Journal

JOURNAL OF EDUCATIONAL RESEARCH ON CHILDREN, PARENTS & TEACHERS

Message from the Editor-in-Chief

The journal publishes a broad range of papers from all branches of education relating to childhood, parents and teachers; including but not limited to curriculum, primary and secondary education, higher and adult education, and teacher education.

The Journal of Educational Research on Children, Parents and Teachers is an Interdisciplinary outlet for transformative engagement with research findings that implicate policy and practice within the domain of the educational development of children as well as the impacts of both the parents and teacher practices. For this reason, the journal publishes a broad range of papers from all branches of education relating to childhood to early teens, parents and teachers. Papers that feature curricula developments in the primary, secondary and teacher education are also published by this journal.

It will be pleasant to learn that from 1st January 2020, the Journal of Educational Research on Children, Parents and Teachers becomes a no fees journal outfit under the sponsorship of the African Educational Research and Development Foundation, which is based in South Africa.

EDITOR-IN-CHIEF
Prof. Chinedu I. Okeke
Head: School of Education Studies
Faculty of Education
University of the Free State
Bloemfontein 9301, South Africa

ARTICLES

Assessing basic mathematical abilities of grade four learners: A constructivism perspective

Godfrey Mukelabai MOOKA
Mufulira College of Education
Department of Education and Professional Studies
Zambia

Brighton KUMATONGO
Kitwe College of Education
Department of Education and Professional Studies
Zambia

Abstract
Learners in Zambian primary schools learn mathematics as one of the core curricula subjects. It is cardinal for learners at primary level to exhibit basic mathematical skills which are a prerequisite for acquiring skills in complex mathematical abilities. A descriptive case study guided by Jean Piaget's theory of cognitive development anchored on constructivism paradigm was used as research design. The study comprised of 8 learners (4 boys and 4 girls) in grade 4 aged between 10 and 13 who were purposively sampled. The Basic Numerical and Calculation Abilities Test were administered to learners. The findings were that generally, learners demonstrated satisfactory performance in number skills and exhibited challenges on arithmetic skills. The study concluded that learners had problems with calculations, an indication that learners experienced challenges with fluent skills in single digit calculations, number system and calculation algorithms. The study recommended the need to expose learners to activities that enhance digit calculations, number system and calculation algorithms as well as for teachers to use activities that promote multisensory approach when teaching basic mathematical skills to enable learners grasp mathematics skills at primary level.

Keywords*: Assessment. Cognitive. Constructivism. Mathematical skills.*

Introduction
The Zambian primary school curriculum just like most African countries was revised from a content-based curriculum to a competency-based (CBC) or Outcome-based curriculum (OBE) (Mulenga & Kabombwe, 2019). The rationale for the revision of a curriculum was to make it more effective and responsive to societal needs by providing relevant knowledge, skills and real-life competencies for the learners. The 2013 revised Zambian curriculum aims at producing self-motivated, life-long learners, confident and productive individuals, holistic, independent learners with the values, skills and knowledge to enable them to succeed in school and in life (Mulenga & Kabombwe, 2019). It is hoped that exposing learners to such a curriculum may enable learners acquire skills and knowledge for independent living(Ministry of Education Science Vocational Training Early Education (MESVTEE,2013), positive contribution to society and equalisation of opportunities for all, in that a competency-based curriculum seeks to develop higher order thinking in learners and includes all the four higher levels of Blooms Taxonomy, that is; application, analysis, synthesis and evaluation (MESVTEE,

2013). Higher order of thinking in learners does not occur abruptly, but through gradual following the cognitive developmental stages. Based on constructivists' perspective, learners are capable of utilising their cognitive abilities to understand their world.

Mathematics is one of the core curricula subjects taught at primary level in the Zambian school curriculum (MESVTEE, 2013). Mathematics is viewed as a language of individuals who wish to express ideas of shape, quantity, size and order Dunphy et al. (2014) and is used as a means of describing the growing understanding of the physical universe, to facilitate the transactions of the market place, and to analyse and understand the complexities of modern society (Dunphy et al., 2014).However, studies have indicated that performance of learners in mathematics at primary level has not been good in Zambia. The Ministry of Education reported that performance in mathematics among the Zambian learners has been poor and encouraged early grade assessment in mathematics and other subjects (MESVTEE, 2015). The National Assessment Survey (NAS) design to analyse the performance of learners in a curriculum area in Zambia conducted an assessment at Grade 5 level, which is the beginning of the Middle Basic Education in the basic Education System and reported a national mean performance of 39.4 percent in Mathematics in 2008 (Lufunda, 2012; MESVTEE, 2015). Zambia National Education Coalition (ZANEC, 2012) reported the poor performance in mathematics among learners at primary level, the performance which was also depicted in the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) III results published in 2011 (ZANEC, 2012). The low trend performance of learners in mathematics based on Early Grade Mathematics Assessment (EGMA) has been consistent (ZANEC, 2012; Examination Council of Zambia, 2013).

Statement of the problem

The reported low performance in mathematics at lower grade levels by the Ministry of Education based on National Assessment Surveys and SACMEQ reports did not indicate particular mathematical abilities of concern, hence the need to analyse learners' performance on various mathematical tasks to ascertain particular areas of strength and /or concern.

Theoretical framework

Jean Piaget (1896-1980) is one of pioneers of constructivism and theory of cognitive development. Piaget (1936) was the first psychologist to make a systematic study of cognitive development (McLeod, 2018). Constructivism is based on the premise that learners actively construct their own understanding by fitting the perceptions of the world into their existing knowledge and understanding. From constructivism perspective, learning occurs in individuals after they have gaining experience and/or understanding from what they learn. Some of the proponents of constructivism include; John Dewey (1859–1952), Lev Vygotsky (1896–1934) and Jerome Bruner (1915-2016). Despite various proponents contributing to the understanding of constructivism as a philosophy, scientists and philosophers such as Dewey (1916), Piaget (1973), and Vygotsky (1978) have different perspectives about constructivism from epistemology and ontology perspective (Suhendi & Purwarno, 2018). Nevertheless, Jean Piaget is

regarded as the father of the constructivism philosophical paradigm due to his formalisation of the theory of constructivism through his systematic study of cognitive development in children and remarkable explanations on how knowledge is internalised by learners to help them construct understanding of reality through their experiences and interaction (Adom et al., 2016; McLeod, 2018; Creswell & Creswell, 2018).

The theory of cognitive development by Jean Piaget which is anchored on constructivism philosophy was chosen in this study based on the premise that for learners to exhibit mathematical skills, reasoning is involved and can be exhibited in their abilities to analyse and find solutions to mathematical problems. The theory of cognitive development was helpful in that it facilitated the analysis of learners' scores and performance based on the Basic Numerical and Calculations Assessment test to determine their cognitive levels of constructivism. Constructivism has been used by researchers to establish how learners construct understanding and attach meaning to learning. Dunphy et al. (2014) analysed the concepts of constructivism in their study of mathematics in early childhood and primary education learners.

Purpose of the study

The study sought to assess the basic mathematical skills of learners in grade 4 at one of the primary schools in Lusaka District, Zambia and provide qualitative analysis of individual learners' performance from constructivism perspective.

Objectives

The study was guided by the following objectives;

i.   To analyse the performance of grade four learners in basic mathematical skills.
ii. To suggest intervention strategies for enhancing learner performance in basic mathematical skills.

Literature review

Performance of learners in mathematics at primary level

Acquisition of basic mathematical skills by children at an early stage of education is cardinal for subsequent development of complex mathematical skills in later grades. Every child is viewed as having potential and ability to solve mathematical problems, and make sense of the world using mathematics and to communicate their mathematical thinking (Dunphy et al., 2014). Nevertheless, performance of learners in mathematics at primary level in Zambia has not been good. The results based on National assessment as well as regional reports have revealed low performance of learners in mathematics. According to the 2008 National Assessment Survey Report of 2008 reported that the national mean performance of learners at primary level in mathematics was at 39.4 percent (Hamusunga, 2012). The results were consistent with the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) III results published in 2011. The report by the Examination Council of Zambia (ECZ) was not very different despite indicating a decline in learners' performance in mathematics in 2015. The Examination of Council of Zambia (2015)

indicated that performance of learners in mathematics based on grade 5 assessment results was at 38 percent, and bemoaned the poor quality of education at primary level.

