of the Mauritian education system and (iv) a review of private tuition in Mauritius

A. Brief of the Mauritian education system

Before Independence of Mauritius in 1968, the Mauritian Educational landscape was largely dominated by private Educational Institutions/schools where secondary education was dispensed in only four government colleges. There were 135 secondary schools in all catering for 39 491 students. The construction of state secondary schools started with the support of the World Bank in 1970. Thereafter the education system evolved from being a mostly private enterprise to a national education system with the objective of increasing access to education.

This cause culminated in landmark developments in education in three watershed years, namely (i) 1977 when education became free at the secondary level, (ii) 2005 with amendment of the Education Act to make education compulsory until the age of 16 and (iii) 2019 with free education at

tertiary level. The decision to provide free secondary education caused enrolment at secondary level to rise considerably leading to an increase in the number of secondary schools to 175 in 2016 including 63 state secondary schools.

The Mauritian education system has witnessed many reforms. Actually, with the new millennium and in the wake of the Jomtien Education for All world conference in 1990, the Ministry of Education produced a ‘Master Plan’ on Education in 1991, which was used to guide reforms in Mauritius at that time. In year 2008, the Ministry develop the Education and Human Resources Strategy Plan 2008-2020 that guided the “Education Reforms in Action” launched in 2008. Then, 2017 marks another important event in the history of the Education sector in Mauritius with the implementation of the Nine Year Continuous Basic Education (NYCBE). The reform adopts a systemic and holistic approach to the transformation of the education system.

B: A Brief of the actual Educational reform: NYCBE

One of the bases for the new educational reform (NYCBE) in Mauritius is to align our system to international standard, especially the UNESCO’s Sustainable Development Goal Four (SDG4) that ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (UNESCO, 2015). The ultimate aim is to ensure that the education system in place allows more students to exit with a better performance at the end of the period of compulsory education and reach a success rate comparable to that of higher achieving countries around the world.

The provision of NYCBE will entail a phasing out of the prevocational stream in the education sector. Previously, learners

Causes and impacts of private tuition in Mauritius

were tracked to mainstream (general) and prevocational stream based on their performance at the Certificate of Primary Education (CPE) at the end of 6 years of primary schooling. The NYCBE also takes care of the learning pace and learning disposition of those who do not develop the desired competencies at the end of 6 years of primary schooling. The new education policy provides for an extended four-year cycle- instead of the three-year cycle- for those who do not meet the requirement and who need more time to develop required competencies.

The educational reform also consists of replacing the actual CPE (Certificate of Primary Education) examination by an end-of-primary cycle assessment, that is, the Primary School Achievement Certificate (PSAC). Students are then admitted in grade 7 in secondary schools where they will have a National Examination at the end of the Grade 9 level, called the National Certificate in Education (NCE). It is an examination at the end of the 'nine year basic schooling' replacing the 'National Grade 9 Assessment' of the previous educational system.

Based on the performance of students in the NCE, students have three choices: (1) remain in the secondary school where they are already enrolled until they complete their secondary schooling; (2) pursue their studies in General Education in Academies (specialised secondary schools) or (3) follow vocational programs in specialised Vocational Schools. This opens more choices to students and thus better prepares them for the job market.

C: Critical review of the Mauritian education system

There is 'rat race' competitions at different levels of the Mauritian education system. It exerts psychological pressure on students and parents, and is perverting the

core mission of the school, which is the provision of holistic development to every child. Jinot (2017) and Bissoondoyal (2008; 2009) concurs that it is a cutthroat competition that is plaguing the system.

Although ranking of pupils at CPE examination was abolished in 2002, the CPE was still serving the dual purpose of certification and selection for admission in secondary schools up to 2017. Actually, before the implementation of the new NYCBE reform, the primary school environment was very competitive, where students strive to get the best National Star colleges, as seats available in such colleges were very limited. This created a very rude competition amongst relatively low aged students (approximately 11 years old) where only the best performed students are admitted to such schools, creating the problem of elitism (Mariaye, 2005).

In the 'Inspiring every child's policy document on Nine Years of Continuous Basic Education reform, the actual Minister of Education, Honorable (Mrs.) Leela Devi Dookhun-Luchoomun stated that the previous education system has resulted in a percentage of our children not being adequately literate or numerate despite completing six years of primary schooling. Thus, the new educational reform (NYCBE) includes the elimination of CPE, considered as the instrument that breeds the current unhealthy competition at an early age, by the Primary School Achievement Certificate (PSAC).

Ironically, this step is only postponing the 'rat race' competition three years later that is after the 9 year continuous education, at the end of Grade 9. With the implementation of the National certificate in Education (NCE) as from 2020, students will be competing for a seat in the elite upper secondary institutions, known as academies. In fact, 12 national

colleges are already in the process of being converted into academies. These academies would only have classes from Grade 10 to 13.

Moreover, to eliminate competition at an early age (primary school level); the transition from Grade 6 (end of primary schooling) to Grade 7 (beginning lower secondary schooling) was supposed to be smooth with automatic promotion. However, the criteria considered to secure a seat in a secondary school (except the academies) was students' performance in PSAC in addition to parents' choice and proximity of location. In fact, Callikan (2017) stated that the plainer truth for many rectors and professionals is that competition at a national level will all too predictably operate for access to the best local or regional secondary institution, breeding another layer of substitute "star" colleges to the national ones (The Mauritius times, 2017).

Thus, even with staggered modular examinations or lower grade markings, neither the pervasive private tuition industry, nor potential residential address trafficking, nor heated and fractious challenges of college assignments, nor all the ills associated with early competitive pressures will have subsided. Actually, this is the new reality of our actual education system.

Furthermore, the evil is not limited to the junction between grades 6/7 and grades 9/10 only. It is also established at the end of secondary education, where the Government awards students with the best academic performance in the Cambridge Higher School Certificate examinations at the national level by giving them full scholarships for tertiary education in the best-ranked international universities. This award of laureates is inherited from the British colonisers. Ironically, though the government has also introduced a second award to socially disadvantaged students who perform very

well at national level by giving them scholarships for their tertiary education (Ministry of Education, 2018), it is limited to a meagre amount of money to have access to local universities. Moreover, since 2019, tertiary education has been made free in Mauritius.

Thus, competition to obtain the best regional schools post primary schooling, competition to ensure a seat in academies post grade 9 level or competition for scholarships post Grade 13 (HSC) level are feeding the industry of private tuition in Mauritius, despite several educational reforms.

D: A review of private tuition

According to Bray and Kwok (2003), 'private tuition' may be viewed as the practice of providing additional teaching and learning support to students in the form of a paid service outside mainstream schooling. It mainly concerns academic subjects, such as languages, mathematics, sciences, accounting and so forth.

The terminology used for the payment-based extra tutoring varied. Some countries prefer 'private tuition' while others 'private tutoring'. In Mauritius, the former term is much more common. Analysis of the literature revealed that it is also referred as 'private supplementary tutoring' (PST), 'extra school instruction' (ESI), 'after-school classes', 'afternoon tutoring', and 'shadow education amongst others. Bray (2003) uses the metaphor 'shadow education' to suggest that the phenomenon of private tuition 'mimics' or replaces the mainstream education. In some cases, students prefer attending private tuition than school and thus shadowing the school system. Others might resort to terms such as 'second system', 'parallel education sector', 'tutoring market' and 'private tutoring industry'.

Causes and impacts of private tuition in Mauritius

Private tuition in the world

The phenomenon of private tuition is global and exist in different countries. However, the type and implication of private tuition differ from country to country. Baker (2012) observes that what started as a rather local phenomenon exploded worldwide'. According to Forbes Magazine (2012), the global market for private coaching will surpass \$ 102.8 billion by 2018. Only the Scandinavian countries seem to have been spared as the parents trust the mainstream education (Bray, 2013). Dang and Rogers (2008) highlighted that private tuition can be found in countries economically and geographically diverse such as Cambodia, the Arab Republic of Egypt, Japan, Kenya, Morocco, Romania, Singapore, United States and the United Kingdom.' Moreover, mass tutoring is the norm in countries like Japan, Hong Kong, South Korea, Singapore, Kenya and Mauritius. Such a practice is carried out on a large scale where even tutoring centres are made more accessible.

Private tuition in Mauritius

Educational experts from international organisations such as UNESCO and the World Bank specified that payment-based extra lessons in school subjects outside school hours has become a major component of the education systems in numerous countries (Baker, Akiba, Letendre & Wiseman, 2001; and Dang & Rogers, 2008). Private tuition has therefore been interpreted as a kind of educational phenomenon that functions in parallel to mainstream education. Moreover, Dindyal & Besoondyal, (2007) highlighted that there is a noticeable prevalence of private tuition in some countries, including Mauritius. This is further evidenced by findings of international research studies such as SACMEQ where it was revealed that the highest incidence of paid extra lessons was concentrated in Kenya

and Mauritius (Paviot, Heinsohn, & Korkman, 2008). Moreover, Foondun (2002) pointed out that private tuition has reached epidemic proportions in Mauritius.

Whether it is a seat in the best regional college after PSAC or a seat in academies after NCE or a scholarship or a seat in the best universities after 'A' level, Mauritians believe that the key to their dreams and academic achievements is private tuition. Actually, as stated in the introduction, there are two schools of thought in Mauritius. One justifies its importance in improving students' academic performance whereas the other consider private tuition as a plague in the Mauritian education system.

On one side, some aspects of private tutoring is considered positive, where it provides additional incomes for tutors and create constructive out-of-school activities for young people, in addition to its importance in boosting academic performance of students. It is noted that children who receive such tutoring are likely to perform better in school and thus stay in the education system for longer durations (Bray, 2010). Mahadeo (2008) even stated that private tuition has become unavoidable since schools do not provide the student with the learning skills to excel in the examinations.

However, on the other side, private tuition is considered damaging. The Association for the Department of Education in Africa stated that it is one of the major flaws of the Mauritian education system (Lam Hung, 2008) as it shadows the formal system of education (Bissoondoyal, 2009). According to Bray (2009, 2010 & 2013), private tuition is believed to distort parts of the mainstream system, place an economic burden on households, and create excessive pressure for children and adolescents. Private tutoring has obvious

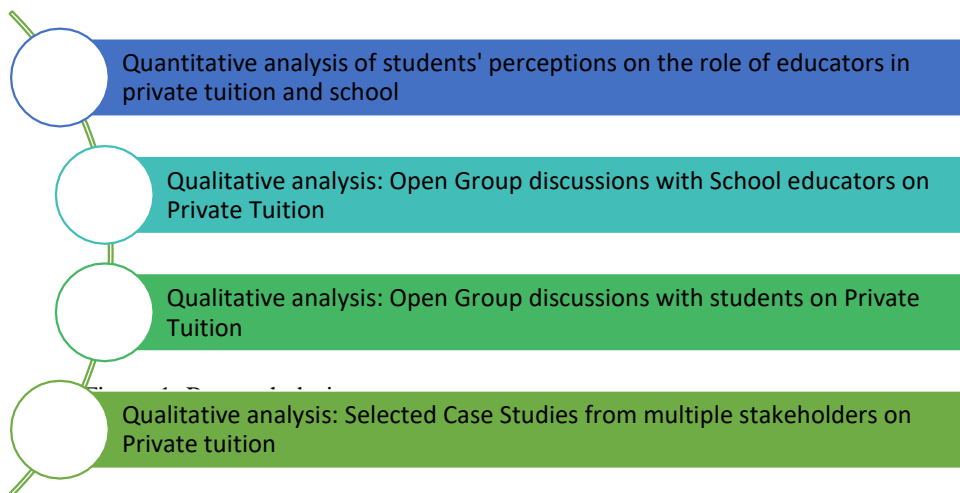
implications for social inequalities where high-income families can afford greater quantities and better qualities of tutoring than middle- income and low-income families. At the same time, the latter may find themselves forced to invest in tutoring simply to keep up with their peers. In addition, it may have implications for in-school processes. Among the most problematic aspects are cases in which private tutoring becomes a substitute for the mainstream. Especially near the time of major external examinations, schools in some countries may be perceived by pupils to be less able to cater for their specific needs (Bray, 2010), including Mauritius.

Despite divergence on the impacts of private tuition on the society, many researchers have stated that it is a major factor affecting students' academic achievement. For instance, in a policy research report based on SACMEQ I for Mauritius, Kulpoo (1998) stated that tuition was found to be one of the stronger influences on pupil achievement. This is in line with other researchers' findings, such as, Jheng (2015), Bray, Kwo and Jokić (2015), Liu and Bray (2017), Seo (2018) among others.

Thus, this paper explores the perceptions of different stakeholders, through a stakeholder analysis, to understand why private tuition is increasingly gaining ground as a shadow system in Mauritius

III. Methodology

A mixed method research approach for data collection and analysis was used to provide a broader perspective of the study and a deeper understanding of the role of private tuition in the Mauritian context. As shown in Figure 1, which summarises the research design, the study consisted of two main phases. Phase I (PI) has a quantitative stance where the perceptions of students, as the main stakeholder, were captured to understand why the Mauritian students feel the need of extra tutoring, in relation to the role of educators in school and private tuition. Phase II (PII) consisting of three steps, had a qualitative stance which gave a broader understanding of the role of private tuition.



Phase I

The two directly involved stakeholders in private tuition are the students and educators. Student, at the receiving end, is the main stakeholder and thus their perceptions are crucial to understand the role of educator as a main driver of private tuition in Mauritius. Thus, Phase I captured the perceptions of students on the role of educators in both school and

private tuition so that their respective role in the two settings may be eventually compared. The views of 600 students, representative of student population in Mauritius, were captured via the amended version of TIMSS student's questionnaire and analysed using the SPSS version 21. Figure 2 shows the stepwise procedure of Phase I.

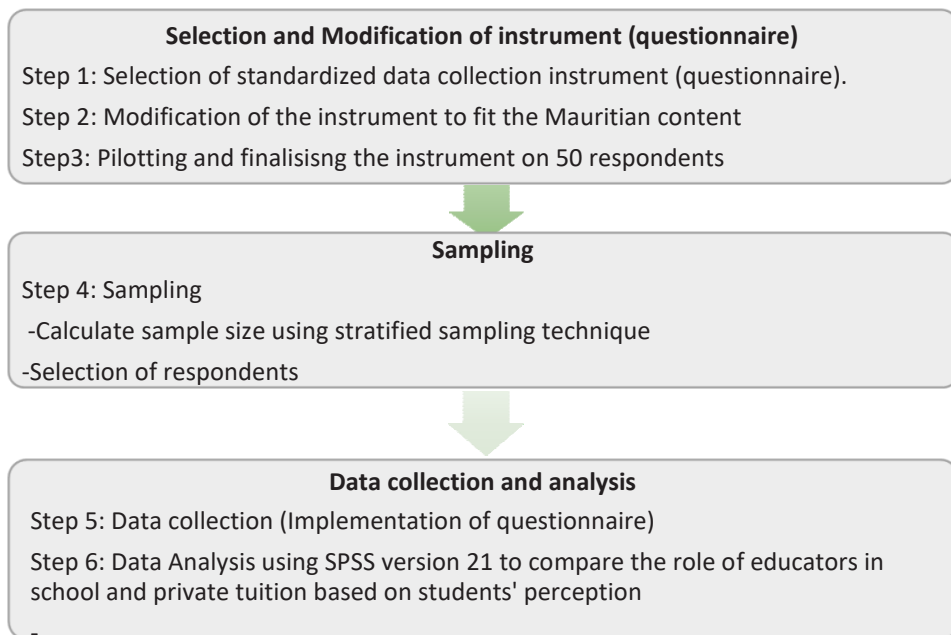


Figure 2: Stepwise procedure of Phase I.

Step 1: Selection of data gathering instrument (Survey Questionnaire)

International surveys assessing learning have been used in many countries during the last 20 years. The three most common surveys to capture perceptions of

stakeholders are TIMSS, PISA and PIRLS. The 'TIMSS student questionnaire' was selected based on the following considerations:

1. The TIMSS survey consist of a section with well-elaborated items to capture students' perceptions on the role of educators.
2. Literature review reveals that 'TIMSS student questionnaire' has been commonly used in many important researches.
3. The questionnaire is pitched to the level of students at secondary level of schooling.
4. Ease of implementing the questionnaire
5. Items' wording are simple and thus easily understandable by the respondents
6. Questionnaire use if free for research purposes.

(Reference: <http://www.oecd.org/pisa/home> and <http://timss.bc.edu/index.html>)

Step 2: Modification of data gathering instrument (Questionnaire)

The standardised 'TIMSS questionnaire' does not include items to capture students' perception on private tuition. Consequently, the items capturing students' perception on teacher factor at school level were replicated to capture perception on private tuition.

Step 3: Piloting of the data-capturing instrument to ensure reliability and validity

To ensure reliability, the questionnaire was piloted with 50 randomly selected students. The data were entered in SPSS and reliability of the items was analysed using the reliability coefficient Cronbach's a.

To ensure validity of the questionnaire, a panel of experts including the Quality assurance Officers of the Ministry of Education, Rectors and Deputy Rectors was convened to examine the items in the questionnaire.

Based on the data collected through the piloting process and subsequent analysis of reliability and validity, the following modifications were brought to the 'TIMSS student questionnaire':

- Wordings and question order were altered to contextualise the instrument in the Mauritian context.
- Instead of the 5-points rating of the Likert scale, 4-points rating was used, as many students opted for the neutral option during the piloting and thus their perception on the item was not captured. Thus, the neutral option was removed.
- Negative wording questions were changed to facilitate data analysis.

Step 4: Sampling

Simple random sampling - double-checked using 'Qualtrics Online sample size calculator' - were used to calculate the sample size. Thus, 600 respondents were identified out of a population of 14,191 students.

A stratified sampling was used to identify the participants/ respondents. It includes a proportionate allocation using a sampling fraction in each of the strata that is proportional to that of the total population. As shown in figure 3, the stratified sampling has been done in terms of gender, performance and zonal location to have wider perspectives.

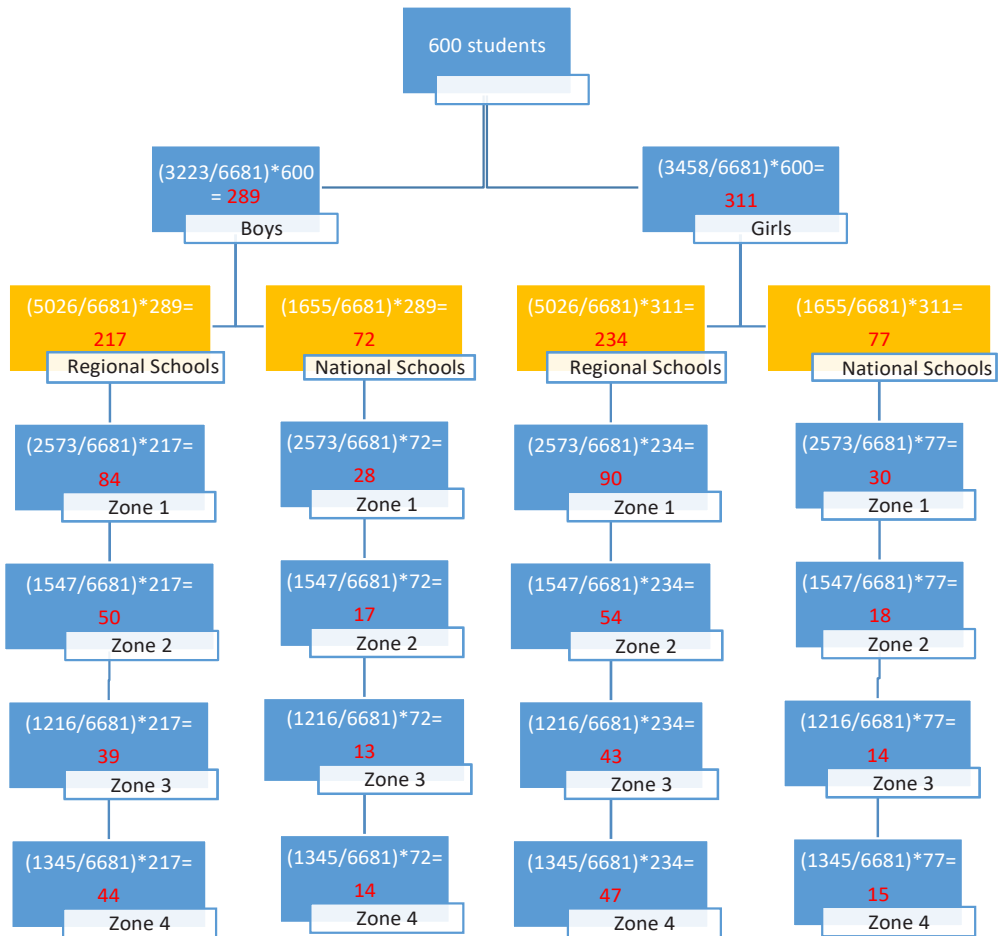


Fig 3: Sampling

Once the number of students in each zone was identified, random selection of school and respondents were carried out to produce the sample of 600 students.

Step 5: Data collection

The letter of introduction was distributed to the 600 randomly selected students and the respective consent forms were collected before implementation of the questionnaire.

The questionnaire was then distributed. Assistance to fill the questionnaire was limited to description of words where students have comprehension difficulties.

Step 6: Data Analysis

The data collected were captured into SPSS and cleaned before analysis to compare the role of educators in school and private tuition based on students' perception

Phase II

Phase II is a stakeholder analysis where the open group discussions with students, educators, parents, rector, quality assurance officer and lecturer from the Mauritius Institute of Education were used to understand the impacts of private tuition in Mauritius. The first step of phase II captured the views of twenty school educators randomly selected from national and regional schools to form part of the first open group discussion. Two colleagues recorded the respondent's comments and the contents validated before use.

Despite phase I of the study captured the student's voice, the second group discussion (step 2) provided deeper understanding of the impacts of private tuition. Sixteen students comprising eight boys and eight girls from different schools were randomly selected from the 600 sampled students to form part of the open group discussion.

Though students and educators are the main stakeholders, it was imperative to capture the views of other stakeholders indirectly involved in private tuition to have a broader view and understanding of the impacts of private tuition in Mauritius. Thus, the third open group discussion (step 3) included respondents such as (i) a student from the French education system ('Lycée') in the last year of secondary schooling, (ii) a Grade 13 student in State School not taking private tuition, (iii) an ex-laureate holding a prestigious job, (iv) a rector of a State Secondary School, (v) a former educator and now quality assurance officer and (vi) a lecturer in a tertiary education institution.

The data collected during phase II were scrutinised and the key ideas were selected for presentation. It should be noted that this step was carefully done in the presence of two experts in qualitative research.

IV. Results and Discussions

This section describes the findings of this study based on the research design summarised in Figure 1.

A: Quantitative analysis of students' perception on educators' role in private tuition and school

The amended version of the TIMSS student's questionnaire categorised the items in relation to key roles of educators such as (i) class management, (ii) pedagogy, (iii) evaluation, feedback and monitoring, (iv) moral support, guidance and pastoral care and (v) subject content specialist. The collected data were analysed and then presented as follows to facilitate identification of disparities in educators' role in private tuition compared to school.

Class management

Table 1 shows that most students highlighted that tuition educators show better class management compared to school educators in relation to (i) providing conducive climate for teaching and learning to take place, (ii) class management skills used, (iii) consideration of students' point of views in deriving rules and regulations and (iv) maintaining class discipline.

Causes and impacts of private tuition in Mauritius

Table 1: Students' perceptions on teachers' class management

Item	Total percentage of students highlighting/%							
	Never		Sometimes		Often		Always	
	Sc	Tu	Sc	Tu	Sc	Tu	Sc	Tu
Class climate is conducive for teaching/learning	28.8	15.0	22.8	23.2	21.3	27.8	27.0	47.5
Educator has good class management	28.3	2.0	12.3	14.5	35.8	16.7	23.5	66.8
Educator consider my point of views in class management	29.3	8.7	37.2	50.3	26.0	20.0	7.5	21.0
Educator maintains discipline in class	18.5	0.3	15.7	7.8	45.3	29.2	20.5	62.7

Sc: School

Tu: Tuition

Pedagogy

Table 2 clearly evidence a significant disparity between the pedagogical role of school and tuition educators. For instance, there is a higher percentage of students highlighting that tuition educators always (i)

work in a systematic way, (ii) ensure that students feel at ease to participate during the lesson and (iii) lay emphasis on teacher-student interactions. However, it was noted that tuition educators do not use a variety of teaching techniques and strategies.

Table 2: Students' perceptions on pedagogy used by teachers

Item	Total percentage of students highlighting/%							
	Never		Sometimes		Often		Always	
	Sc	Tu	Sc	Tu	Sc	Tu	Sc	Tu

Shakeel Mohammad Cassam and Vinavagum

Educator encourages active participation of students in lesson	41.0	30.7	28.0	50.5	16.2	5.7	14.8	13.2
Educator uses different teaching techniques and strategies	41.0	30.7	28.0	50.5	16.2	5.7	14.8	13.2
Educator work is systematic and well planned	19.5	17.0	36.2	25.0	31.2	26.5	13.2	31.5
Students feel at ease to participate in lesson	34.7	15.2	28.3	13.7	22.2	36.3	14.8	34.8
Educator lay emphasis on teacher-student interaction	12.8	12.3	30.7	8.7	46.2	53.8	10.3	25.2

Sc: School

Tu: Tuition

Evaluation, Feedback & monitoring

Table 3 shows that most students highlighted that, tuition educators are better evaluators, give feedback and monitor students' work and progress compared to school educators. Actually, it is noted that tuition educators always or regularly (i) give H/W, (ii) verify if H/W are completed by students, (iii) correct the given H/W, (iv) give

feedback on corrected work (v) provide useful feedback and (vi) evaluate students' progress. However, it is noted with concern that 90.9% students highlighted that class test is never or only rarely done in private tuition.

Table 3: Students' perceptions on teachers' role in evaluation, feedback and monitoring

Item	Total percentage of students highlighting/%							
	Never		Sometimes		Often		Always	
	Sc	Tu	Sc	Tu	Sc	Tu	Sc	Tu
Feedback by educator is useful	26.0	12.2	23.5	15.7	41.8	37.8	8.7	34.3
Educator gives H/W regularly	21.7	4.5	28.5	21.7	32.8	24.8	17.0	49.0
Educator regularly verifies if students have tackled their H/W	27.3	6.8	31.5	15.7	35.8	35.7	5.3	41.8
Educator gives class/test assessments	2.7	24.7	11.7	66.2	26.2	6.8	59.5	2.3

Causes and impacts of private tuition in Mauritius

Correction of work is done by educator	2.2	6.0	22.0	13.2	39.8	19.0	36.0	61.8
Educator gives feedback on corrected work	16.3	7.0	51.0	10.7	26.2	28.5	6.5	53.8
Educator evaluates progress	17.3	10.0	33.2	14.8	40.2	50.0	9.3	25.2

Sc: School

Tu: Tuition

Educator's mastery of subject content

respective subject content compared to school educators.

Table 4 clearly evidence the fact that tuition educators show a higher mastery of their

Table 4: Students' perceptions on teachers' mastery of subject content

Item	Total percentage of students highlighting/%							
	Never		Sometimes		Often		Always	
	Sc	Tu	Sc	Tu	Sc	Tu	Sc	Tu
Educator master content	26.3	0.0	19.7	5.0	35.0	19.8	19.0	75.2

Sc: School

Tu: Tuition

Moral support and pastoral care

that tuition educators are more involved in motivating students compared to only 28% for school educators. Same trend is noted for provision of moral support and guiding students in their daily development

Table 5 shows that students' perception on educator's role in providing 'moral support, guidance and pastoral care' varied for school and tuition educators. Eighty three percent of the students stated

Table 5: Students' perceptions on the role of teachers in providing support and pastoral care

Shakeel Mohammad Cassam and Vinavagum

Item	Total percentage of students highlighting/%							
	Never		Sometimes		Often		Always	
	Sc	Tu	Sc	Tu	Sc	Tu	Sc	Tu
Educator motivates students	37.5	0.2	34.5	16.8	24.0	39.8	4.0	43.2
Educator provides moral support	17.7	6.2	54.7	16.8	25.0	39.5	2.7	37.5
Educator guides me in daily development	10.5	15.5	47.8	20.5	37.7	54.3	4.0	9.7

Sc: School

Tu: Tuition

The tabulated data presented in this section is self-explanatory showing clear disparities in the role of educators in private tuition and school. According to the sampled students, tuition educators show higher level of professionalism in their duties in terms of class management, pedagogy, evaluation, feedback, monitoring, moral support, pastoral care and subject content knowledge. This explain why Mauritian students shirk schools to attend private tuition, especially during the third semester nearing examinations. Actually, the student population are more committed to the 1h30 to 2 hours of private tuition compared to on average 3 to 5hr-contact time per week for one subject in schools. It is therefore obvious that the inefficiency and unprofessionalism of some school educators is the real cause of private tuition shadowing the school system is Mauritius. Bray (2003) also observed that private tuition becomes more prevalent in systems where schoolteacher does not necessarily meet the students' expectations. Though teacher factor remained the key drivers of private tuition in Mauritius, a broader understanding of the impacts of private tuition is obtained in phase II.