Studies on learners' performance in mathematics at primary level conducted within Zambia and other countries have shown mixed results. A study by Raoano (2016) among the grade 6 learners revealed that learners lacked of ability to solve mathematical word problems, which were identified as arithmetic skills and reflective skills. Raoano (2016) indicated that learners lacked the ability to read with understanding due to their lack of competence in the language of learning, leading to their challenges solving mathematical word problems.

A comparative study by Tshabalala (2008) to analyse numeracy performance of Grade 3 learners in urban and rural primary schools of South Africa revealed that the overall performance in numeracy of Grade 3 learners in rural schools compared to their counterparts in urban schools was not satisfactory. The study revealed that variables such as language and funding were found to have had an effect on learner performance in numeracy. In relation to mathematical reasoning in learners, a study by Lee et al. (2013) found that learners improvement in mathematical reasoning. The results were attributed to the exposure of learners to the use of Rearranging numerical expressions. Basic algorithm properties such as associative and communicative properties were connected to rearrange the expression and follow exactly PEMDAS in order, resulting in easy development of mathematical reasoning in learners using the mnemonic, PEMDAS (Lee et al., 2013).

A study by Maniraho and Mugabe (2019) on performance of grade 6 learners in mathematics revealed that both the Rwandan and the Botswana learners performed better on place value questions, as well as the only other question involving simple addition and subtraction. The study further revealed variations in learner performance on assessment items requiring measurements and reported that did not do well on a multi-step problem of finding an area of a shape in a grid where the unit square was not one, and that a question on determining time in a different time zone as well as a question of ordering volumes according to size appeared to have been difficult for all the learners.

Concept of cognitive development in relation to development of mathematical skills in children

Jean Piaget was of the view that human beings have the mental structure that undergoes changes when exposed to new information or experiences due to an individual's interaction with the environment and that a child is born with innate tendency to interact with and make sense of their environment (Slavin, 2009; Munsaka & Matafwali, 2013). Piaget's theory cognitive development provides insight on the changes in the reasoning level of children and cognitive processes (Kendra, 2014). Cognitive development is thus the construction of mental processes such as remembering, problem solving and decision making (Plowden, 2000), which occur due biological maturation of individuals and their interaction with the environment (Berk, 2006; Cook & Cook, 2007). Piaget indicated that an individual's mental structure undergoes processes of change namely; *sensorimotor*, *pre-operational*, *concrete operational* and *formal operational* stages (Bremner, 2010; Moreno, 2010), in which a

child exhibits different characteristics that reflect activities linked to exploration and understanding of the word.

During each level of cognitive development, a unique level of internal organisation of cognitive structure, analysis, understanding of information and events occurs (Daehler, 2001) due to the interplay of *assimilation* "integration of experiences" as well as *accommodation* which is modification of cognitive schemas based on new experiences (Riegler, 2012), to enable an individual construct knowledge of reality. *Assimilation* is the process of understanding new objects or events in terms of existing schema (Slavin, 2009). Lightfoot, Cole & Cole (2009) refer to assimilation as the process of incorporating new experiences into already existing schemas. Accommodation is adjustment or modification of existing schemas to make sense of new situations (Munsaka & Matafwali, 2013).

According to Piaget's theory of cognitive development, human mental structures are believed to develop in stages. The first stage is *sensorimotor* stage which occurs from birth to 2 years. During this stage, children explore their world using senses and motor skills (Slavin, 2009). The use of senses and exploration of the environment through motor activities help children to understand their immediate environment (Munsaka & Matafwali, 2013). Children are also able to understand that objects they play with or manipulate continue to exist even when they cannot see them, the term referred to as object permanence (Cohen & Cashon, 2003). If children able to develop object permanence, then they are also able to identify and recognise familiar objects in the environment. Identification of objects is key in learning and acquisition of mathematical concepts.

Preoperational stage is from 2 to 7 years. Children in preoperational developmental stage learn to understand the world by physically manipulating objects and use symbols to mentally represent objects (Slavin, 2009), but lack critical thinking despite their language developing at an incredible rate. Children exhibit egocentrism; inability to consider other people's viewpoints and thinking that everyone sees the world the same way they view it (Munsaka & Matafwali, 2013; Slavin, 2009). Experiencing challenges with conservation is also a characteristic of children in this stage, in that they have a challenge to realise that characteristics or properties of an object remain the same even when the shape has changed (Sigelman & Rider, 2006). Characteristic of Centration is also exhibited by children during preoperational stage. This is a tendency by children to pay attention to only one aspect of an object or situation. For instance, children can focus on the height of an object and ignore its width (Slavin, 2009). Challenges with reversibility are also characteristic of children during this stage. Challenges with reversibility are shown by children's inability to perform a mental operation and then reverse their thinking to return to the starting point (Slavin, 2009). The concept of reversibility is cardinal for children to understand the concepts of addition and subtraction in mathematics.

Concrete operational stage occurs between 7 to 11 years. Development of logical reasoning occur in children during this stage and understanding of conservation, but the use of these skills are restricted to familiar situations(Slavin, 2009), implying that children may face challenges to apply their knowledge and experiences to unfamiliar situation. Children are able to understand reality based on concrete or real objects not abstracts. Children develop the ability to place objects in series (Munsaka & Matafwali, 2013; Slavin, 2009), the term referred to as *seriation*. From mathematics perspective,

children at concrete operational stage should be able to exhibit a skill on nonverbal number sense, which is the mental representation of the magnitude of symbolic numbers or representation of non-symbolic magnitudes (Aunio, 2018). Skill of nonverbal number sense may enable learners to count numbers with understanding (Geary & Hoard, 2001). Counting numbers can be done in a correct standard form left to right (Geary et al., 2009). Besides counting numbers, children should also be able to sequence objects, that is being able to understand how series of objects or activities occur in a logical order (Kumatongo, 2019) as well as possessing the ability to match, recognise compare numbers, add and subtract simple numbers (Sitabkhan et al.,, 2018), because their mental structures have the ability to perform seriation and understand reality on real objects.

Formal operational stage is the last stage of cognitive ability and occurs from 11 years to adulthood (Slavin, 2009), characterised by logical reasoning, understanding abstract concepts and hypothetical situations. Transition from concrete operational to formal operational stage is gradual (Munsaka & Matafwali, 2013), taking years before it can be accomplished fully, implying that children require time to attain certain characteristics of formal operational stage. It also cardinal to note that individual in certain situations are likely to exhibit formal operational skills in one field such as logical thinking in engineering or arithmetic, and face difficulties with logical thinking in other fields (Bernstein et al., 2008). Nevertheless, learners at formal operational stage can exhibit knowledge of number facts, the ability to recall how someone found the answer to a mathematical problem and strategy used (Bana & Korbosky, 1995; Kumatongo, 2019). Learners are also likely to develop abilities to make complex judgments about magnitude (Gersten et al., 2011), as a result of their' development of magnitude comparison and may also exhibit procedural knowledge, procedural flexibility and conceptual knowledge in mathematics (Rittle-Johnson & Star, 2007; Bottge et al., 2007). *Procedural knowledge* is the basic skills on sequencing and steps required to solve Mathematical problems. *Procedural flexibility* is the different ways in which an individual can solve a particular mathematical problem. *Conceptual knowledge* is the ability to grasp mathematical concepts and ideas and apply them to any problem solving situation.

Strategies to enhance learner performance in basic mathematical skills
Teachers can use a variety of strategies or techniques to enhance basic mathematical skills in learners. The use of play, games and manipulatives in mathematics can improve the mathematical skills of low performing learners (Monomen, Aunio & Koponen, 2014), in that games can promote hand-eye coordination, turn-taking, ability to combine objects, spatial skills and motivate learners (Lisi & Wolford, 2002; Munsaka & Kalinde,2017), whereas visual representations and manipulatives help learners attach meaning to mathematical concepts (Kumatongo,2019).

Integration of information and communications technology (ICT) when teaching Mathematical operations can facilitate the development of mathematical thinking in young children. With the support of teachers, parents and more knowledgeable peers, integrating ICT in mathematics can enable the development of skills for number recognition, counting, shape recognition and composition, and sorting (Papadakis et al., 2016),mathematical skills such as classification, counting and number recognition can also be enhanced (Sarama & Clements, 2009; Nunes et al., 2009). A study by

Papadakis et al. (2016) on evaluating the mathematical performance of children in Greece using the Test of Early Mathematics Ability (TEMA3), revealed that teaching with tablets compared to teaching with computers contributed significantly to the development of children's mathematical abilities. Using Multisensory approach; abbreviated as 'VAKT' (Visual-Auditory-Knaesthetic Tactile), in which presentation of information is done in different modalities (Murphy, 1997), can be helpful in teaching basic mathematical skills in early grade. The approach can enable learners to see, hear, touch and manipulate objects (Kumatongo, 2019), and subsequently grasp basic mathematical concepts easily.

Some strategies to enhance the performance of learners in basic mathematics can be the use of acronyms. The PEMDAS is an acronym or mnemonic that may help learners to order mathematical operations which stands for Parenthesis, Exponents, Multiplication, Division, Addition and Subtraction. The PEMDAS is widely used in the United States of America (Rahman et al., 2017), whereas other countries such as United Kingdom, Canada and Zambia use the acronyms BODMAS (Brackets, Order, Division, Multiplication, Addition and Subtraction). BIDMAS (Brackets, Indices, Division, Multiplication, Addition and Subtraction) is also another acronym that can be used (Rahman et al., 2017). Ameis (2011) observed that although the acronyms used in solving mathematical problems may help the learners in remembering the order of operations, the acronyms do not develop the concept behind the acronym itself, and that learners may have the general idea of the acronym, but remembering what the letters of acronym stands for may take some time (Lee et al., 2013). It imperative therefore to use strategies that may help learners grasp mathematical concepts with less difficulties in order to build a strong foundation in mathematics during early primary.

Methodology

Research design

This study was be guided by constructivism philosophy and qualitative case study was be used as a research design. A case study was chosen because the study sought to assess the basic mathematical abilities of grade four learners in detail, in context and holistically. Qualitative research is inductive in nature, providing researcher's opportunity to generally explore meanings and insights in a given situation, and to use a range of data collection and analysis techniques that use purposive sampling (Mohajan, 2018).

Target population

The target population for the study was grade four learners at one of the primary schools in Lusaka. Grade four learners were targeted because they formed a transitional grade from lower primary to middle basic level of the Zambian basic education system.

Study sample

The sample size comprised of eight (8) grade four learners (4 boys and 4 girls) in grade 4 aged between 10 and 13.

Learner Profile Analysis By Age
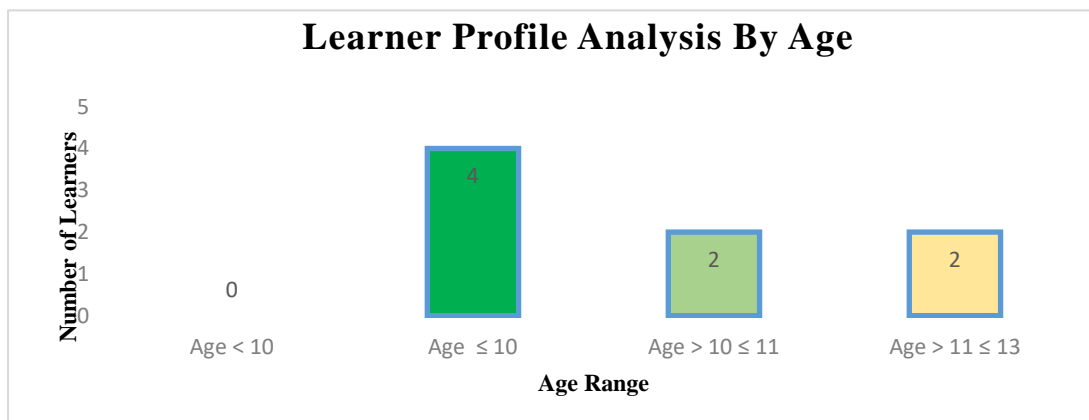
Figure 1: Learners profile analysis by age

Sampling procedure

Participants were selected purposively; this is because purposive sampling is used when choosing participants that have specific qualities to the study (Alvi, 2016). The learners were selected based on convenience in that convenience sampling helps in selecting participants who are often readily and easily available (Taherdoost, 2016).

Instrument for data collection

The Basic Numerical and Calculation Abilities Test (BANUCA) was used to as assessment instrument and was administered to learners in at the same time in a group, but working on individual task. Assessment was conducted in November, 2019 in the third and final term of the academic school calendar. The BANUCA is a Zambian locally developed test battery that can be used to assess learners' basic numerical and calculation abilities. The Basic Numerical and Calculation Abilities Test(BANUCA) is a test battery for assessing basic numerical and calculation abilities for learners in grades 1 to 4 (Räsänen & Chilala,2003), but can also be used for older learners with special educational needs.

The BANUCA tasks are paper based (Monomen et al., 2014), developed for group assessment and screening of difficulties in basic numeracy, and also recommended for assessment of individual learners. BANUCA does not give an estimate of examinee's formal school mathematical skills, despite the tasks in the test battery providing an estimate of a learner's skill in number related abilities, which form the grounds for learning mathematic skills at school and for in daily living(Räsänen & Chilala,2003). Analysis of scores obtained using BANUCA has to more qualitative than quantitative (Räsänen & Chilala, 2003). BANUCA contains 9 tasks divided into two forms for children at different grade levels. The task contents include; (1) *comparison dots*, a task aimed at assessing learner(s) skills on the concept of more and perceptual estimation; (2) *correspondence task*, which focuses on assessing counting, one-to-one correspondence and Arabic number skills; (3) *single digit addition* task assesses counting from 0 to 20, Arabic numbers and addition abilities, whereas; (4) *single digit subtraction* assesses counting from 0 to 20, Arabic numbers and subtraction skills. Task (5) which is based on *writing numbers* (number line) assesses skills in Arabic numbers, counting above 20, number system and fine motor skills. Task (6) is on *number comparison* and skills assessed include; Arabic numbers, number system, visual

attention and memory. Task (7) is on matching spoken and written numbers, focusing on verbal memory and number system. Task (8) is on *calculation of multi-digit numbers* and assesses fluent skills in single digit calculations, number system and calculation algorithms. Task (9), which is the last task, is *arithmetic reasoning* and assesses reasoning and fluent calculation.

During assessment, each examinee is given a test booklet and pencil, while an examiner needs a user's guide and a stop watch for timing the test (Räsänen & Chilala, 2003). The maximum time for doing the tasks is 40 minutes, but depending on the age of examinees, 20 to 40 minutes should be reserved for instructions and other guidance required by the examinees. Each task has a maximum time limit and a word-to- word has to be given to examinees and if the examinee seems to have challenges with instructions when other examinees have started working on a particular task, the examiner can repeat the instructions to an individual without disturbing other examinees(Räsänen & Chilala,2003). The Zambian localised version of BANUCA User's Guide is written in English, but instructions have be translated into Chitonga, Cinyanja, Icibemba, Kiikaonde, Lunda, Luvale or Silozi which are the seven official local languages used in Zambian schools. Standardised and non standardised tools in assessing mathematical skills are of great importance.

The scoring key for BANUCA comprise the level of performance with a three level scale indicated with shades of grey: **Dark grey** for *average or above average performance;* **Light grey** for *satisfactory performance* and **white** for *concern and recommending an learner for further analysis*(see table 1)

Table 1: BANUCA scoring key   **Source:** Räsänen & Chilala (2003)

Data analysis procedure

Data was analysed qualitatively based on performance scores of learners. Qualitative data analysis technique was used based on the fact that analysis of scores obtained using BANUCA has to more qualitative than quantitative (see Räsänen & Chilala, 2003). The use of qualitative analysis also helps to illustrate the data in great detail and deals with diverse subjects via interpretations (Neuendorf, 2019) suitable for qualitative descriptive studies.