B: Qualitative analysis of the impacts of private tuition in Mauritius.

Although standardised questionnaire is considered a reliable instrument of collecting data, participants' responses are framed within the desired context set in the questionnaire. Thus, limiting this study to the findings of phase I, which led to the conclusion that teacher factor is the main cause of private tuition, does not do justice to the complexity of the problems of private tuition. Actually, the qualitative stakeholder analysis of phase II gives more leeway to respondents' feelings and perceptions leading to a deeper understanding of the causes and impacts of private tuition in Mauritius.

Analysis of the respondents' perceptions through the open group discussions revealed other causal factors of the increasing dependence of secondary school students on private tuition in Mauritius. Actually, two schools of thought emerged from the analysis to explain this dependence. One legitimates private tuition by justifying its importance in the achievement of secondary school students whereas the second militates against private

Causes and impacts of private tuition in Mauritius

tuition on the basis that it is shadowing the school system in Mauritius.

The first school of thought justifies private tuition in Mauritius as follows:

I. Teacher factor

Some respondents highlighted that private tuition is shadowing the school, as many educators are not fulfilling the students' needs at school levels.

Students highlighted that private tutors ensure that the syllabus is completed well in advance so that enough time is devoted to revision and consolidation work needed as pre-exams preparation. In contrast, many school educators complete the syllabus during the third (last) trimester and thus limited time is left for revision. Some school educators either do not even complete the syllabus or simply rush through the remaining chapters without ensuring understanding and comprehension.

Along these lines, some students and parents stated that private tuition is essential as it provides room for consistent drilling despite shorter contact time (1h30 to 2 hours tuition time compared to 3 to 5 hrs school contact time for each subject per week). They said that tuitions provide the right platform to tackle maximum past exam papers as preparation for examination. They stated that many school educators are not guided by the sense of service whereas tuition educators help students to construct knowledge, solve problems, develop personality, imbibe values, develop the 21st century skills and become inquisitive.

They also stated that the problem often lies with some educators who are merely teaching without educating. Educators are not willing to change their traditional teaching methods. The chalk-and-

talk method has only transitioned to the projector-and talk method. In fact, some decades back, teaching in Mauritius was often limited to instructing students to copy notes given on blackboard whereas nowadays the same old content is being projected. This is a common example of traditional teaching using technology as logistic resources. The MIE lecturer (respondent) stated the following:

“Despite the fact that educators are aware of innovative teaching techniques and strategies, the constructivist and inquiry approach are not used in school.”

Some educators acknowledged that they give supplementary tuition against payment after school hours. Few even confessed that their roles in private tuition differ from that in school, as follows:

“(i) more individual attention is given to students in need,

(ii) more H/W is given,

(iii) educators have more freedom in selecting the strategy to ensure students are motivated

(iv) there is higher work consistency in tuition

(iv) educators maximise on remedial and consolidation work.

(v) lots of past exam papers are done as pre-exams preparations and

(vi) educators ensure higher level of monitoring, feedback and evaluation.”

II. Actual education system

Despite aiming at the holistic development of every child, the actual Mauritian education system lay much emphasis on competition. The NCE at the end of Grade 9 is a selection

examination where only the best students will be admitted to the academies to pursue their upper secondary schooling. The Cambridge Higher School Certificate, which mark the end of the secondary schooling, has a competitive dimension where students compete for National scholarships for admission in the best universities of the world. Thus, the rat race to obtain the best schools or scholarships is still driving competition and thus feeding private tuition. The parallel obsession with scholarship examination and examination to ensure a seat in the best schools is common in other countries such as Sri Lanka as observed by Wijetunge (1994).

Moreover, implementation of the new educational reform (NYCBE) involves the setting up of 12 academies, which accommodate students from grade 10 only. This resulted in an increasing demand for available seats at grade 7 in state secondary schools after the PSAC which is a selective assessment marking the end of primary schooling. To accommodate the students, most classes have a ratio of 40 students to one educator. Thus, as stated by many respondents, private tuition represents a real alternative to school with a much lower student to educator ratio. The student respondents stated that,

“Tuition with limited number of students is powerful, where individual attention and monitoring of students’ work and progress are made possible.”

The educators (respondents) conquer that with smaller groups in private tuition, teaching is pitched to the level of the students and they feel at ease to communicate and engage in lessons.

Another important aspect emphasised by the respondents is the availability of resources especially appropriate pedagogical

resources. Though the Ministry of education invest enormously in resources, there is a significant disparity in terms of availability of such resources in private and state secondary schools. Compared to the limited resources in private secondary schools, some private tutors are investing in extra training and technology such as ICT educational tools to improve their teaching. Thus, students tend to favour private tuition instead of school.

Bray (2003) stated that the type of education system in a country has major influence on the prevalence of private tuition. He further stated that systems that are teacher-based rather than child-based, and /or intolerant of slow learners lead to more prevalent private tuition. Despite the new educational reform ‘Nine Years Continuous Basic Education’ is aiming at the holistic development of students and emphasising on the use of innovative teaching strategies, the talk and chalk remains predominant at classroom level. Thus, students find a better alternative in private tuition.

III. School and school leadership

Most of the respondents stated that school and school leadership have a major, though indirect, effect on the phenomenon of private tuition in Mauritius. Approximately 82 % of parents and 71% of students responded that school is not catering for their needs and thus they turn towards private tuition for extra support. Even the other respondents such as Quality assurance officers and MIE lecturer responded along the same line. Actually, the respondents’ perceptions captured through the open group discussions tallied with phase I where students highlighted that private tutors are better at fulfilling their academic needs compared to school educators. The Quality assurance officers also highlighted that school leaders such as Rectors, Deputy

Causes and impacts of private tuition in Mauritius

Rectors and Senior Educators have a major role in providing attractive and conducive environment to every child, so that the need of students and parents are met. Then only the shadowing effect of private tuition will be dissipated.

Moreover, absenteeism -especially during the third term, which precede examinations- is very high in most schools in Mauritius. However, the students are still present in private tuition until the eve of examinations. Despite the policy of 80% attendance requirement to sit for the SC and HSC examinations, parents provide medical certificate to cover their wards' absences. This observation back the fact that school is considered less important compared to private tuition in Mauritius. Actually, some respondents highlighted that:

“School and school leaders are failing in their task of providing quality education to the students.”

IV. Parental factor

During the group discussions, it was made clear that parents heavily influence their children's learning behaviour and choice of opting for private tuition. Most of the time, they are the ones who choose private tutors for their wards. It was also noted that despite criticising private tuition as a shadow education impacting on the school system, most parents in Mauritius send their wards for private tuition. Foondun, (1992) mentions that the tacit acceptance of private tutoring can be 'frightening'.

The educational specialist among the respondents such as the Quality Assurance officer, the Rector and the MIE lecturer acknowledged that they have sent their wards to private tuition despite believing that private tuition has negative impacts on the society. They explained that nowadays,

students who do not attend tuition are the odd ones, as private tuition forms part of the 'norms' of the Mauritian society.

The other parent respondents categorically support private tuition. They explained that in school, educators are imposed on the students whereas parents select the best educators in a specific field to coach their wards. Their selection is based on (i) the success rate of previous students coached by the educator, (ii) feedback of other parents and students, (iii) ability of educators to provide individual attention, (iv) mastery of content of educators, (v) pedagogical approach of educators, (vi) follow-up done by educators, (vii) personality of educators, (viii) fairness of educators and (ix) amount of work given by educators. This makes all the difference and their performance bear testimony of the marvellous work accomplished by the private tutors. They also stated that it could not be mere coincidence that most of the 10 best candidates ranked in international Cambridge examinations are usually coached by those few excellent private tutors. The parents also highlighted that most parents in Mauritius believe in private tuition and thus bears priority in their monthly budget. Around 80% stated that their children cannot do without private tuition.

A respondent highlighted that the best academically performed students come from families where education is prioritised, corroborating a Rector's view that they mostly come from well-educated backgrounds or from family which lay emphasis on education.

The second school of thought emerged from the stakeholder analysis is against private tuition, where the respondents highlighted the following justification of their stand:

Shakeel Mohammad Cassam and Vinavagum

- Some respondents stated that school educators are often the one providing supplementary private tuition after school hours. Though such supplementary tuition is legal and taxable, some unscrupulous supposedly educators do not give their best at school as they tend to save their energy for tuition. This is considered as unfair and unjust, especially to school students who do not take supplementary tuition. Moreover, they are being paid to work and to give their best at school.
- Some respondents stated that students are often brainwashed by the private tutors. Having an upper hand on the students, some private tutors belittle their colleagues in school. Thus, students devalue their school educators leading to classroom indiscipline.
- Both the students from 'Lycee' and the grade 13 students in a State Secondary School explained that private tuition has been given too much importance in Mauritius and excellent academic performance may be achieved without private tuition.

The grade 13 students highlighted that he has willingly chosen to do without private tuition. He stated that despite studying 7 O-Level subjects without tuition, he got the aggregate 6 in SC last year and has embarked in his 'A' level studies once again without private tuition. He feels that both parents and students have been brainwashed and that private tuition exerts more stress on students and eventually on parents.

He stated that his success is the result of effective time management and self-directed learning. He had lot of free time, which was efficiently used for academic and non-

academic purposes. He also stated that he had ample time to rest, play, practice sports and read after school while others lose a lot of time in transport to and from tuition. He works on his own and laid emphasis on the syllabi, guidelines from CIE (Cambridge International Examination) exam report and marking scheme. He is engrossed in personal research work by consulting reference books and tapping into online resources. Importantly, he rarely misses any homework set at school. He explained that everything is a question of organization.

- Respondents stated that though private tuition was meant for extra and individual support to cater for the need of students, many private tutors have more than 40 students in each group. Ironically, the ratio of students to educator is lower in school than in private tuition. In such condition, many students may be left behind in tuition.
- Many students follow the mass of students to attend tuition provided by the crowd puller who is often the best educator in a respective field. However, the level in such tuition may be very high with maximum competition to tap the potential of the high flyers only. Thus, the average and low-level students are left behind in such setting and thus do not gain much in tuition.
- Private tuition is replacing school. Many students perceive school as a site for socialisation and private tuition as the sole place where the proper education is provided. This led to indiscipline, absenteeism and many other problems that educators and school leaders have to face on a daily basis.

Causes and impacts of private tuition in Mauritius

- Many respondents acknowledge the fact that students are well prepared in private tuition to face competitive examinations. However, education is not limited to academic success and private tuition is far from providing holistic development of students.
- After a whole day at school followed by private tuition, students are biologically, physically, mentally and psychologically tired. Thus, students are often losing their childhood and playtime for the sake of extra tuition.
- Private tuition yields too much pressure on adolescents. In fact, there are cases where competition and pressure has led to depression and major instability amongst the young students.
- Private tuitions do not cater for the development of skills, attitudes and values needed for the holistic development of students. For instance, inquiry approach and development of inquiry process skills takes time, which cannot be achieved in tuition.
- Teaching techniques used in private tuition is often limited to talk and chalk with adapted drilling exercise targeting exam questions. Thus, opportunities for using innovate teaching strategies is scarce.
- Tuition takes a lot of students' time, which may eventually influence the stability of a family. Students do not spend enough time with the family members.
- Private tuition increases the gap between the different social class/status, as parents with low

family income cannot provide additional support to their wards due to limited budget.

However, parents with medium and high family income provide their wards with extra support with the best educators and some even provide one-to-one tuition. Thus, students from rich families are better prepared for examinations. In fact, Joynathsing, Mansoor, Nababsing, Pochun and Selwyn (1988) concluded in the same direction in relation to the attitudes towards private tuition based on income bracket and educational level.

V. Conclusion and recommendations

This paper provides important ground data to all stakeholders ranging from policy makers to educators. The findings explain the phenomenon of private tuition in the Mauritian context so that necessary measures may be taken to regularise the phenomenon in the wake of providing inclusive and equitable quality education to every child as stipulated in the international commitment to United Nations sustainable development goal 4 and the National curriculum framework.

Conclusion

The paper shows that private tuition has both positive and negative impacts in Mauritius, giving rise to two school of thoughts. The first one militates against private tuition, as they believe that it is shadowing the school system and negatively affecting the society by putting extra burden on family with limited revenue and affecting students' mental health. However, the second school of thoughts justifies private tuition on the basis that it caters for the needs of students and parents in ensuring academic success by providing extra support, especially when the different stakeholders are questioning the role of school in Mauritius.

Data collected through the standardised TIMSS questionnaire and open group discussions were analysed to understand why private tuition is shadowing the school system and has gone out of proportion in the Mauritian society. It was found that the common drivers of private tuition in Mauritius are teacher factor, parental factor, school and school leadership and limitations of the actual education system. It was also noted that the main driver remains the teacher factor where the professionalism showed by private tutors in their role as facilitators led to high students' academic achievement. Students (respondents) highlighted the limitations of school educators in terms of class management, pedagogy, evaluation, feedback, monitoring, moral support, pastoral care and subject content knowledge, compared to private tutors.

Recommendations

The best way to resolve the phenomenon of private tuition in Mauritius is to regularise it. Drastic changes such as policies banning private tuition may not work in the Mauritian context as parents and students are much dependent on tuition as publicised by the findings of this study. Actually, the approach must be consistent with the needs of parents and children and with the realities of context. Any imposed solution, which ignores these factors, will be doomed to failure (Joynathsing et. al, 1988)

The best way to regularise private tuition in Mauritius is to focus at the levels of policy makers, educational specialists and schools. Relevant policies need to be set by policy makers so that educational specialists produce appropriate action plans for implementation, especially at the level of schools. Based on the findings captured in this study, the focus should be on the provision of quality education in school with

the aim of meeting the needs of every student. School should provide highly valued inclusive and equitable quality education to every child with a holistic approach to produce lifelong learners. With provision of quality education at the level of school, the need for extra support and thus private tuition will be reduced and eventually regularised. To reach such target, the Ministry of education need to review the curriculum, the process of teaching and learning at school level and the type of assessment/evaluation.

Despite the new educational reform (NYCBE), under implementation in the country, is aiming at the holistic development of every child, there is too much emphasis on examinations (PSAC, NCE, SC and HSC) leading to competition and thus feeding private tuition. An adapted curriculum that favours the holistic development of students is required where the focus should be on development of skills instead of rote-learning knowledge content. Holistic approach should not be limited to providing compulsory non-academic subjects as in the actual NYCBE. There is a need of the integration of non-academic skills development in the academic subjects. Then only students will be able to face the challenges of the future. The curriculum should make provision for the mixed abilities and learning styles of our students through proper differentiated pedagogy/instruction. Differentiation need to be through content catering for equitability, process (task and activities), product (assessments and evaluation) and learning environment. Then only all students will be taken on-board. Evaluation and assessments should not be limited or overemphasised on written examinations. The curriculum should make provision for differentiated modes of assessing students.