Ethical considerations

Prior to undertaking this study, permission was granted to conduct an assessment by the school administrators. The school manager and teachers from the school where the study was conducted were informed about the nature of the assessment. The learners who took part in the study were also informed about the nature of the study and assured of high levels of confidentiality.

Validity and reliability

Analyses of assessment scores of most learners' ability to solve calculations and arithmetic reasoning tasks were not accurately assessed in that most assessment items were not answered by some learners. However, in reference reliability, the BANUCA test in realiable in that the test battery assesses learners on nine (9) tasks divided into two forms of numbers and arithmetic skills (sse Räsänen & Chilala,2003)for children, indicating consistence of the test battery to assess basic mathematical skills in learners.

PRESENTATION OF FINDINGS

The findings are based on performance of learners on BANUCA test. The tables 2 and 3 indicate the total scores of all learners.

	Learner 1			Learner 2			Learner 3			Learner 4			Ideal
	Short Forms		Total	**Short Forms**		Total	**Short Forms**		Total	**Short Forms**		Total	**Full**
	N-Skills	A-Skills	Score	N-Skills	A-Skills	Score	N-Skills	A-Skills	Score	N-Skills	A-Skills	Score	**Battery**
Dot Comparison	5		5	2		2	3		3	1		1	**6**
Addition	6	6	6	8	8	8	6	6	6	8	8	8	**8**
Correspondence	6		6	6		6	1		1	6		6	**6**
Subtraction	5	5	5	7	7	7	6	6	6	7	7	7	**8**
Number Line	4		4	7		7	7		7	7		7	**8**
Number Comparison		6	6		4	4		7	7		8	8	**10**
Spoken Numbers			4			4			4			8	**8**
Calculations		2	2		4	4		0	0		3	3	**10**
Arithmetic Reasoning			0			7			8			0	**15**

Sum	26	19	38	30	23	49	23	19	42	29	26	48	
Full Battery	**36**	**36**	**79**	**36**	**36**	**79**	**36**	**36**	**79**	**36**	**36**	**79**	**79**

Table 2: Short Forms Summary Scores Learner 1 – 4.

	Learner 5		Total	Learner 6		Total	Learner 7		Total	Learner 8		Total	Ideal Full Battery
	Short Forms			Short Forms			Short Forms			Short Forms			
	N-Skills	A-Skills	Score	N-Skills	A-Skills	Score	N-Skills	A-Skills	Score	N-Skills	A-Skills	Score	
Dot Comparison	6		6	2		2	1		1	6		6	6
Addition	8	8	8	5	5	5	6	6	8	8	8	8	8
Correspondence	6		6	5		5	6		6	6		6	6
Subtraction	8	8	8	5	5	5	6	6	6	8	8	8	8
Number Line	8		8	4		4	8		8	8		8	8
Number Comparison		7	7		2	2		7	7		8	8	10
Spoken Numbers			4			2			4			5	8
Calculations		4	4		1	1		6	6		4	4	10
Arithmetic Reasoning			10			6			9			3	15
Sum	36	27	61	21	13	32	27	25	55	36	28	56	
Full Battery	36	36	79	36	36	79	36	36	79	36	36	79	79

Table 3: Short Forms Summary Scores Learner 5 – 8.

DISCUSSION OF FINDINGS

The performance of learners on BANUCA test as indicated in table 2 in comparison to the ideal scores for a full battery indicated that Learner 1(L1) had 26 on number skills, which falls in the white grid and indicating a point of concern(**see** table 1). The score of 19 out of the total score of 36 on arithmetic skills also indicate a point of concern for a learner in grade four in that score 19 is the least minimum to attract a *satisfactory* rating on the scoring key for learners in grade three (3) and not grade four (4) which attracts a 23 minimum score for satisfactory score, indicating that L1 had challenges with basic arithmetic skills. The score for L1 in arithmetic skills are similar to Raoano(2016) findings

which established learners challenges with arithmetic skills. Nevertheless, challenges in arithmetic skills in this context were not attributed to the inability to read mathematical words during assessment (see Raoano, 2016), in that the BANUCA test had no assessment tasks involving mathematical word problems. It was also established that most assessment items involving calculations and arithmetic reasoning were not answered by L1. The performance for L1 on arithmetic skills revealed that the learner had challenges with; fluent skills in single-digit calculations, number system**,** calculation algorithms, reasoning and fluent calculation skills, which are the basic skills assessed under calculations and arithmetic reasoning.

Learner 2(L2) demonstrated *satisfactory* performance on short form of number skill of 30 score and a least *satisfactory* arithmetic score of 23(**see** table 1).The learner draws attention for concern in the skills of concept of more and perceptual estimation for enhancing comparison of dots. Challenges in concepts of more and perceptual estimation are typical of children at *pre-operational stage* according to Jean Piaget's theory of cognitive development (**see** Sigelman & Rider, 2006; Slavin, 2009), implying that the learner's performance on concepts of more and perceptual estimation did not match cognitive maturation in reference to Piaget's theory of cognitive development perspective. The score for L2 on calculations and arithmetic reasoning tasks revealed that the learner experienced challenges with fluent skills, number system, calculation algorithms but performed well on simple addition, subtraction and correspondence related tasks.

The total score for Learner 3 (L3) on number skills was 23 out of the possible score of 36 of the full battery. The results indicate that the learner is performance is within a satisfactory score for learners in grade 3 and not grade four, reflecting need for concern for the learner according to BANUCA scoring key. The results on arithmetic skills is also a source of concern for L3 in that 19 is the minimum score for satisfactory ranking for learners in grade 3. Learner's performance therefore was within the expected satisfactory performance of grade 3 learners both on number skills and arithmetic skills. Analysis of Learners 1's answered assessment items indicated that most assessment items involving calculations were not answered, which may imply the learner's inability to solve tasks involving multi-digit numbers and mathematic reasoning. Exposure to play, games and manipulatives in mathematics **(see** Monomen, Aunio & Koponen, 2014; Lisi & Wolford, 2002; Munsaka & Kalinde,2017), and the use of computer related devices such as tablets (see Papadakis et al. (2016) may be required to help the L3 develop number skills which are prerequisite for developing arithmetic skills.

Performance for learner 4(L4) depicts a *satisfactory performance* on number skills and arithmetic skills. The learner indicated deficit skills in concept of more, perceptual estimation under comparison of dots (**see** table 2). Despite good addition skills, the learner had satisfactory skills in subtraction and number line. Performance of L4 on dot comparison may indicate that the learner might not have had understood the instructions (**see** Räsänen & Chilala, 2003), and the examiner could not have had noticed, in that the child did not   show any signs of not understanding instructions. The learner's performance on addition   and correspondence tasks indicate a child's capability of performing better on dot   comparison. Furthermore, deficit skills were envisaged in computation of multi -digit numbers, reasoning and fluent calculation skills in arithmetic reasoning. Most assessment items involving arithmetic reasoning were not

answered by learner 1. Seemingly challenges in arithmetic reasoning may suggest lack of attainment of logical reasoning and understanding abstract concepts, characteristic of learners in *formal operation stage* according to Piaget's theory of cognitive development (**see** Munsaka & Matafwali, 2013; Bernstein et al., 2008).

Learner 5(L5) performed well on number skills with scores of 36 out of the 36 full battery score on number skills falling under *good performance*(see table 3). Performance of L5 on arithmetic skills was satisfactory, implying that L5 had acquired basic mathematical skills, with specific areas of satisfactory performance in calculations and number comparison, good skills in comparison of dots, addition, correspondence, subtraction and number line. The overall score of 61 is a good performance rating out of the 79 full battery.

The performance for Learner 6(L6) falls under the white grid on the BANUCA scoring key (see Table 1), indicating area of concern in number skills. The learner's performance equally exhibited challenges with arithmetic skills with a score of 13 which is a minimum score of satisfactory for learners in grade 2(see Table 1), indicating that L6 was two grades lower in arithmetic skills based on BANUCA scoring key. The specific of concerns for L6 are depicted in almost all the skills outlined in the assessment instrument.