As teacher factor has been identified as the main driver of private tuition in

Causes and impacts of private tuition in Mauritius

Mauritius. The educational system need ensure quality teaching and learning at school and especially at classroom levels. School leaders need to be given more autonomy in monitoring teaching and learning in their respective schools. They should be able to identify the challenges and provide pedagogical support to educators as per their need. Figure 4 represents the students' perceptions – captured in this study- on how

private tutors shows higher professionalism in terms of their roles in teaching and learning. Thus, as a first step to provide quality education at school level, action plans may be prepared where focus is on providing appropriate support to school educators in the field of class management, pedagogy, evaluation, feedback, monitoring, moral support, pastoral care and subject content knowledge.

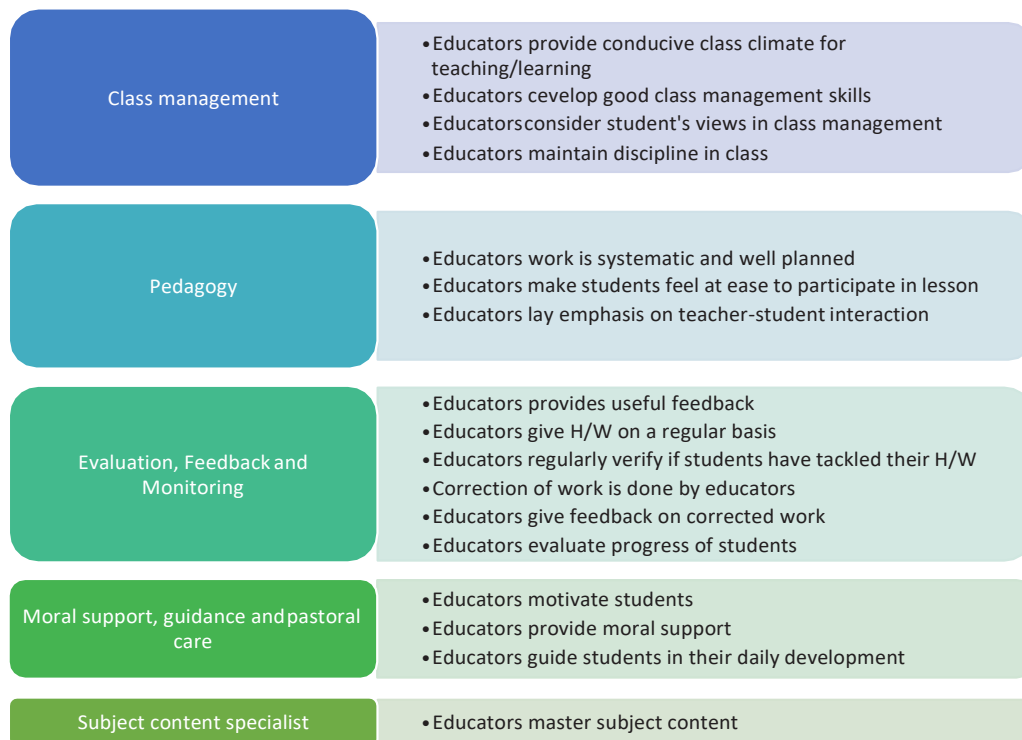


Figure 4: Teacher factor

VI: Further Research

Though this study provides some important ground data on the phenomenon of private tuition in Mauritius, extensive research is needed on (i) the impact of private tuition on the Mauritian society, (ii) development of policies and action plans to regularise private tuition and (iii)

implementation analysis of the proposed recommendations, policies and action plans.

VII: References

Baker, D., (2012). Private Tutoring. Available at:
<http://www.youtube.com/watch?v=Ius9fpCtpQw>. Accessed on 6 May 2014.

- Baker, D.P., Akiba, M., Letendre, G. & Wiseman, A.W. (2001). Worldwide shadow education: outside-school learning, institutional quality of schooling and cross-national mathematics achievement. *Educational Evaluation and Policy Analysis*, 23(1), 1–17.
- Bissoondoyal, S. (2008). The way to growth. *L'Express* (Special Edition), Mauritius. 10 March, pp. 139
- Bissoondoyal, S. (2009). The business of private tuition. *L'Express*, Mauritius. 30 June, pp. 5
- Bray, M. (2010). Blurring boundaries: the growing visibility, evolving forms and complex implications of private supplementary tutoring. *Orbis Scholae*, 4(2), 61–73, ISSN 1802-4637.
- Bray, M. (2003). Adverse Effects of Private Supplementary Tutoring: Dimensions, Implications and Government Responses, UNESCO. International Institute for Educational Planning (IIEP), Paris.
- Bray, M. (2009). Confronting the Shadow Education System: What Government Policies for What Private Tutoring? Paris: UNESCO International Institute for Educational Planning (IIEP).
- Bray, M. (2013). Benefits and Tensions of Shadow Education: Comparative Perspectives on the Roles and Impact of Private Supplementary Tutoring in the Lives of Hong Kong Students. *Journal of International and Comparative Education*, 2 (1), 18–30
- Bray, M. (2013). Comparative Research on Shadow Education. Available at: <http://www.youtube.com/watch?v=ZE2TRokYq68> [Accessed 6 May 2014]
- Bray, M., Kwo, O. and Jokić, B.(2015). Researching private supplementary tutoring: Methodological lessons from diverse cultures. Hong Kong/Dordrecht: Comparative Education Research Centre. The University of Hong Kong/Springer
- Callikan, S. (2017). Nine Year schooling: A lost opportunity?. *The Mauritius Times*, Mauritius, 28th July.
- Dang H. & Rogers H. (2008). The Growing Phenomenon of Private Tutoring: Does It Deepen Human Capital, Widen Inequalities, or Waste Resources?. *The World Bank Research Observer*, 23(2), September 21, 2008, 161-200.
- Dindyal, J., & Besoondyal, H. (2007). Private tutoring in mathematics: the Mauritian experience. Paper presented at the conference on redesigning pedagogy: culture, knowledge and understanding. Retrieved August 1, 2009 from <http://conference.nie.edu.sg/2007/paper/papers/CUL394.pdf>.
- Foondun, A.R. (1992). Private tuition in Mauritius: the mad race for a place in a “five-star” secondary school. Increasing and improving the quality of education – Monograph 8. Paris: UNESCO/IIEP.
- Foondun, R. A. (2002). The issue of private tuition: The practice in Mauritius and selected South-East Asian countries. *International Review of Education*, 48(6), 485-515.
- Forbes Magazine (2012). Global Private Tutoring Market Will Surpass \$102.8 Billion by 2018. Available at <http://www.forbes.com/sites/jamesmarsh/allcrotty/2012/10/30/global-private-tutoring-market-will-surpass-102-billion-by-2018/>. Accessed on 14 August 2014.
- Jheng Y, J (2015). The influence of private tutoring on middle-class students’ use of in-class time in formal schools in Taiwan. *International Journal of Educational Development*, 40(1), 1–8.
- Jinot, B. L. (2017). A critical review of the current education system of Mauritius and the learner discipline problem in

Causes and impacts of private tuition in Mauritius

- Mauritian state secondary schools. *Journal of Education and Social Sciences*, 8(1), 47-55.
- Joynathsing M., Mansoor M., Nababsing V., Pochun M. & Selwyn P. (1988). *The Private Costs of Education in Mauritius*, University of Mauritius, Government Printer.
- Kulpoo, D. (1998). The quality of education: some policy suggestions based on a survey of schools. *SACMEQ Policy Research Report No. 1*. Paris: UNESCO/IIEP.
- Lam Hung M, L. (2008). *Our primary education: an overview and analysis of the Mauritian education system*. University of Mauritius.
- Liu, J. & Bray, M. (2017). Determinants of Demand for Private Supplementary Tutoring in China: Findings from a National Survey. *Education Economics*, 25(2), 1–14.
- Mahadeo, S. (2008). On rectors, pupils and parents. *Magazine*, 13 May, 12.
- Mariaye, H. (2005). *The Role of the school in providing moral education in a multicultural society: The Case study of Mauritius*. Doctoral thesis, Pretoria, University of South Africa
- Paviot, L., Heinsohn, N., & Korkman, J. (2008). Extra tuition in southern and eastern Africa: coverage, growth and linkages with pupil achievement. *International Journal of Educational Development*, 28(2), 149–160.
- Seo, E., H. (2018). Private Tutoring and Academic Achievement: Self-Study as a Mediator. *Social Behavior and Personality: an international journal*, 46(5), 823-830
- Wijetunge D. (1994). Management of acute and traumatic wounds: main aspects of care in adults and children. *Am J Surg*, 167(1), 56 – 60.

A review of quality education: the role of the community in Ghana
Buah, Emmanuel¹ and Akuffofrank Asah²

Circuit Supervisor, GES-Techiman North District, Bono East Region, Ghana¹

covasti@hayoo.com, Tel: +233244145957

Lecturer, University of Development Studies, Department of Basic Education Studies²

Fausfran27@yahoo.com, Tel: 233553368548

Abstract

The main purpose of this study was to review the role of community participation in Ghana towards quality education. Community participation is very crucial to the education system. It has been established that through community participation, schools can create nourishing atmosphere and positive community-school partnership. However, the situation of community participation in Ghana has not been the best as compared to last century where middle school system was operational. Even though, some community still organise and operate to support schools but community participation in education has not fully gain root in several communities in the era of democratic dispensation. Community responsibilities towards infrastructure, school furniture, decision-making process, monitoring and supervision of the teaching and learning have not been fully recognised. PTA and SMC established under the constitution of the Republic of Ghana are no more functioning in most communities. It appears that the poor state of community participation is as result of political parties' promises and insufficient knowledge on the part of community members. It is therefore, imperative for government to realise the significance of community participation in education to make proper policies for education but not for power gains.

Key words: Community, Education, Involvement, Management and Participation,

INTRODUCTION

It is no more furtive that family participation is an integral part of a successful accomplishment of the child education. Several studies have identifies parental involvement as a crucial factor affecting the individual learning and the school environment. However, many people and educational institutions have recognised that the high rate of students success are as results of three components collaborating to give better opportunities for the student future, the teacher, the family and the community. Almost all the time family and teachers roles are discussed forgetting the role of community towards education. Therefore, this study seeks to review the role of community participation in the provision of quality education for students. Major themes reviewed are *quality education and its importance, concept of community participation, forms of community participation, the role of community participation in education, how community get participation in education, the role of community towards quality education in Ghana, and implication of community participation on Ghana Education.*

METHODOLOGY

This research work falls under review paper, which focuses on critical and constructive analysis of literature in the areas of quality education and the role of community in education. The researchers, therefore, employed Issues Review under Best Evidence Review Approach (Mayer, 2009). Best evidence reviews, according to Mayer (2009) focus on studies selections for result exploration on a point of disagreement or a question in a specific field of research. The choice of the research design was appropriate since it allows the research to

gain control in obtaining substantial amount of knowledge for decisions to be made. In this case, the researchers used several books, journals and articles from online database. In all cases, the researchers made use of Scheepers et al (2014) search strategy approach by using keywords. Again, inferences were made from the reviews for conclusion and recommendations.

QUALITY EDUCATION AND ITS IMPORTANCE

Every human society needs progress and development in greater levels of material and socio-cultural achievement. For such a progressive transformation of the society to take place, education has to be the key instrument. Education according to Rabie (2007) is the key method in which the society used to inculcate knowledge from one generation to another, learn how to develop and accumulate knowledge, maintain certain values and transform others that society deems vulnerable, and establish non-conventional ideas, attitudes and norms, social and cultural change and non-traditional ways of thinking in a new form. Since immemorial education has been the basic human right and important vehicle for the development of people, society and nations. According to Peters (2010), education is perceived as a process that encapsulates the criteria to which any one of the family processes must conform. A critical look of Peters' belief of education however, is based on 'reform'. Therefore, as much as society is dynamic so should education. Indeed, I believe no one will argue on the fact that education is a reform tool for society to achieve its desired goals. However, the question is 'what form of education can bring the desired achievement for the society to benefit? In looking for the right answer to this

The role of the community in Ghana

question, UNESCO (2000), UNICEF (2000) and OCED (2012) propagate quality education for all children in all countries. Quality education according to Chapman and Adams (2002) refers to all the inputs, processes, and output of education to produce the desired outcomes for the society to benefit. According to them, the inputs include the teacher, amount of teacher training, number of textbooks, whilst the process means the amount of direct instructional time, the extent of active learning, and output also refers to test scores, graduations, etc. and the desired outcome is the performance in subsequent employment. It implies that for education to be termed as quality it must be able to secure employment for the individual under training. In 2000, UNICEF provided the contextual features that should characterise quality education. These include:

- Learners who are healthy, well-nourished and ready to participate and learn, and supported in learning by their families and communities;
- Environments that are healthy, safe, protective, gender-sensitive, and provide adequate resources and facilities;
- Content that is reflected in relevant curricula and materials for the acquisition of basic skills, especially in the areas of literacy, numeracy and skills for life, and knowledge in such areas as gender, health, nutrition, HIV/AIDS prevention and peace;
- Processes through which trained teachers use child-centred teaching approaches in well-managed classrooms and schools and skilful assessment to facilitate learning and reduce disparities;

- Outcomes that encompass knowledge, skills and attitudes, and are linked to national goals for education and positive participation in society. Source: UNICEF (2000, p 4)

In this knowledge-based economic and societal development, quality education should manifest in various levels of professional system that will bring change to political, economic, social and moral aspect of the world. The importance of education according to early scholars like Plato, Dewey, and Aristotle believed that education is central to the moral fulfilment of individual and the well-being of the society in which he lives (OECD, 2013). Even, the conventional wisdom indicates that quality education helps to promote healthy life, improves individual performance in labour market and promotes good citizenship. This tells us that the outcome of quality education in human dispensations promote social, emotional, physical, emotional psychological and spiritual well-being of the individuals. So there is no argument on what OECD (2013) posits, that the benefit of quality education is to bring significant benefits to the society, not only through higher employment opportunities and income but also via enhanced skills, improved social status and access to network. If everyone is recognising the full potential of the power of quality education, policy makers of education could critically address the societal challenges facing education. In another perspective, quality education opens the doors for individuals to break the chains of poverty since it has the link to all development goals, including gender empowerment, improving health and maternal health, reducing hunger, fighting diseases and increasing economic growth and building peace.

From the review of Peters (2010), education is important to the fact that it gives

the right to education, information and communication, attitudes, institutions and societal systems. In total support to UNICEF (2000), quality education should be common and lead to change and evolution towards information in the context of new understanding of society challenges.

CONCEPT OF COMMUNITY PARTICIPATION

The meaning of community participation is better understood when the two emerging words are explained. Community according to Mathie and Cunningham (2003) is used to denote a group of people as in a village, neighbourhood, or ethnicity boundary. Bray (2000) contends that, there are about 94 alternative definitions of community, but suggest that a community could be some features like a network of shared interests and concerns, a symbolic or physical base or in a narrowly defined household. For the purpose of this study community is a group of people living in a well-defined locality who share common interest.

Participation is a widely used language in institutions when it comes to development. Cornwall (2008) noted that participation refer to anything that involves people. However, in a more clearer sense Ahiabor (2017) explain that participation from World Bank point of view refers to a process of contributing, influencing and sharing control over development initiatives and making decisions over the use and control of resources that affect them. For the purpose of this study, the researchers agree with Dale (2000) that participation is the involvement of people or stakeholders with different interests and abilities towards an achievement of a goal.

Having digested the meaning of Community and Participation, Community

Participation is simply the involvement of the community in decision-making process towards common goal. In education, community participation means involvement or partnership with the citizens and social agencies which are affected by the schools in policy decision-making processes in areas including selection of school personnel, infrastructure, budget and plans for integration (Narwana, 2010). In this sense, one can assume that community participation in education is ways that community that the school is located share common responsibilities towards the improvement of the education for prosperity of the children in the society.

FORMS OF COMMUNITY PARTICIPATION IN EDUCATION

Education across the world does not only take place in the schools. However, within the homes, communities and society as a whole. Despite, the various responsibilities that the school perform towards educating the child, the aforementioned groups have several roles to support the child's education. It is important to note that none of the groups can solely take the full responsibility of education. Therefore, community and society must support parents and families in educating, nurturing, socialising the children in the society. According to Ahiabor (2017), schools are institutions responsible for preparing the children for future.

Community participation comes in different forms. Griffin and Steen (2010) suggested four ways in which community participation can be; finance, material contribution, labour and ideas. Indeed, the level and the processes of the participation do not occur equally, but the effectiveness depends on the leadership, understanding and commitment of the school and the community.

The role of the community in Ghana

According to Swanepoel and De Beer (2006) participation can be direct or indirect and it does not exist unless through mobilisation. According to them, there was former community participation that occurs when community participate directly in the educational programs. On the other hand, community participate indirectly in education through associations, committees, and clubs.

Therefore, Epstein (1995) noted that there should be partnership between the schools, community, families in ways that can help children achieve a better future. To achieve this Epstein (1995) provides several areas through which the school and the community succeed through partnership. These are (i) Improving school programs and school climate; (ii) providing family services and support; (iii) increasing parents' skills and leadership; (d) connecting families with others in the school and in the community; (e) helping teachers with their work.

To be able to achieve successful partnership Epstein (1995) provided different responsibilities that community can participate actively:

Parenting: the community could assist all families to establish home environments that could sustain students learning at school, for instance, provision of community library and social learning centres to support children learning.

Communication: there could an effective design form of school-home and home-school communication channels to encourage parents to learn about the school programs and their children's progress as well as teachers' effectiveness in the school.

Volunteering: the community can recruit and organise parents to help and support schools as teachers, caregivers,

security personnel and other voluntary services.

Learning at home: There should be seminars on curriculum related issues, decision-making process and planning of school events.

Decision-making: community can get involve in school decisions on the matters of the school

Collaborating with schools: integrating community resources and service in the school

THE ROLE OF COMMUNITY IN QUALITY EDUCATION

The responsibilities of realising the full dream of quality education for every child lie on all stakeholders of education. However, one important stakeholder who is normally neglected by many scholars in their quest of promoting quality education is the 'community'. According to UNICEF, the first feature of quality education is learners who are healthy, well-nourished and ready to participate and learn, and supported in learning by their families and communities (UNICEF, 2000, 4). According to MacQueen et al (2001) concept of community centred on five (5) main elements; first, community as 'locus, a sense of place' referred to the geographical entity ranging from neighbourhood to city size, or a particular place to live. Second, community is also seen as a group of people sharing common interests and perspectives such as values, norms and culture. Third, element of community manifest in their joint action, as a sense of coherence and identity, social ties and diversity that exist between different groups but exist and sharing tasks and responsibilities. Fourth is the strong conviction of community in the performance of a common task, sharing responsibilities

and fifth is the community interest in promoting community development. Uemura (1999) explain community as group of people sharing culture, language, tradition, law, geography, class and race.

The relationship that exists between education and community is seen as symbiotic. As much as the community is expected to support education to function well to achieve its desired results, the community expected to see education help solve the societal problems. Therefore, for any given community to get good returns from the education there must be community participation.

Even though most scholars misunderstood the role of community towards quality education as synonymous to the role of parents towards quality education, it can be emphasised that there are clear distinctions between them. While parents provide school fees, textbook, school uniform, feeding, etc for their awards, the role of the community takes forms of providing furniture, school blocks, provision of teachers, library, etc. According to Shaeffer (1994) community role comes in the form of enrolling children in school, contribution of money, materials and labour, implying passive acceptance of decisions made by the school, making decisions including setting realistic goals, making feasibility study, planning, implementation and evaluation of educational projects. In another dimension, Colletta and Perkins (1995) also noted the role of community as having dialogue with policy makers; involvement in school management; curriculum design; provision of teaching and learning materials, and construction of school infrastructures. These are clear evident that communities and societies should support families and parents in educating the children for the society. Williams (1994) is with the view that there are three models that exist

between Education and Community; traditional community-based education, government-provided education, and collaborative model. The traditional-based model occurs whereby the community provides education to the young ones through their own effort. The government-based model is where government assumed full responsibility of providing education to the community. The collaborative model is where community makes a supportive role to government made provisions. Uemura (1999) was with the view that education prepares children in the community for the betterment of the community and education cannot be a separate entity within the society, therefore, it is important to operate in partnerships.

CHALLENGES HINDERING COMMUNITY PARTICIPATION IN EDUCATION

The effectiveness of community participation in education is marred several factors. Kumar and Corbridge (2002) indicated that lack of sufficient knowledge and skills to manage schools pose major challenges to people in involving themselves in community and school programmes. Inadequate knowledge and skills of community participation has also echoed in Harriet, Anin and Yussif (2013) report. Again, poor communication on the part of school authorities accounts to low community participation. According to Ahiabor (2017), political influence has also be one of the factors affecting the effectiveness of community participation in education. Some community members fell threatened by government officials and agents of political parties when local decisions are not favouring them (Addae-Boahene, 2007). In another situation, there is “colonial mentality” that the rural populace lack the initiative to make productive contribution to education planning processes. In Ghana, Baku and Agyemang (2002) were

The role of the community in Ghana

with the view that wrong timing of SMC/PTA meetings; responsibilities given to people by government without community knowledge; educational authorities failure share information with community members on education and lukewarm attitudes of community members towards education are some major factors affecting the effectiveness of community participation in Ghana.

Addae-Boahene (2007) also added that difference exists between government officials and the local community members result to mistrust and marginalisation, which affect community participation. Again, Kolkman, Kok and van der Veen (2005) also indicated that language barrier is another factor hindering community participation. This occurs when the education officials do not speak common language with the local people.

It is credible to agree with Addae-Boahene (2007) that leadership styles, school-community relationships, information sharing and interaction styles demand that nature of community participation. The perception that educational stakeholders are more reactive to planning issues result to poor community participation. Inferably, stakeholders should command respect for each other. In a situation whereby such respect is not given to each member of the stakeholders it strongly affect the community participation.

THE ROLE OF COMMUNITY TOWARDS QUALITY EDUCATION IN GHANA

In Ghana, traditionally, government has been the main agent in the funding of public schools in terms of construction and operation of schools. Because of increase in population of the country, provision of resources has become limited to the school

management affecting the quality of education intended to achieve. Some communities in Ghana having realised that they are not benefiting from the government education cake mobilised themselves to undertake initiative in building established schools in their communities so the youth will get access to education. In Ghana, there is evidence that communities initiate supporting the government by providing infrastructures such as classroom and teacher accommodations, teaching and learning materials and transportation (Attrams, 2012). Even some communities hire teachers to teach their children in government schools. Adam (2005) listed traditional Ghanaian community involvement in education as provision of communal labour to establish infrastructures, making monetary contributions to support school projects, provision of accommodations, giving out land for school farming, etc, churches were also allowing schools to use chapels as classrooms and seriously attending school function such 'open days'

The support communities were providing to education was so tremendous that the Ministry of Education encouraged every school to have Parent Teacher Association (PTA). Although, PTA is voluntary association of parent and teachers they serve as pressure group to the communities. Community involvement in education has not been the best over the last two decades due to urbanisation, occupational challenges, lack of legal backing to community involvement in education and weak institution to enforce by-laws.

Not until 1994, government having realised the poor involvement of community in Ghana education, established school management Committees (SMCs) under the Ghana Education Act of 1994 in all basic schools as intervention to strengthening

community involvement. The School Management Committee represents the entire community in the education (Osei-Owusu & Sam, 2012). Beside the PTA and the SMC, there are other committees, for instance, District Education Oversight Committee (DEOCs) that have been put in place to promote community involvement in education. Recently, the Ghana Education Service as part of its effort to promote community involvement in education has instituted Community Participation Officer at each District to oversee and strengthen the link between school and community.

The effectiveness of all these interventions seem not has been working best for the promotion of community involvement toward quality education in this 21st century. These days, school PTA meetings have not been well patronised by parents; School Management Committees also have not been functioning well to the desired expectations. As a personal experience, the role of the PTA and the SMC executives only turn to be the sole responsibility of the effective and caring chairperson. Community members poorly attend educational forums and durbars. It is rather unfortunate that hardly do we see community members having communal labour to promote education. Churches are no longer supporting education if not for their private gains. Chiefs and elders no longer discuss issues related to education in the community.

The community attitudes to education in Ghana has been so poor in this era that every nation is seeking for quality education for its young and is having serious implication on the future of Ghana Education. However, for the Education Officer and Community Participation Coordinator this negative attitude is a concern, and should be to all stakeholders of education. Definitely, one would be tempted to ask the possible cause of these poor

attitudes towards our education, which is the key to economic development. Perhaps, one could attributed urbanisation. Nevertheless, if churches organised successful programmes in the cities why not educational programmes. However, intuitively, one serious possible cause to the poor attitudes of community towards quality education is political talk from the Ghanaian politicians. Power-driven politicians make many promises to the community as if government should do everything. This in many cases make communities and other organisations and even individuals forget about their social cooperate responsibilities towards education.

IMPLICATION OF COMMUNITY PARTICIPATION ON GHANA EDUCATION

Effective educational system is established when all the stakeholders of the education work collaboratively. Some years back, Ghana education system was regarded as a shared responsibility between government, community and parents. Traditionally, the state and the civil society have been the main providers of school education. With the emergence of political gains and power-driven politicians, the educational system has been affected resulting in the government accepting all the responsibility of providing education. These responsibilities range from payment of employees' salary, provision of infrastructures, furniture, school uniforms, school feeding, textbooks, payment of examination fees, teaching and learning materials. These huge responsibilities on the government has put Ghana Education at a disadvantage because of delays in releasing funds, to the district Assemblies to perform the necessary tasks. In fact, in a number of occasions, resources promised by government are not honoured. Some district assemblies even divert educational funds to their own political benefits. The acceptance

The role of the community in Ghana

of the government to provide the necessary resources for effective teaching and learning has also denied the communities and parents opportunity to contribute their quota to the education. Even where some parents are willing to support education in their community, government interference by declaring statement like no parent should pay PTA dues and no levy in schools. However, the government over the years has not been able to deliver budgeted promises as expected.

Currently, Ghana education system has been politicised to the extent that directors of education do not have a say to suggest and make decisions to promote effective teaching and learning, and government policies are not good for the progress of the education system. Communities have stopped initiating or establishing schools for their children, they do not even take school maintenance responsibility, and as a result, most school buildings are in bad state to the extent that it has become a death trap in the school compound. Communities do not have any input when government is building school blocks for a community. Ironically, the government has declared schools, especially the basic schools as community and missionary based with a few being managed by the district.

The inability of the community to get involved in the educational system has led to poor performance of students, indiscipline in schools and dilapidated structures of school buildings.

In this perspective, Ahiabor (2017) indicated that comprehensive stakeholders support reduced students and teachers' absence, and improved students learning in villages with high illiteracy level.

We do agree perfectly with Addea-Boahene (2007) that most Ghanaian schools were initiated and established by the communities and later absorbed by government, therefore, management and control of these schools then shift from community to central government authorities bringing minimum participation of the community. There is strong evidence that community participation influences the development of the education.

CONCLUSION

The research therefore noted that communities no longer involve themselves in education as happened some years back. Again, the established institutions such as PTA, SMC and District Oversight Committee entrusted to manage the schools were not properly functioning because of low or no motivation for volunteers (Osei-Owusu & Sam, 2012). Parents do not have time visiting the schools even some ignoring PTA meetings.

Education plays a significant role in political and socio-economic development of any nation. It generates substantial benefits to the people and the society as a whole. Much as the school is not isolated from the community, and are, living in symbiotic system the communities should be encouraged to participate actively in the school affairs. It is the duty of the government to make such the communities see the schools as their properties by taking full responsibility as individuals take full responsibility of their own properties. Again, parents should fight for safe environment for their children in the school by giving necessary support.

The government of Ghana should realise that the impact of participatory governance, participatory management, school monitoring networking and coalition

building, community resource mobilisation are effective means of achieving educational goals of every nation (Berends, 2009; World Bank, 2006). Community involvement is mainly ranging from decision-making, provision of resources, financial support, voluntary collaborating, material contribution and labour contribution. The support community provides towards education should never be underestimated by the government. Currently, most school are in bad shape due to poor maintenance culture by the government. The questions to be asked are: 'who's responsibility to maintain the school buildings? Can government alone support education in Ghana?

RECOMMENDATIONS

1. Based on the review, the researchers recommended that PTA and SMC should be mandated to schools with support from government.
2. There should be frequent educational empowerment such as training for Community Opinion Leaders, PTA, SMC members to have enough knowledge and skills in a situation whereby the management falls short in managerial system.
3. It also recommended that politicians should not politicise education in the country. They should therefore, realise that government alone cannot take full responsibility of education in the country. It is collaborative and participatory effort that will help government achieve quality education at all levels of the education system in Ghana.
4. The existing policies about community's role in education in the country should be strengthened.