Learner 7(L7) had *satisfactory* performance in both number and arithmetic skills. The good scores on addition, correspondence, subtraction and number line is an indication that L7 had the potential of performing better on dot comparison tasks. However, it might be possible that the learner might not have had understood the instructions (**see** Räsänen & Chilala, 2003).

Scores for Learner 8 (L8) revealed the learners ability to solve mathematical tasks involving number skills in that the learner had *good* performance in number skills. Performance of L8 on arithmetic skills was satisfactory. The good performance on tasks involving addition and subtraction concur with the findings by (Maniraho & Mugabo,2019), although the performance for learners 8 involved more tasks on addition and subtraction as compared to the study by Maniraho & Mugabo (2019). However, the learner has a satisfactory score on arithmetic skills was seemingly as a result of challenges calculations and arithmetic reasoning in which the learner obtained lowest scores.

Conclusion

Generally, learners demonstrated satisfactory skills on number skills and experienced more challenges on arithmetic skills despite differences on individual scores. Most learners did not answer tasks involving calculations and arithmetic reasoning, which may imply that learners generally experienced challenges with fluent skills in single digit calculations, number system and calculation algorithms. The mathematical challenges faced by learners maybe a reflection of their inability to comprehend abstract concepts, and/or inability to solve tasks involving mathematic reasoning.

Recommendations

- Teachers need to use activities that promote multi-sensory approach when teaching basic mathematical skills to enable learners grasp skills in mathematics easily.
- Calculation of multi-digit numbers requires teachers to build fluent skills in single-digit calculations, number system and algorithms in learners as pre-requisite skills.
- Teachers should employ a task phase assessment approach for learners with challenges in the concepts of more, perceptual estimation to enhance dot comparison.

References

Acharya, B.R. (2017) Factors affecting difficulties in learning mathematics by mathematics learners. International *Journal of Elementary Education, 6*(2): 8-15.

Adom, D., Yeboah, A., & Ankrah, A.K. (2016). Constructivism philosophical paradigm: Implication for research, teaching and learning. *Global Journal of Arts Humanities and Social Sciences, 4(*10): 1-9

Alvi, M.H. (2016). *A manual for selecting sampling techniques in research*. Retrieved on 17th September, 2020 from: https://mpra.ub.uni-muenchen.de/70218/

Ameis, J. A. (2011). *The truth about PEDMAS. Mathematics Teaching in the Middle School,* 16(7): 414-420.

Aunio, P. (2018). *Early mathematical skills learning and learning difficulties: evidence-based assessment and interventions*. Retrieved 11th November, 2019 from: https://*dansma.dk›wp-content›uploads›2018/10›AunioMathLearnDiff/*

Bana, J., & Korbosky, R. (1995). *Children's knowledge and understanding of basic number facts.* Retrieved on 9th November, 2019 from: https://ro.ecu.edu.au/ecuworks/6744

Benstein, D.A., Clarie-Stewart, A., & Roy, E.J. (2008*). Psychology*. New York: Houghton Mifflin

Berk, L.E. (2006). *Child development* (7th Ed.). Boston: Allyn & Bacon.

Bremner, J.G. (2010). Cognitive Development: Knowledge of the physical world. Wachs (Eds.), *The wisely-Blackwell handbook of infant development*. London: Blackwell publishing limited.

Bottge, B.A., Rueda, E., LaRoque P.T., Serlin, R.C., & Kwon, J. (2007). Integrating reform- oriented math instruction in special education settings*. Learning Disabilities Research and Practice, 22*(2): 96–109.

Brandt, C.F., Bassoi, T.S., & Baccon, A.L.P. (2016). Difficulties of 6th grade elementary school students in solving the four basic fundamental operations: Addition, subtraction, multiplication and division of natural numbers. Creative Education, 7: 1820-1833. Retrieved 9th November, 2019 from: http://dx.doi.org/10.4236/ce.2016.713185.

Cohen, L.B., & Cashon, C.H. (2003). Infant Perception and cognition. In R.M. Learner, M.A. Easterbrooks, & J. Mistry (Eds.), *Handbook of psychology*. Developmental psychology. Hoboken, NJ: Willey

Cook, J.L., & Cook, G. (2007). *The world of children*. Boston: Allyn & Bacon

Creswell, J.W. & Creswell, J.D. (2018). *Research design: Qualitative, quantitative and mixed approach* (5th Ed.). Los Angeles: SAGE publication, Inc.

Dunphy, E., Dooley, T. Shiel, G., Butler, D., Corcoran, D., Ryan, M., Travers, J., & Perry, B. (2014). *Mathematics in early childhood and primary education (3–8 years)*. Dublin: National Council for Curriculum and Assessment.

Examination Council of Zambia (2013). *Student assessment in Zambia.* World Bank Symposium: Assessment for Global Learning, November 8, 2013 Washington, DC. Lusaka, Zambia: Examination Council of Zambia.

Geary, D.C., & Hoard, M.K. (2001). Numerical and arithmetical deficits in learning-disabled children: Relation to dyscalculia and dyslexia. *Aphasiology,* 15(7): 635–647.

Geary, D.C., Bailey, D.H., & Hoard, M.K. (2009). Predicting mathematical achievement and mathematical learning disability with a simple screening tool. *Journal of Psychoeducational Assessment.* Retrieved on 9th November, 2019 from: doi: 10.1177/0734282908330592.

Gersten, R., Clarke, B., Haymond, K., & Jordan, N. (2011). *Screening for mathematics difficulties in K–3 Students.* Portsmouth, NH: RMC Research Corporation, Center on Instruction.

Hamusunga, G. (2012). *An analysis of the performance of the Zambian education system*. Lusaka, Zambia: Zambia Nation Education Coalition

Kendra, C. (2014*). Cognitive development.* New Haven: Yale University Press.

Kumatongo, B. (2019). *Learning of mathematical concepts by learners with intellectual disabilities.* Retrieved 7th March 2020 from: https://www.Researchgate.net/publication/338 527363.

Lazarus, S. (2010). *Educational psychology in social context*. Oxford: Oxford University Press.

Lee, J.K., Lickwinko, S., & Taylor-Buckner, N. (2013). Exploring mathematical reasoning of the order of operations: Rearranging the procedural component PEMDAS. *Journal of Mathematics Education at Teachers College, 4*(2): 73-78.

Lightfoot, C., Cole, M. & Cole, S.R. (2009). *The development of children* (6th Ed.). New York: Worth Publishers.

Lisi, R. D., & Wolford, J. L. (2002). Improving children's mental rotation accuracy with computer game playing. *The Journal of Genetic Psychology, 163*(3): 272–282.

Lufunda, P.M. (2012). School *Effectiveness in reading and mathematics in Zambia: analysis of SACMEQ III data.* Paris, France: International Institute for Educational Planning.

Maniraho, J.F., & Mugabo, L.R. (2019). Grade six learners' performance in mathematics: A comparison between Rwanda, Botswana and South Africa. *Journal of Research Innovation and Implications in Education, 3*(1): 17-22.

Ministry of Education, Science, Vocational Training and Early Education (2015). *BIG PUSH: EFA ACCELERATION INITIATIVE: Second Regional Workshop*, Luanda, Angola, 18-22 October 2013.

Ministry of Education, Science, Vocational Training and Early Education (2013). The Zambia Education Curriculum Framework. Lusaka, Zambia: Curriculum Development Center.

Monomen, R., Aunio, P., & Koponen, P. (2014). Investigating right start mathematics kindergarten instructions in Finland. *Journal of Early Childhood Research*, *3*(1)2-26.

Mulenga, I.M., & Kabombwe, Y.M. (2019). A Competency-Based Curriculum for Zambian Primary and Secondary Schools: Learning from Theory and some Countries around the World. *International Journal of Education and Research,* 7(2): 117-130.

Munsaka, E., & Matafwali, B. (2013). *Human development from conception to adolescence: Typical and atypical trends.* Lusaka, Zambia: University of Zambia Press.