REFERENCES

- Addae-Boahene, A. (2007). *Ghana: Aid effectiveness and the education sector: Implications for civil society* (1). Accra: Alliance.
- Ahiabor, F. (2017). *Assessing Community Participation In Improving Basic Education Delivery in the Gomoa East District, Central Region, Ghana*. Master Thesis. University of Cape Coast
- Attrams, D. (2012). *Assessing the delivery of education in Ghana: a case of Ejisu-Juaben Municipality*. Master's Thesis. Kwame Nkrumah University of Science and Technology, Kumasi, Ghana
- Baku J.K, and Agyeman D.K, (2002). Ghana in a transnational view of basic education: Issues of access, quality and community participation in West and Central Africa. *Educational Research Network for West and Central Africa (ERNWACA)* 2 (5)
- Berends, J.W. (2009). *Escaping the rhetoric: A Mongolian perspective on participation*
- Bray, M. (2000). *New resources for education community management and financing of*
- Chapman, D. and Adams, A. (2002). *The Quality of Education: Dimensions and Strategies*. Asian Development Bank . ADB Publication Stock No. 100701
- Colletta, Nat J. and Gillian Perkins. (1995). *Participation in Education*. Environment Department Papers. Paper No.001. Participation Series. Washington, DC: The World Bank. Commonwealth Secretariat. Hong Kong: Colourcraft Limited.
- Community Development Journal, 58 (7), 28-38.

The role of the community in Ghana

- Cornwall, A. (2008). Unpacking 'participation': Models, meanings and practices.
- Dale, R. (2000). Organisations and development: Strategies, structures and processes. district education strategic planning towards quality basic education: The case of
- Epstein, J.L. (1995). School/family/community partnerships. *Caring For the Children We*
- Griffin, D., & Steen, S. (2010). School-family-community partnerships: Applying Epstein's
- Harriet T., Anin E.K., and Yussif, K.A. (2013). The level of stakeholders' participation in the in rural development projects. Unpublished master's thesis, Department of Applied Science in International Rural Development, Lincoln University.
- International Consultative Forum on Education for All (2000) Statistical Document. Education for All Year 2000 . Paris: UNESCO Publishing.
- MacQueen, K. M., Eleanor, M., Metzger, D. S., Kegeles, S., Ronald, P., Scotti, R., Blanchard, L., and Robert T. T.,(2001). "What is Community? An Evidence-based Definition for Participatory Public Health." *American Journal of Public Health*91:1929-1938.
- Mayer, P. (2009). Guidelines for writing a review article. Zurich-Basel Plant Science Center. Retrieved from (http://www.plantscience.ethz.ch/education/Masters/courses/Scientific_Writing) on 5 September, 2019. New Delhi: Sage Publications Ltd.
- OECD (2012), *Equity and Quality in Education: Supporting Disadvantaged Students and Schools*, OECD Publishing
- OECD (2013). Education indicators in focus: education data education evidence education policy education analysis education statistics. 2013, 01 January. OECD Publishing, Paris
- Osei-Owusu, B and Sam, F. K. (2002). Assessing the Role of School Management Committees (SMCs) In Improving Quality Teaching and Learning in Ashanti Mampong Municipal Basic Schools. *Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS)* 3(5): 611-615
- Peters, R. S. (2010). *The concept of education*. Volume 17. Routledge & Kegan Paul Ltd in published in the Taylor & Francis e-Library, 2010. poverty. Lansdowne, South Africa. Juta and Company Ltd.
- Rabie,M. (2007). *Education and Social transformation*. Website: Yazour.com Salaga Town Council of Ghana. International Journal of Humanities and Social
- Scheepers, C. E., Wendel-Vos, G. C. W., den Broeder, J. M., van Kempen, E. E. M. M., van Wesemael,P. J. V., & Schuit, A. J. (2014). Shifting from car to active transport: A systematic review of the effectiveness of interventions. *Transportation Research Part A*, 70, 264–280.
- School Counseling, 13(4), 218-226. schools performance in the Narumba District of Ghana. Bergen: University of Bergen. Science, 3(14), 95-102.
- Shaeffer, S. (Ed.). 1994. *Partnerships and Participation in Basic Education: A Series of Training Modules and Case Study Abstracts for Educational Planners and Managers*". Paris:

Buah, Emmanuel and Akuffofrank Asah

- UNESCO, International Institute for Educational Planning. Share, 8 (6), 701-712.
- Swanepoel, H., and De Beer, F. (2006). Community Development: Breaking the cycle of theory of the six types of involvement to school counselor practice. Professional
- Uemura, M. (1999). "Community Participation in Education: What do we know?" HDNED. The World Bank
- Uemura, M. (1999). Community Participation in Education: What do we know?. The World Bank
- UNICEF (2000). Defining Quality in Education. A paper presented by UNICEF at the meeting of The International Working Group on Education Florence, Italy
- Williams, J.H. (1997). Improving School-Community Relations in the Periphery in Nielsen, H.D and W.K. Cummings, *Quality Education for All: Community-Oriented Approaches*. London/New York: Garland.
- World Bank, (2006). The effectiveness of community-driven development and community-based development programmes. Yorkshire: Operations Evaluation Department, World Bank.

The use of a digital learning system for developing pedagogical skills: ideas for research-based practice***¹Ruby Hanson & ²Emmanuel Kutorglo**^{1&2}Department of Chemistry Education,

University of Education, Winneba, Ghana

*¹maameruby@yahoo.com²ekutorglo@gmail.com

Abstract

This study involved five graduate teacher trainees at the University of Education (UEW), Ghana, who were on a summer programme. A Moodle Learning Management System, videos and micro teaching sessions were employed as support tools to provide and equip the graduate teacher trainees (trainees) with the needed pedagogical skills, while questionnaires, WhatsApp social media platform, and interviews were used to collect data to evaluate whether a digital learning system could provide learners with enhanced interaction modes to improve their pedagogical skills. This case study with an interpretive approach arose as a response to a need to avail more practice time and modern opportunities for teacher trainees to increase their practicum sessions for increased acquisition of pedagogical skills through a digital learning platform. Results indicated that the digital learning system increased active trainee-teacher interaction, trainee-trainee interaction and equipped the graduate teacher trainees with requisite pedagogical skills for professional development. An identified problem was lack of stable internet connectivity which was initiated mostly by power outages at the time of this research, but could be salvaged, with improvement in power supply. Recommendations for further improvement are suggested.

Key words: Digital learning system, pedagogy, pedagogical skills, teacher education

INTRODUCTION

Digital communication has become an indispensable part of everyday life, and is prevalent in higher education. It has become almost imperative to incorporate emerging technologies to help learners to develop 21st Century learning skills. Digital learning has changed the way people obtain knowledge and exchange information (Barber, King, & Buchanan, 2015; Blau & Shamir-Inbal, 2017). It allows learning to take place at any time and from anywhere (Ghadinan & Ayub, 2017). Online learning is a growing digital learning mode. This mode involves the use of Information Communication Technology (ICT) tools, digital contents and the internet to present information to learners and for learning. ICT among others is used to refer generally to the amalgamation of computer networks, audio-visual, and telephone networks through a single cabling or link system.

Many studies have shown the usefulness of employing the computer in education to create interactive communication platforms for permitting access to and expression of information in education (Hartley, 1988; Herga, 2016; Blau & Shamir-Inbal, 2017). With the evolution of computers and their networks, so much information and opportunities are now available, such that, even science laboratory activities can be performed virtually online; simulating perfectly what one will physically experience in a science laboratory. This has made it possible for scientist to try out otherwise 'dangerous' experiments in greater virtual safety compared to what Hanson (2014) proposes with the adoption of micro science equipment. In a similar vein, the art or pedagogy of teaching could use ICT so that learners not only have access to student-student and student-teacher interactions for theoretical work through ICT, but also for

pedagogical lessons and activities in a more connected manner.

In educational circles, ICT has been observed to be potent in forging collaboration, enhanced adult and self-learning, and has provided opportunities for people to learn and share information across the World Wide Web and among themselves in what is referred to in pedagogy as connectivism (Rowley & Hartley, 2008; Pineda Hoyers & Cano, 2016; Wright, 2015; Barber, King, & Buchanan, 2015). ICT enables teachers and learners to link other learning communities in diverse ways. It also enhances learners' motivation, links them to sources of information, and allows teachers more quality time for facilitation and reflection towards continuous professional development (Roblyer, Edwards, & Havrilule, 2004; Ghadinan & Ayub, 2017).

For people living in rural areas, the Internet provides access to services that may not be available in their own communities (Nsiah-Asante & Hanson, 2017). Digital environments provide both the technology and opportunity to liberate people from limitations imposed on them by geographical locations, disability, ethnicity, gender and age. Through such environments equity in education is ensured. Learners with working schedules or locations that make it difficult to access face-to-face learning can find these digital environments useful. They can experience blended learning programmes that combine face-to-face instruction with online components. Digital technology, will in such an instance, play a key role as a supporting pedagogical tool. In digital environments, learner autonomy can be promoted as these environments provide course content and a variety of learning styles which suit individual needs (Yang, 2006). Thus, the former 'all-knowing' teacher presence is not required as the teacher now serves only as a facilitator. In this vein, it will

The use of a digital learning system

be useful for trainees to learn many more pedagogical skills for effective facilitation, than the teacher training programme can avail.

The main aim of integrating technology in education is to assist learners to acquire skills and knowledge through interchange, interaction, and group work, as reiterated earlier. Such integration does not mean taking one's lesson, topic or curricula and uploading it and then using the computer to teach or display the information (Wang & Woo, 2007). ICT in education employs instructional methods such as simulations to enhance understanding of many conceptual and abstract phenomena. When used effectively, it engages learners in an exciting way so that learning becomes 'less burdensome'. It motivates and challenges learners' innate capabilities, so that knowledge construction and skills acquisition can be based upon tested assumptions (Hanson, 2014). Students thus develop desired reflective, process and concept skills. ICT generally allows students the freedom to explore the wealth of knowledge online at their convenience, even if unguided. Teaching in an online environment requires a proactive paradigm shift for teachers and students alike. In this wise, designers have a responsibility to ensure successful paradigm shifts. They should consider skill requirements, rights and responsibilities of teachers and learners, as well as online conduct and etiquette for a disciplined learning environment.

Integration of technology affords changes in pedagogy and content knowledge as teachers shift perspectives on what knowledge is valued and where the knowledge is obtained. It enables a focus on student-centred learning, with learners engaging in different tasks that are often inquiry-based rather than focused on a finite set of content points (Dickers, 2015).

Furthermore, it empowers students and reforms their ideas about education (Hanson & Nsiah Asante, 2014), especially when they are exposed to, and encouraged to engage in solving e-examples in their own time and space. Such integration could be made for full online learning or hybrid (blended) learning.

Blended learning is an amalgamation of the traditional face-to-face learning and 'full' online learning. Blended learning acknowledges the teacher-presence as it would in the traditional classroom. Yet, it accommodates the presence of a teacher as a facilitator, as expected in online learning. During face-to-face sessions, some topics might warrant that the teacher takes the stage to direct the pace of learning as he or she provides what students need to know. Though not the best, teacher-centred pedagogies might be adopted to make the achievement of curriculum objectives a reality. In a teacher-centred environment, a teacher equipped with requisite pedagogical skills is able to create and sustain an interactive classroom by acquiring a few basic ICT skills. Without coercion such a teacher is able to integrate e-learning in his lessons. It is for this reason and many more that this study sought to find out how ICT could be harnessed in the field of education, by particularly enabling prospective graduate teachers to acquire diverse pedagogical skills within a limited time frame of study.

E-examples (Houghton Mifflin Company, 2005) are developed by teachers to give students opportunities to practise and learn in active ways, through the use of internet so as to test their knowledge and thereby increase cognition. E-examples, like e-mail or e-commerce, are examples of concepts, principles and learning ideas transmitted over the internet. Such examples of exercises allow for self-studies during and outside class as well. These e-exercises or e-

examples can support active learning over a wide range as they expose students to variety of tests and learning formats. More interestingly, learners get immediate feedback. For teachers or facilitators, feedback is given in real or delayed time as desired. The maintenance cycle is short and distribution is easy. For teacher training institutions, e-teaching and learning appears to be an innovative and exciting way to change the face of teaching and learning; yet its use in teaching the acquisition of pedagogical skills is hardly researched in the Ghanaian community.

The University of Education, Winneba (UEW), which is a teacher training institution, has moved the majority of its lessons onto the virtual learning environment via a Moodle platform so that lessons are now carried out in a hybrid fashion. Students go online to do their own learning and interact with their teachers via the Moodle platform and occasionally come to class for face-to-face sessions. The purpose of moving classes online was to cater for its large student-base; particularly its summer school and distance education students. For purposes of clarity, the ‘summer school’ or ‘distance’ learners are those students who attend school on Campus outside the usual regular school sessions, while the ‘distance’ learners are those students who are ‘off-campus’ learners and visit their lecturers on campus once a while (during weekends) for face-to-face sessions. The introduction of the hybrid lessons on Moodle was also intended to enhance student-centred activities through collaboration, the application of technology, and to provide support to students on and off campus basically in their acquisition of content knowledge and theoretical pedagogical concepts. A critical analysis of the hybrid online courses indicated that undergraduate teacher trainees or prospective teachers did not benefit from the acquisition of practical pedagogical skills via the online

course. There were no embedded videos or opportunities in course descriptions for learners to co-create, perform or study virtual pedagogical teaching skills so that they could get acquainted with diverse teaching strategies and their effects. Thus, it was important after this analysis to find ways of incorporating online courses that could cater for deficiencies in teaching practice and the subsequent acquisition of state-of-the-art pedagogical skills in a contemporary world.

Pedagogy is the science of organising, delivering and managing educational instructional content to learners (Ileri, Omwenga, Oboko, & Wario, 2017). In order to execute effective pedagogical skills in one’s class as an initial or beginning teacher, one must be exposed to existing or possible practices in diverse environments. Upon such an exposure, teachers imbibe skills for practice and make renditions of them, even when they cannot create novel pedagogies of their own. Best teaching practices truly depend on one’s own teaching pedagogies and acumen; thus, ‘good’ teachers are those who are able to use different teaching pedagogies for different categories of learners. This acumen is what UEW strives to inculcate into its graduate teacher trainees or initial teachers. More importantly, such a ‘good’ teacher is able to connect his acquired subject/discipline knowledge, available resources, students’ prior knowledge and new content to be learned integratively. Thus, to create such a ‘good’ teacher, a prospective teacher must be exposed to good class management, how to manage other everyday classroom routines effectively, and other issues like the inclusion of equity and inclusivity, as well as the pros and cons of diverse pedagogies like the teacher-centred, learner-centred, learning-centred and new pedagogies that could arise. Through these and the use of technology, effective pedagogical skills would be cultivated by teacher trainees (herein also referred to as

The use of a digital learning system

prospective teachers or simply trainees) (Amusan, 2016).