Munsaka, E., & Kalinde, B. (2017). *Laying the foundation for Optimal Outcomes in early childhood education.* Lusaka, Zambia: Unza Press.

Nunes, T., Bryant, P., & Watson, A. (2009). Key understandings in mathematics learning. London: Nuffield Foundation.

Papadakis, S., Kalogiannakis, M., & Zaranis, N. (2016). Comparing tablets and PCs in teaching mathematics: An attempt to improve mathematics competence in early childhood education. *Preschool & Primary Education, 4*(2): 241-253.

Plouden, W. (2003). *Piaget's theory of cognitive and effective development*. Foundation of constructivism. New York: Longman.

Rahman, A.E.S., Shahrill, M., Abbas, N., & Tan, A. (2017). Developing students" mathematical skills involving order of operations. *International Journal of Research in Education and Science (IJRES), 3*(2): 373-382.

Raoano, M.J. (2016). *Improving learners' mathematics problem solving skills and strategies in the intermediate phase: A Case Study of a Primary School in Lebopo Circuit.* Unpublished master's dissertation. Limpopo, South Africa: University of Limpopo.

Räsänen, P., & Chilala, M. (2003*). Basic numerical and calculation abilities (BANUCA). User's guide Zambian localised version*. Lusaka, Zambia: Ministry of Education

Rittle-Johnson, B., & Star, J. R. (2007). Does comparing solution methods facilitate conceptual and procedural knowledge? An experimental study on learning to solve equations. *Journal of Educational Psychology, 99*(3): 561–574.

Sarama, J., & Clements, D. H. (2009). *Early childhood mathematics education research: Learning trajectories for young children.* London: Routledge.

Taherdoost, H. (2016). Sampling methods in research methodology: How to choose a sampling technique for research. *International Journal of Academic Research in Management*, 5(2): 18-27.

Tshabalala, P.M. (2008). *Numeracy performance of grade 3 learners in rural and urban primary schools.* Unpublished master's dissertation. Pretoria, South Africa: University of Pretoria.

Sigelman, C.K., & Rider, E.A. (2009). *Life-span: Human development* (5th Ed.). Belmont, CA: Thompson

Sitabkhan, Y., Platas, L.M., & Ketterlin-Geller, L.R. (2018). Capturing children's mathematical knowledge: An assessment framework. *Global Education Review, 5*(3): 106-124.

Slavin, R.E. (2009). *Educational psychology: Theory and practice.* (9th Ed.). New Jersey: Pearson

Zambia National Education Coalition (ZANEC, 2012). *An analysis of the performance of the Zambian Education System.* Lusaka, Zambia: ZANEC

Gender differences in the knowledge of genetic disabilities and attitudes towards genetic counselling and testing in Zambia.

MUZATA[a] Kenneth Kapalu, WALUBITA[a] Gabriel, MUZATA[b] Danny, SEFOTHO[c] Maximus Monaheng, MOFU[a] Mubanga & CHAKULIMBA[a] Oswell

[a] Department of Educational Psychology, Sociology and Special Education
   University of Zambia.
[b] School of Health Sciences, University of Zambia
[c] Department of Educational Psychology
   University of Johannesburg
   South Africa.

Abstract

In Zambia, there appears to be scarcity of information on genetic testing and counselling, and the services involved, to inform prospective parents of the need to make good decisions about having children. Literature shows that while there are many causes of disabilities, many other disabilities are carried through genetic transmission and if people were aware, they would reduce the chances of having a child with a disability that is genetically transmitted. This study was conducted to establish gender differences in the knowledge about and attitudes towards genetic testing and counselling among students in some tertiary education institutions in Zambia. The study adopted a survey design to collect data from respondents. One hundred and fifty seven (157) respondents from four tertiary institutions were recruited for the study by means of stratified and simple random sampling. Structured questionnaires were used to collect data. Data were analysed using the Statistical Package for Social Sciences – SPSS version 16. Chi-square tests were used to compare gender differences. Three main findings were noted in the present study. First, no significant gender differences were observed among students regarding the knowledge and attitudes towards genetic testing and counselling. Second, although most of the respondents (N=95; 60%) had a positive attitude towards genetic testing and counselling, the majority (N=145; 92%) never visited the hospital to seek this service. Thirdly, some respondents did not know that diabetes mellitus II, muscular dystrophy and albinism were genetic diseases. The study established that knowledge about and attitude towards genetic testing and counselling was adequate. However, more sensitization on the types of genetic diseases that caused disabilities and the significance of genetic testing and counselling to students and families needed to be intensified through the public health system.

Keywords: *Attitudes. Disability. Gender. Genetic counselling. Testing. Tertiary students.*

Introduction

Genetic testing and counselling is a profession that originated in the United States of America when it was observed that 5% of children were born with congenital disabilities (Harper, 2004). The need for genetic testing and counselling therefore became eminent to establish the genetic related causes of disabilities. The profession has expanded to other regions such as Europe, the Middle East, Oceana, Africa, Asia and Central or

South America. The terms genetic counselling and testing are concomitantly used although they do not mean the same. This is because testing for genetic composition requires pre and post counselling to allow the client being tested to understand and accept the results of genetic testing.

Genetic testing involves screening for genetic diseases or disorders that are transmitted through chromosomes and genes. Through genetic testing, the carrier status of a client is detected (Leach, 2010). Medical doctors carry such tests to identify genes that may transmit diseases and disorders to their unborn children. Genetic counselling on the other hand provides information about the significance of testing and prepares the person tested to accept the results of the tests. Since marriage has a strong association with procreation, one of the major reasons for marriage is to have children. As such genetic compatibility and avoiding genetic inheritance that causes grave effects on the family, needs to be considered (Oyedele, Emmanuel, Gaji, & Ahure-Do'om, 2015). Visiting genetic counsellors helps in making decisions about marriage and procreation. The role of genetic counsellors as service providers for patients across the lifespan, is to assess family and environmental history to determine risk diseases. They also assist in genetic testing, diagnosis, and disease prevention and management. Further, genetic counsellors offer psychosocial and ethical guidance to help clients make informed, autonomous health care and reproductive decisions (Ciarleglio, Bennett, Williamson, Mandell & Marks, 2003).

Genetic counselling and testing is quite significant in helping prospective couples in making decisions about the children they are likely to have. Premarital genotype screening presents an opportunity for individuals to become informed about their genetic predisposition to diseases and for couples to be aware of the possible genetic characteristics of their unborn children (Oyedele *et al.,* 2015). According to Hann, Freeman, Fraser, Waller, Sanderson, Rahman, Side, Gessler & Lanceley (2017), genetic testing can help patients of hereditary diseases to make important decisions about prevention or early detection. Genetic testing or premarital screening is quite common when couples want to get married (Oyedele et al, 2015).

In Zambia, 2% out of the more than 13.4 million people in the country are persons with disabilities (Central Statistical Office, 2012).Disabilities are caused by hereditary and environmental factors. The causes of disabilities in Zambia have been grouped into congenital, diseases, injury, spousal violence and other unknown causes (Central Statistical Office, 2012). There is no doubt that some of the causes of disability are more related to genetic transmission than environmental factors. According to Central Statistical Office, (2012), congenital causes of disability in Zambia account for 14.2%, only second to disease at 35.2%. It is clear that Zambia is not spared from congenital and inheritable diseases that bring about disability. Knowledge of genetic diseases that cause disabilities and the services that can help reduce the prevalence of disabilities is crucial to people that are planning to marry and have children. Preventing the prevalence of disabilities especially those caused by genetic similarities between couples would help reduce the prevalence of disabilities and the stress that comes with disability on a family. Although literature shows more emphasis by Zambian health care systems on educating and testing for diseases such as HIV/AIDS, there appears to be no records of genetic testing for diseases that cause disabilities in Zambia. A knowledge gap also exists as to whether Zambians have knowledge about genetic testing and counselling or not and what their attitudes towards the practice are. In

Zambia, if not in Africa as a whole, the cultural practice is that a man is the head of a house and commands most decisions. It is not known whether differences in gender has an impact on student's knowledge of genetic diseases that cause disabilities and attitudes towards genetic testing and counselling.

The major argument under discussion in this paper is that disabilities can be reduced if people had knowledge that some disabilities are genetically transmitted and can be stopped if people could have access to genetic testing and counselling services. A disability is defined as a loss of function or a restriction in function caused by disease, injury or accident (Muzata, 2019). Diseases cause disorders before, during or after birth of a child. However, this paper concentrates on diseases that are genetically transmitted. Depending on the impact of the genetic transmission of the genetic disease, a child can be impaired or disabled. Impairment is a loss of a body organ as a result of disease, injury or accident (Muzata, 2019). The severity of impairment determines whether one has a disability or not.

The aim of this study was therefore to determine gender differences in knowledge of genetic diseases that cause disabilities and to assess gender differences in attitudes towards genetic testing and counselling among students in higher learning institutions in Zambia. The study used the following hypotheses:

1. **H0**: There is no significant difference between male and female tertiary students' awareness about genetic counselling and testing; and the genetic causes of disability.
2. **H1**: There is a significant difference between male and female tertiary students' awareness about genetic counselling and testing; and the genetic causes of disability.
3. **H0**: There is no significant gender difference among tertiary students in terms of attitude towards genetic counselling and testing.
4. **H1**: There is a significant gender difference among tertiary students in terms of attitude towards genetic counselling and testing.

Literature review

Available literature shows that many disabilities are caused by gene transmission from parents to the unborn baby. For instance, sickle cell disease, cystic fibrosis and Tay-Sach's disease are inherited (Oyedele *et al.,* 2015). Other inherited diseases include asthma, and diabetes mellitus II. Albinism, a disorder of the skin known to be caused by gene mutation, is an inheritable disorder that often causes low vision in victims. Other disorders associated with genetic and chromosomal transmission are Muscular Dystrophy, Fragile X Syndrome, Klinefelter syndrome, Down syndrome, Colour blindness, Cri du chat syndrome, Haemophilia, Huntington's disease and many others. Learning disabilities such as reading, writing and arithmetic, hyperactivity and emotional disorders have research evidence associating them to running in families. Heredity plays a role in the prevalence of disabilities. For instance, congenital defects in Bangladesh were about 2-4% with Down syndrome, a chromosomal abnormality at 71%, associating the causes to consanguineous marriages, inadequate antenatal check-ups, unskilled home deliveries and lack of home community services (Roy, & Shengelia, 2016).

Disabilities associated with genes and chromosomal transmission can be easily prevented if families screen for compatibility of genes before deciding to have children. Studies have shown gender differences in relation to genetic testing and counselling. For instance, some early studies on men and women in Finland showed that women have a more negative attitude towards genetic tests compared to men (Toiviainen, Jallinoja, Aro, & Hemminki, 2003). Equally, (Leach, 2010) identified potential differences between men and women's views about genetic testing. According to, (Leach, 2010) gender differences were not significant in many results on genetic diseases, results that provided an understanding of which areas of genetic testing respondents knew better and those they did not. Adeyemo, Omidiji and Shabi (2007) in a study of awareness of genetic counselling in Lagos found that most individuals had knowledge of genetic disease with 122 (86%) individuals showing knowledge of genetic disease and 43 (30.3%) individuals having been exposed to genetic counselling and 64% of those exposed to genetic counselling agreeing that genetic counselling helps prevent genetic diseases. These results appeared supportive of the practice and its significance, meaning respondents were positive about it.

A study by Boadu and Addoah (2018) on student awareness of sickle cell disease revealed that almost all students (98.6%) were aware of sickle cell disease with their source of information being the school (84.6%) and the media (12.6%). However, students generally had limited understanding and inadequate knowledge of sickle cell as an inherited disease. In a study of regional differences in awareness and attitudes towards genetic testing found that New York participants were more likely than other cities to seek genetic testing for disease (Jonassaint, Santos, Glover, Payne, Fasaye, Oji-Njideka, Hooker, Hernandez, Foster, Kittles & Royal, 2010). Attitudes to genetic testing and counselling can be influenced by many factors which include education, religious and cultural beliefs among others.

A study by Siani and Assraf (2015) of university students found that students studying life sciences had more knowledge about genetics than others although among the life science students', gender and religious affiliation did not significantly influence their knowledge of genetic diseases and attitudes towards genetic testing. In this study, a comparison was also made to see if there were differences between the different fields of study in their construction of genetic disease and attitude towards genetic testing. It has been postulated that students studying life sciences were more knowledgeable because life sciences expose students to scientific knowledge expanding their scope and having more positive attitude towards genetic testing (Siani & Assraf, 2015). Pivetti, Melotti, Marselli and Olivieri (2013) reported that genetic literacy did not predict positive attitude towards prenatal genetic testing.

Methods and material
Research Approach and design
The study adopted a quantitative approach to collect data that would be generalizable to other populations. A survey design was used. Data on awareness about genetic diseases that cause disabilities and respondents' attitudes towards genetic testing and counselling were collected and compared against gender.

Sampling and sampling procedure
The study adopted stratified random sampling technique to collect data. Stratified random sampling involves dividing the population into homogeneous subgroups and

then taking a simple random sample in each subgroup. This method is appropriate when the researcher is interested in issues related to gender, race or age disparities in the population (Kombo & Tromp, 2006). In this study therefore, students from three selected universities and one college of education; both public and private were involved in the study. Thus, the study captured 86 (54.8%) male and 71 (45.2%) female respondents in the age range of 20-40 years studying different programmes from diploma to post postgraduate levels. Respondents were students from the University of Zambia in Lusaka, Nkrumah University in Kabwe, Mufulira College of Education in Mufulira- Copperbelt province, and Chreso private university in Lusaka. Students were studying programmes such as Diploma in Education, Degree in Education, Masters in Education, Bachelor of Science Agriculture, and Bachelor of law, Bachelor of Science Public Health and Hospitality Industry. Respondents were randomly picked from 1st to 5th year of their study.

Description of instruments
Researcher made non-standardised structured questionnaires were used to collect data from respondents. Questions in questionnaires comprised demographic characteristics such as gender, institutions where respondents were studying and the programmes they were studying. A total of seven questions were asked to respondents. The following were some of the questions asked:

- Are you aware about genetic testing and counselling?
- Have you ever visited the hospital for genetic testing and counselling with partner?
- Are you planning to visit hospital for genetic counselling and testing before having first child?
- Which of the following is a genetic disease/condition? (Diseases such as HIV/AIDS, Sickle Cell Anaemia, Diabetes, and Muscular Dystrophy were listed).

The other question asked respondents to demonstrate awareness of genetic disease and knowledge of the causes of genetic disease. Three questions were given to respondents to say 'Yes' or 'No' to whether a genetic disease was caused by sexual transmission, genes or poverty.

The first set of questions in (3.3.1) above was asked to establish awareness of genetic diseases. The second and the third question was aimed at establishing respondents' attitude towards genetic counselling and testing while the fourth question was to establish knowledge of genetic disease.

Data analysis
Since the study adopted the quantitative approach, analysis was done using the Statistical Package for Social Sciences (SPSS- version 16). Chi-square test was specifically used to calculate to calculate gender differences regarding respondents' knowledge level of genetic diseases and their attitudes towards genetic testing and counselling. The level of significance was placed at 0.05.

Ethical considerations
The study did not involve experiments or any form of control and none control tests. It was a survey of their knowledge of the concepts involved in the study. However,

respondents participated in the study willingly by signing consent forms. Their personal identities were neither reflected on the questionnaires nor in the report. Respondents were further guided not to answer questions they felt were inappropriate to their conscious.