RATIONALE

A few studies have looked at how to integrate ICT into various disciplines to enhance economic benefits (Matei & Vrabie, 2013). Others have assessed how to enhance conception through e-lab activities (Hanson, Antwi, & Ayim, 2017), while a handful of researchers have studied how to use ICT to improve academic achievement (Yang & Yenb, 2016). Some researchers have further assessed the development of ICT into the hybrid mode for innovative ways of teaching (Hanson, 2014). Part of the rationale behind this current study was to address the non-integration of the acquisition of pedagogical skills with ease in online courses and to see if graduate teacher trainees who enrol on such online-integrated pedagogical practice classes could maximise their study and practice time through an online course. That is, it was also to address time constraints with practicum sessions, allow for the review of the entire graduate sandwich course content for GDSc 516, and make students have the convenience of working at home, as well as initiate independence in solving problems (Blau & Shamir-Inbal, 2017). It further sought to explore, design and evaluate the Moodle platform as a support tool for graduate sandwich students to improve on their pedagogical skills in the face of constraints in time and space.

Sandwich students are those who enrol in courses during the summer holidays, and outside the regular school session. This study was premised on the fact that collaborating and sharing experiences is important for professional development. Learning to teach, reflecting on one's own performance as well as that of others, and discussing them dispassionately, could enhance professional development and one's

growth in their acquisition of pedagogical skills. Thus, synchronous and asynchronous modes of presenting information to learners were adopted in the hybrid course.

OBJECTIVES

1. To integrate ICT as a support tool on a digital learning platform to enhance the pedagogical skills of graduate teacher trainees
2. To research into the professional development that the integration of ICT could offer the graduate learners.
3. To determine the extent to which the innovative Moodle platform could improve the graduate teacher trainees' principles and practice of teaching and assessment?
4. To determine the impact of the integrated ICT on students' pedagogical skills development.

RESEARCH QUESTIONS

1. How would the integration of ICT as a support tool act as a digital learning platform that would enhance the pedagogical skills of graduate teacher trainees?
2. What professional development would the integration of ICT offer the adult graduate pedagogy learners?
3. To what extent would the innovative tool (digital Moodle learning platform) improve on the graduate teacher trainees' principles and practice of teaching and assessment?
4. What would be the impact of the integrated ICT on students' pedagogical skills development?

WORKING HYPOTHESIS

Open software is cheap, readily available, and flexible for self-tutoring in all environments. The model for designing the integration of ICT into the pedagogy course titled GDSc 516 (Principles and Practice of Teaching and Assessment of science at the Junior High School) was simple and sequenced. It allowed the designers to construct their e-content on an appropriate Learning Management System (LMS) to include resources and activities. The provision of academic and technical help was made a core need for each lesson. The Moodle platform was the researchers' choice of LMS as it was easy to use and could be easily accessed online. Besides the said, the Analyse, Design, Develop, Implement and Evaluate (ADDIE) instructional design for building instructional models and course content was employed (Branch, 2009).

METHODOLOGY

This research was a single case study with an interpretive approach to data analysis as it focused on an attempt to increase the acquisition of pedagogical skills in a collaborative and co-regulated environment through the use of ICT. The research approach was a case study as it allowed the researchers to explore and analyse a course for graduate teachers under training, in order to answer set questions. Thus, a courseware was developed to this effect. The courseware had to accommodate all the required components for effective teacher training - the cognitive, professional, and social aspects so the courseware was mapped against these components. It was also to develop innovative, quality, interactive and engaging learning platforms that are based on national teaching standards, and to strengthen the teaching and learning process so as to produce holistic balanced graduates. To begin with, course manuals were analysed and

developed (using the ADDIE model) as a prerequisite to building the e-content/ lesson. The analysis phase of the integration of ICT to teach the acquisition of pedagogical skills was carried out the year before its current integration. Total available hours for the e-content were calculated and apportioned over teacher usage-time, students' expected usage-time, and collaborative activity time. This was to ensure that activities would be interactive as expected and not overloaded. Some of the activities that were embedded into the online courseware were threaded discussions in a form similar to a traditional classroom: chats, teacher lectures, videos, and reflective journals.

Online lecture notes were also developed for the lessons. Web links and e-activities were embedded within the lessons and notes. Some of these were synchronous while others were asynchronous. Within all these activities, Gagne's nine events of instruction were followed to ensure that students' attention would be gained: they would be clearly informed about the objectives, present adequate stimulus to whet their appetite to read more or engage in the designed activities and above all enhance retention (Gagne, Briggs, & Wagner, 1992). These principles were developed by Gagne, to enable teachers to present their lessons in a systematic and engaging manner. An in-built system recorded how often students visited the site. Activities that they turned in online on their pedagogical skills development were assessed within the shortest possible time with comments, and posted through online back to them for improvement and encouragement. Through this iterative process the course content, instructional materials, and student learning were assessed by illuminative evaluation (Branch, 2009; Kirkpatrick, 1994).

After building the courseware a discussion session on how to interact with the

The use of a digital learning system

website was organised for the trainees before they began using the courseware. They were taught how to log on to the website, and edit their profile which was a requirement, upload/download images, videos and word documents as well as what the names of the various icons that they would engage with were. These were necessary for the practical aspect of their course, where they were expected to make and upload short videos on the introduction, development and concluding parts of lessons and reflect on them. The students were expected to exchange videos of their personal teaching strategies, narrate innovations that were embedded and critique each other's videos; stating their observed strengths and weaknesses. Some of the specific activities and tools embedded in the courseware required the use of skype, videos, chats, or a reflective journal and WhatsApp.

Data obtained through open questionnaires and interviews from students was analysed descriptively into experiential themes in order to highlight the strengths and weaknesses of the integrated pedagogical skills. Students' responses that bore apparently similar ideas were put together under a theme that bore the common idea. This was done for all the obtained responses.

RESULTS

Table 1

Students' observations on the use of the Moodle platform in learning

	Students' positive opinions	Students' challenges
1.	Increased engagement with course content	Meeting timelines
2.	Exposure to variety of learning materials	Inadequate ICT skills
3.	ICT competence enhanced	Interruption in internet supply

The main aim of this study was to assess the potential of ICT in developing pedagogical skills and to present a framework for a protracted online development of practical teaching skills for professional development (Kirkpatrick, 1994; Kirkpatrick & Kirkpatrick, 2017). It was also to find out if the new learning environment would impact positively on the students' acquisition of the required principles and practice of teaching. Questionnaire, informal observations and informal classroom discussions with the students indicated that there were a few misgivings about the new learning e-environment as learners were more used to the traditional face-to-face mode of tuition. Two of them though had training in the use of computer for accessing information for academic work. Nonetheless, they did not make use of what they learned to search for course-related literature. None of the graduate teacher trainees had any idea about learning management systems (LMS) though their institution had several undergraduate and a few graduate courses online. Thus, the LMS that had been adopted by UEW, the Moodle, was introduced to the students as the platform on which some of their course content was built on.

Table 1 shows some of the observations that students made and reported on in their answers to questionnaire items.

Ruby Hanson and Emmanuel Kutorglo

4.	Vivid images increased conception	No challenge identified
5.	Collaboration was enhanced	No challenge identified
6.	Communication skills improved	No challenge identified
7.	Exposure to different pedagogical skills	No challenge identified
8.	Research skills enhanced	No challenge identified
9.	Enhanced reflection	No challenge identified
10.	Enhanced cognition	No challenge identified

From Table 1, it can be seen that trainees mostly provided positive feedback on their use of ICT as a tool to enhance their pedagogical skills. The positive opinions outweighed their challenges. However, one challenge that was beyond their control and that of the tutors was interruption in internet supply due to power failure. It could have had an impact on their submission of assignments with timelines.

Though one of the trainees was pessimistic about the success of the teaching and learning electronic platform (Moodle) for the course of study initially, he later came to appreciate its relevance in how it fostered collaboration and provided real time learning in one's own space and time at the end of the study. He was initially sceptical about how they could learn to develop pedagogical skills by watching other people teach in videos. He was familiar though with YouTube. These trainees expressed more positive and less sceptical views when questions similar to the questionnaire were posed. Two other trainees indicated that the e-learning mode helped them in acquiring more skills in the use of technology, while the remaining two were non-committal. One of the two non-committal trainees had lessons that were a mismatch between his philosophy and attested pedagogical skills. He clearly had

difficulty in translating his prepared lessons into reality either in online video demonstrative practice or face-to-face practice. He had never had the chance to practice any teaching skills at all before enrolling on the course, he said. This might have accounted for his initial grave challenges. All the trainees, including the one who had initial grave challenges, admitted in an interview at the end of the course, with excitement, the fact that the e-learning platform had actually given them the opportunity to pursue their education in a less constrained environment. Their perspectives, as obtained from the interview are given below.

1. The digital platform created an environment free from constraints as iterated by Yang and Yenb (2016) in a similar research.
2. Students intimated that the study materials were clear and concise (Hanson, 2014).
3. Students had flexible work times; deadlines were met in accordance with the online schedule as there was a time count attached to tasks for tasks to be handed in. Beyond that time, the submission window would

The use of a digital learning system

close so that no late submissions could be posted.

4. Students experience an amount of independence in their study and ownership of the course, as they also made vast contributions to daily activities and interacted adequately with the Moodle platform.
5. There was a sense of familiarity and easy access to the lecturer (Hanson & Nsiah Asante, 2014).
6. There was immediate response to challenges at all times
7. Lessons were more student-centred rather than teacher-centred (Dikkers, 2015).
8. They experienced a provision of diverse and rich experience (Hanson, Antwi, & Ayim, 2017).
9. Real time discussions were experienced without constraint (Herga, 2016).
10. Real time presentation of teaching skills was made possible without physically being present in class.

The above thematic deductions from students' feedback on the innovative way of helping them to acquire pedagogical skills in a more contemporary way demonstrate some of the advantages that the trainees gained from their engagement with the Moodle platform.

Further opinions from the interview sessions about the e-learning platform were:

1. It increased creativity.
2. It helped to incorporate new teaching strategies which could easily be

analysed and altered with ease, if found to be inappropriate.

3. It gave a sense of ownership and increased their competence.
4. It also provided exposure to alternative assessments and presentation modes.
5. It increased the acquisition and demonstration of in-depth technological pedagogical skills.
6. In all, their expectations were largely met.

The few problems encountered by the graduate teacher trainees were pedagogical and technical issues and not so much a content issue. That is, they displayed difficulty with pedagogical skills required for their introduction and closure of lessons and experienced a few technical hitches on the smooth and regular provision of internet by their internet service providers. They did not report on any technical challenges with their laptops and computers. One trainee was observed to have grave problems with the introduction of his lessons and employed inappropriate teaching strategies for most of his lessons when the practice teaching began. This trainee who had mismatched lessons and professed pedagogical skills advanced in his use of technology, and learned how to introduce, develop and close his lessons towards the end of the study period, through practice and watching other colleagues do so appropriately and innovatively online.

DISCUSSION

This section unravels the benefits that the graduate teacher trainees gained from assessing pedagogical models and skills online, and integrating them into their own lesson and assignments. It also discusses the

possibilities of how prospective teachers who engaged in this study will carry these acquired technological pedagogical skills on into the future; demonstrating the translation and extension of learning. From the data gathered, it was evident that the principles and practices of teaching and learning could be developed and studied as an online course through proper needs assessment and design. Analysed responses from the questionnaires indicated that teachers could purposefully produce videos of some of their own best teaching practices and make students watch them online in class so that they become aware of different teaching styles and best pedagogical practices. More importantly, videos of other colleague prospective teachers who have exhibited excellent teaching and management skills as well as those that had weaknesses could be analysed as projects by prospective teachers, so that they reflect on the diverse presentations and build their own best practical initial pedagogical skills.

In this current study, not only did the graduate students learn about engaging with an online platform, but also learned how to integrate technology into their lessons on Moodle or e-learning platforms to facilitate the acquisition of needed pedagogical skills for their teaching careers. The platform availed an environment that trainees successfully engaged in online discussions about diverse methods of teaching, students' different learning styles, the uniqueness of each learning style, different teaching styles that could cater for such differences, equity and inclusivity, classroom management, assessment and many more as discussions were held through fora, chats, WhatsApp, sms and emails. Through the reflective online journals, the trainees could reflect on the strengths and weaknesses of the three variables of teaching and learning- the teacher, the student and resources or equipment and how to manage them for best

results. From their own submissions in the interview sessions, the more they reflected on these key factors, the more they tended to understand the various characteristics of each of these and how they interacted intricately.

In order to ensure that pedagogical skills were gained in the practicum or practical sessions, one session for each trainee was thoroughly critiqued through analytical and reflective face-to-face sessions. After that each of the five students had to prepare and present three (5-minute) sessions of introductions to lessons, three (10-minute) sessions of lesson development and three (5-minute) concluding sessions for given topics. Furthermore, each student had to prepare two (30-minute) full lessons. In the full lessons, objectives were well written and achievable. Good instructional skills were developed, as observed from recorded videos. The display of appropriate instructional and communication skills from the videos showed the extent of professional development and the acquisition of these skills by the students. The researchers' assessments of these professional developments were corroborated by personal reflections and reflective comments from students. These interactive activities to assess the impact of teaching pedagogy through blended learning were mostly done online as students were more comfortable accessing it this way.

During the face-to-face sessions, the researchers commented on important skills that required improvement by each of the students. The digital platform allowed for many more presentations of lessons and acquisition of skills for professional development than would otherwise have been attained through face-to-face or on-presence interactions only. This observation augments what Yang and Yenb (2016) also found in a study about students' perspectives of the use of e-learning in higher education, that more

The use of a digital learning system

time was made available for discussions because students were able to execute their online tasks with ease and in relatively shorter times. A similar observation was made by Hanson (2014) when micro chemistry activities were integrated into e-learning. Students in that study carried out more activities than they would have in the traditional mode, and therefore made higher cognitive gains. She noted that instructional support was necessary for managing student presentations and experimental reports which was doubled, as compared to the traditional mode. In the same vein, teacher trainees would require maximum support if pedagogical skills are to be learned and practised through virtual modes for such similar overt gains. This would eventually help them to develop professionally faster, as they sharpen their technological, content and pedagogical skills online.

The students intimated in their interview sessions that the integrated pedagogical course and ICT in general presented many positive prospects for enhanced learning, class management and assessment. Not only did they acquire the desired pedagogical skills but had gained incidental learning and transferrable skills for lifelong learning. They emphasised that they had personally acquired skills to integrate ICT into their science teaching at the lower secondary level (junior high school), besides content knowledge. In addition, they acquired skills for academic writing, presentation, communication and collaboration. Other incidental skills that they stated they had developed were writing, editorial, video making, and photography skills. Students' opinions about the integrated pedagogical programme proved to be largely positive. According to Dikkers (2015) the intersection of online and face-to-face sessions in teacher training programmes could lead to professional development.

The trainees' responses to questionnaire and their opinions were found to be in line with what Hanson and Nsiah Asante (2014) discovered when students' views were gathered about the integration of ICT into lessons. They attested to the benefits of dynamic visualisation, which is congruent with Herga's (2016) study results. Integrating teaching and learning with technology draws learners' attention to important requirements in classroom lesson preparation and teaching, and motivates them to greater heights, as their sense of curiosity spurs them on. They added that seeing their own recorded online teaching practice and demonstration of pedagogical skills enabled them to become more aware of their strengths and weaknesses. It enabled them to reflect on their actions better, which eventually led to the acquisition of better teaching practices. This activity helped them to develop their teaching skills continuously and professionally as their responses helped to improve the small learning group's engagements. A lot of incidental learning was acquired, as opposed to what would ordinarily have been acquired without online technologies. They learned to collaborate as they co-created, co-reflected, sought for and compared ideas through trainee-trainee interactive reflections.

One other important gain that was made in this study, but was subtle, was the vast volume of content, hands-on and minds-on, communal, and pedagogical practice work that was made possible within the regular teaching period in the semester (Blau & Shamir-Inbal, 2017). This was made possible because trainees had to prepare videos of their teaching acumen out of class, share the videos and discuss them before coming to class for a whole-class discussion on their teaching practices and skills. Evidence of having engaged in such practices were assessed before the whole class discussions. This gave them the opportunity

to work on their videos again for improvement and incorporate suggestions and other feedback from their colleagues before final presentation in a face-to-face class. This meant that the trainees had more practice and time for discussion for professional development, in addition to the regular sessions stipulated on their timetable (Ghadinan & Ayub, 2017). Very little of the regular tuition hours were used in preparing for live practice teaching. Besides, the preparatory periods that were needed for the changeover (transition) of one presenter of a lesson to the other became a thing of the past, as the recorded video lessons were shown on a screen for discussion, critiquing and feedback, without waste of time. In other words, the transition between one presentation of a trainee's lesson and the other occurred smoothly as they had all been practised and videoed out of the regular class session. Altogether, the trainees were able to gain learning skills such as video making, critiquing, analysing, constructing, processing of information, the use of the computer for literary works and lifelong skills such as collaboration, tolerance, honesty and respect for one another. These are some of the very important skills that are required for successful continuous professional development.

CONCLUSION

Findings from obtained data suggests that the use of digital educational technology improved among the researchers and graduate teacher trainees alike. The design focused on engaging teacher trainees with each other, the content, the instructors, pedagogical skill practice and acquisition in a novel way. The researchers, who already had ICT experience, improved on their expertise in designing and developing the e-course using instructional design principles. Knowledge in andragogy was an added benefit gained by the researchers, so that the

learning needs of working adult category of learners could be provided for by them in their future teaching careers. The researchers' illuminative evaluation skills also improved as they worked with the trainees, observed them and assessed the development, use and unobtrusive impact of an e-course tool within its operational milieu.

The integration of ICT as a learning support tool enhanced the graduate teacher trainees' learning of computer skills, the course content, collaborative skills, as well as pedagogical skills. It was clear by the end of the study session that almost all the trainees developed professional teaching skills, since they learned many ethical values of professional teachers that they were hitherto not aware of. To a large extent, the videos that they made and watched in class improved their personal, co-creation, co-regulatory, and group practical skills. They furthermore developed research skills and better conceptual models of many pedagogical skills which helped to improve their technological pedagogical content knowledge for professional growth. The dedication of the researchers was one important factor that saw the completion of this study to the end. It could therefore be concluded that the integration of ICT into teacher training courses, such as GDSc 516, to enable the development of pedagogical skills for professional growth is feasible and most beneficial as it saves teaching time and allows for more practice than could otherwise have been possible in a traditional face-to-face class. Besides, it enables prospective teachers under training to develop several learning skills for continuous professional development.

REFERENCES

- Amusan, M. A. (2016). Cultivating effective pedagogical skills in in-service teachers: The role of some teacher

The use of a digital learning system

- variables. *Journal of the International Society for Teacher Education*, 20(1), 83-89.
- Blau, I., & Shamir-Inbal, T. (2017). Re-designed flipped learning model in an academic course: The role of co-creation and co-regulation. *Computers and Education*, 115, 69-81.
- Branch, R. M. (2009). *Instructional design: The ADDIE model*. New York: Springer.
- Dikkers, A. G. (2015). The intersection of online and face-to-face teaching: Implications for virtual school teacher practice and professional development. *Journal of Research on Technology in Education*, 47(3), 139-156.
- Gagne, R., Briggs, L., & Wagner, W. (1992). *Principles of instructional design* (4th ed.). Fort Worth, TX: HBJ College Publishers.
- Ghadinan, H., & Ayub, A. F. (2017). Peer moderation of asynchronous online discussions: An exploratory study of peer e-moderating behaviour. *Australasian Journal of Educational Technology*, 33(1), 1-18.
- Hanson, R. (2014). The impact and challenges of integrating micro chemistry experiments into e-learning. *International Journal for Cross-Disciplinary Subjects in Education, Special Issue 4*(1), 1884-1892.
- Hanson, R., & Nsiah Asante, J. (2014). An exploration of experiences in using the hybrid Moodle approach in the delivery and learning situations at the University of Education, Winneba, Ghana. *Journal of Education and Practice*, 5(12), 18-23.
- Hanson, R., Antwi, V., & Ayim, G. (2017). The potential of integrating ICT into the teaching and learning of chemical bonds in senior high schools in Ghana- A case study. *International Journal of Scientific Research in Science and Technology*, 3(3), 198-210.
- Hartley, J. R. (1988). Learning from computer based learning in science. *Studies in Science Education*, 15(1), 55-76.
- Herga, N. R. (2016). Virtual laboratory in the role of dynamic visualisation for better understanding of chemistry in primary school. *Eurasia Journal of Mathematics, Science & Technology Education*, 12(3), 593-608.
- Houghton Mifflin Company. (2005). *The new dictionary of cultural literacy*. NY, USA: Mifflin Company.
- Ileri, B. N., Omwenga, E. I., Oboko, R., & Wario, R. (2017). Developing pedagogical skills for teachers: A learner-centred approach for technology supported instructions. In J. Keengwe, & G. Onchwari (Eds.), *Handbook of research on learner centered pedagogy in teacher education and professional development* (pp. 128-144). North Dakota: IGI Global Publishers.
- Kirkpatrick, D. L. (1994). *Evaluating training programs: The four levels*. San Francisco: Berrett-Koehler.
- Kirkpatrick, J. D., & Kirkpatrick, W. K. (2017). *Kirkpatrick's four levels of training evaluation*. San Francisco, CA, USA: Association for Talent Development.
- Matei, A., & Vrabie, C. (2013). E-learning platforms supporting the educational effectiveness of distance learning programme: A comparative study in administrative science. *Procedis-social and Behavioural Sciences*, 526-530.
- Nsiah-Asante, J., & Hanson, R. (2017). ICT in distance education. *International Teacher Education Conference (ITEC 2017)*. Harvard University, Boston, Massachusetts: TOJET.

Ruby Hanson and Emmanuel Kutorglo

- Pineda Hoyers, J. E., & Cano, L. H. (2016). E-moderating and e-tivities: The implementation of a workshop to develop online teaching skills in in-service teachers. *Profile Issues in Teachers' Professional Development*, 18(1), 97-114.
- Roblyer, M. D., Edwards, J., & Havrilule, M. A. (2004). *Integrating educational technology into teaching* (4th ed.). Upper saddle River, N J. USA: Prentice hall.
- Rowley, J., & Hartley, R. (2008). *Organising knowledge: An introduction to managing access to information*. Burlington, VT, USA: Ashgate Publishing Limited.
- Wang, Q., & Woo, H. L. (2007). Systematic planning for ICT integration in topic learning. *Educational Technology and Society*, 10(1), 148-156.
- Wright, P. (2015). Comparing e-tivities, e-moderation and the five stage model to the community of inquiry model for online learning design. *The Online Journal of Distance Education and e-Learning*, 1(1), 17-30.
- YangJ.-Y., & Yenb, Y.-C. (2016). College students' perspectives of E-learning system use in high education. *Asian Journal of Education and Training*, 2(2), 53-62.
- Yang, S. (2006). Context aware ubiquitous learning environment for peer to peer collaborative learning. *Educational Technology and Society*, 9(1), 188-201.

LIST OF REVIEWERS

1. Mr Hlavisio Albert Motlhaka (University of Venda)
2. Dr Tshimangadzo Sikhwari (University of Venda)
3. Dr Sias Tsotetsi (University of Free State)
4. Dr Busisiwe Ndawonde (University of Venda)
5. Prof Alpheus Masoga (University of Venda)
6. Dr Luyanda Marhaya (University of Zululand)
7. Dr Victor Mathobela (University of Free State)
8. Dr Norman Rudhumbu (Botho University: Botswana)
9. Ms Nkensani Maluleke (University of Zululand)
10. Dr Patricia Muhuro (University of Fort Hare)
11. Prof T Rhunhare (University of Venda)
12. Prof M Kurebwa (Zimbabwe Open University)
13. Prof R.A Chabaya (Zimbabwe Open University)
14. Prof Clever Ndebele (North West University)
15. Dr T Bengu (University of Kwazulu Natal)
16. Dr J Matunhu (Midland State University)
17. Dr E Mutekwe (Vaal University of Technology)
18. Dr S Machingambi (University of Mpumalanga)
19. Prof V Chikoko (University of Kwazulu Natal)
20. Prof L Makondo (Durban University of Technology)
21. Prof K Milondzo (University of Limpopo)
22. Prof C Chiome (Zimbabwe Open University)
23. Prof S Rembe (University of Fort Hare)
24. Prof P Gwirayi (Great Zimbabwe University)
25. Prof S Mogane (University of South Africa)
26. Dr GT Ndamba (Great Zimbabwe University)
27. Prof Dumbu (Zimbabwe Open University)
28. Dr Mufanechiya (Great Zimbabwe University)
29. Dr L Mandiudza (Great Zimbabwe University)
30. Ms ES Gudhlanga (Zimbabwe Open University)
31. Prof L Nyaruwata (Great Zimbabwe University)
32. Dr I Mute (Great Zimbabwe University)
33. Dr Rubby Dhunpath (UKZN)
34. Prof Labby Ramrathan (UKZN)
35. Prof Michael Samuel (UKZN)
36. Dr Daisy Pillay (UKZN)
37. Dr Kathleen Pithouse-Morgan (UKZN)
38. Dr Miranda Swart (UKZN)
39. Dr Jaqueline Naidoo (UKZN)
40. Dr Nonhlanhla Mthiyane (UKZN)
41. Dr Saras Reddy (UKZN)
42. Prof Sarojini Nadar (UWC)
43. Prof Hyleen Mariaye (Mauritius Institute of Education)
44. Prof Saloshna Vandeyar (University of Pretoria)
45. Dr Thiru Vandeyar (University of Pretoria)
46. Ms Reshma Subayye (UKZN)
47. Ms Nomkhosi Nzimande (UKZN)

Ruby Hanson and Emmanuel Kutorglo

48. Dr Lungile Masinga (UKZN)
49. Dr Jaya Naidoo (UKZN)
50. Dr Laura Campbell (UKZN)
51. Dr Vino Paideya (UKZN)
52. Prof Maheshvari Naidu (UKZN)
53. Prof Randhir Rawatlal (UKZN)
54. Prof Chatradari Devroop (UKZN)
55. Prof Renuka Vithal (UKZN)
56. Dr Carol Bertram (UKZN)
57. Dr peter Rule (UKZN)
58. Dr Vaughn John (UKZN)
59. Dr M Letsoalo
60. Ms M Modipane

INSTRUCTIONS TO AUTHORS

- The submission must be e-mailed to aportal.journal@ul.ac.za and addressed to: The Editor, African Perspectives of Research in Teaching and Learning
- **ARTICLES:** Must be original, previously unpublished research and is not under consideration for publication elsewhere.
- **MULTIPLE AUTHORSHIP:** In cases of multiple authorship, all authors must have materially participated in the research and/or article preparation. The statement that all authors have approved the final article should be true and be included in the disclosure. One author must be designated as the corresponding author with full contact details: Affiliation, E-mail address, Postal address, Telephone number.
- **WORD LIMIT:** Manuscripts no shorter than 5 000 words and no longer than 6 500 words, excluding footnotes, tables, figures and references, will be accepted.
- **ABSTRACT:** An abstract of 200 words with a maximum of six key words presented alphabetically.
- **NON-WORD REPRESENTATIONS:** All figures, tables and art citations in the text must match the files provided.
- **REFERENCE STYLE:** APA 6th. Ensure that all references mentioned in the Reference List are cited in the text, and vice versa.
- **TITLES** should not be longer than 15 words
- **FORMAT:** Text should be set in New Times Roman font, 12 point in size with 1.5-line spacing. Sections should not be numbered. Ideally manuscripts will comprise of the following/some of the following sections: Introduction, Background, Method, Results, Discussion, Conclusion, Acknowledgements, and References, in that order. The creative use of headings for sections on Method, Results and Discussion, is encouraged
- **LANGUAGE OF COMMUNICATION:** Only manuscripts written in English will be accepted. All communication between author/s and editor/s will be in English.
- **EDITED MANUSCRIPT:** Manuscripts must be accompanied by a letter indicating that the text has been edited by a certified language practitioner. Colloquialisms, idiomatic, sexist and racist use of language should be avoided.
- **RESEARCH ETHICS:** A brief description of the ethics guiding the research process should be included in articles that report on empirical findings. All forms of plagiarism are prohibited, including paraphrasing without proper acknowledgement.
- **COPYRIGHT:** Authors retain copyright over manuscripts. Authors must ensure that permission has been obtained for use of copyrighted material from other sources (including the Internet).
- **DISCLOSURE OF INTEREST:** Relevant declarations of interest must be declared. All authors are requested to disclose any actual or potential conflict of interest including any financial, personal or other relationships with other people or organizations which could inappropriately influence, or be perceived to influence, their work.
- **REVIEW POLICY:** Each article will undergo a double-blind peer review process. This means that each manuscript must be prepared for the blind review by removal of all identifying information (name, affiliation etc.). Replace all references to the author in the main paper with "Author, 2011", "Author et al, 2015", etc. In the reference list, use the

Ruby Hanson and Emmanuel Kutorglo

format "Author 2011 [details removed for peer review]". Papers that have not had all such features removed will be returned without review to the author for alteration.

- **MANUSCRIPTS REVISIONS:** Any further revisions should be submitted within 30 days or it will be regarded as a new submission Acknowledgements) should not include any identifying information, such as the authors' names or affiliations.

- **PROCESSING FEES**

The following processing fees shall be paid once the article has been accepted for publication: Local-R4500.00 and international-\$300