Presentation of results and interpretation

In the first set of questions, respondents were asked to indicate whether they were aware of genetic counselling and testing and genetic disease. They were also asked whether they had ever visited the hospital for genetic disease testing and counselling or not. Further, they were asked whether they were intending to visit the hospital for genetic testing and counselling before having a child or not. Table 1 has results of the first set of questions. The observed and expected figures and the Chi-square computation to show differences in gender have been presented:

Table 1: *Awareness of genetic counselling, disease and visits for genetic testing and counselling*

Characteristic	Category	Yes	No	Chi-square Result
1. Awareness of genetic counselling and testing?	**Male**			
	Observed	56	30	
	Expected	50.9	35.1	($\chi2$ (1, N = 157) = 2.7, p = .099 >.05)
	Female			
	Observed	37	34	
	Expected	42.1	28.9	
2. Awareness of genetic disease?	**Male**			
	Observed	70	16	
	Expected	69	17	($\chi2$ (1, N = 157) = .17, p = .069 >.05)
	Female			
	Observed	56	15	
	Expected	57	14	
3. Whether visited the hospital with partner for genetic counselling and testing or not?	**Male**			
	Observed	8	78	
	Expected	6.6	79.4	($\chi2$ (1, N = 157) = .74, p = .389 >.05)
	Female			
	Observed	4	67	
	Expected	5.4	65.6	
4. Whether planning to visit hospital for genetic counselling and testing before having first child or not?	**Male**			
	Observed	49	37	
	Expected	52	34	($\chi2$ (1, N = 157) = .99, p = .319 >.05)
	Female			
	Observed	46	25	
	Expected	43	28	

Significant = 0.05 level

On the first question represented by characteristic 1 in table1, the results show that majority of male and female respondents that answered the questionnaire were aware of genetic counselling and testing. There were no significant differences in gender. The *p*-value was .099, above the level of significance (.05). Similarly, respondents of both gender in characteristic 2 in table 1 indicated that they were aware of genetic diseases. There were no significant differences in gender (*p*=.069 > .05).

When respondents were asked as to whether they had ever visited hospital for genetic testing and counselling, majority response was 'No' and there were no differences with regard to gender; (*p*=.389).

However, when respondents were asked whether they were intending to visit the hospital for genetic counselling and testing or not, majority males and females were positive about visiting the hospital. For instance, literal descriptive percentages showed that (N=49; 31%) males and (N=46; 29%) were positive about visiting the hospital for genetic counselling and testing. However, a considerable number of both males and females were equally not positive about visiting the hospital for genetic testing and counselling before deciding to have a child. Literal descriptive percentages showed that (N=37; 24%) males and (N=25; 16%) females were not positive about the idea. The computation however showed no significant gender differences in their responses; (*p*= .319).

To further establish respondents' knowledge of genetic diseases, we then selected and outlined some diseases and asked respondents to tick diseases which were genetic and those which were not. The table 2 shows the results of the observed and expected as well as the Chi-square result:

Table 2: *Knowledge of genetic diseases*

Characteristic		Category	Yes	No	Chi-square Result
Which of the following is a genetic disease?	HIV/AIDS	**Male**			
		Observed	8	77	(χ^2 (1, *N* = 157) = 1.59, *p* = .208 >.05)
		Expected	6.0	79.0	
		Female			
		Observed	3	68	
		Expected	5	66	
	Sickle cell anemia	**Male**			
		Observed	69	17	(χ^2 (1, *N* = 157) = .05, *p* = .817 >.05)
		Expected	69.6	16.4	
		Female			
		Observed	58	13	
		Expected	57.4	13.6	
	Diabetes	**Male**			

	mellitus II	*Observed*	17	69	(χ^2 (1, *N* = 157) = .70, *p* = .403 >.05)
		Expected	19.2	66.8	
		Female			
		Observed	18	53	
		Expected	15.8	55.2	
	Muscular dystrophy	**Male**			(χ^2 (1, *N* = 157) = . 53, *p* = . 468 >.05)
		Observed	9	77	
		Expected	10.5	75.5	
		Female			
		Observed	10	60	
		Expected	8.5	61.5	
	Albinism	**Male**			(χ^2 (1, *N* = 157) = . 37, *p* = . 542 >.05)
		Observed	49	37	
		Expected	47.1	38.9	
		Female			
		Observed	37	34	
		Expected	38.9	32.1	

Significant = 0.05 level

The results show that respondents demonstrated knowledge that HIV/AIDS is not a genetic disease. There were no significant gender differences in their responses with a *p*-value = .208. Respondents further demonstrated knowledge that Sickle Cell disease is genetic. Thus, both males and females agreed that Sickle Cell was genetic. There were no significant differences between males and females. The *p*-value was =. 817. However, respondents did not show knowledge that Diabetes Mellitus II was a genetic disease. There were no significant gender differences in their knowledge of this disease. Both males and females indicated Diabetes Mellitus not genetic.   Further, majority of the respondents indicated that that Muscular Dystrophy was not a genetic disease. There were no significant gender differences with this variable, (*p*= .468).

 On Albinism, the difference in understanding it as a genetic condition between males and females was 9.6%. Specifically, (N=49; 31 %) male and (N=37; 24%) female said albinism was a genetic condition while (N=37; 24%) males and (N=34; 22%) females said Albinism was not a genetic condition. There were no significant differences between male and female in their responses to the question on Albinism (p= .542 > .05). From the results, it appears a large percentage of respondents understood Albinism as a genetic condition, and equally a considerable number did not understand it as a genetic condition.

Another set of questions was asked to assess respondents' knowledge of the causes of genetic diseases. The items given were to seek respondents' understanding of whether genetic diseases were transmitted through genes, poverty or through sex. Table 3

shows the observed and expected results. The Chi-square result has also been presented.

Table 3: *Knowledge of causes of genetic diseases*

Characteristic	Category	Yes	No	Chi-square Result
Genetic disease is caused through genes	Male			(χ2 (1, N = 157) = .82, p = .365 >.05)
	Observed	81	5	
	Expected	82.2	3.8	
	Female			
	Observed	69	2	
	Expected	67.8	3.2	
Genetic diseases are caused by poverty	Male			(χ2 (1, N = 157) = .02, p = .891 >.05)
	Observed	1	85	
	Expected	1.1	84.9	
	Female			
	Observed	1	70	
	Expected	0.9	70.1	
A Genetic disease is sexually transmitted	Male			(χ2 (1, N = 157) = 2.15, p = .143 >.05)
	Observed	9	77	
	Expected	6.6	79.4	
	Female			
	Observed	3	68	
	Expected	5.4	65.6	

Significant = 0.05 level

The results show that regardless of gender, respondents showed knowledge of genetic diseases. When respondents were asked whether genetic diseases were passed through genes, majority males and females agreed. There were no differences in gender. The *p*=value was .365 > .05. On whether genetic disease was caused by poverty, no significant differences were also noted in the respondents' responses (*p*-value=.891 > .05). The respondents could not agree that genetic diseases were caused by poverty. Similarly, there were no significant differences in the respondents' responses to the question of whether a genetic disease was a sexually transmitted disease or not. Both males and females understand that genetic diseases are not sexually transmitted (*p* = .143 > .05).

Discussion of the results

Genetic counselling and testing awareness is a very significant service to couples. They need to know why it is important to go for genetic counselling and testing. It helps them in making decisions about their wishes of having healthy children. The results of this study showed that majority males and female respondents were aware about genetic counselling and testing. Few males and females were not aware. There were no

significant differences established between males and females in terms of awareness about genetic testing and counselling, (p = .099 > .05). Although, Oyedele, Emmanuel, Gaji, and Ahure-Do'om, (2015) did not compare males and females in their study, the results of this study appear similar with theirs in terms of overall percentages of awareness about genetic testing and counselling. In this study, the overall percentage of awareness was (N=126; 80.3%) above Oyedele, Emmanuel, Gaji, and Ahure-Do'om, (2015) who discovered that 93 (62%) of the respondents in Nigeria were aware of genetic disease while (N=57; 38%) were not aware. The differences in the studies could be in the characteristics of respondents that were involved in the study. This study used students from three universities and one college of education, while the Nigerian study compared sampled youths only without providing their education background. Level of awareness about genetic counselling and testing maybe depend on factors such as level of education, ignorance, religion and culture. Although this study did not delve into the influencing factors of awareness, available literature shows some level of relationship in factors such as education level, culture, gender, and religion. For instance, Haga, Barry, Mills, Ginsburg, Svetkey, Sullivan and Willard (2013) postulated that cultural differences may account for disparities in knowledge as well as differing perceptions of the role of genes in disease, and national differences between the U.S. and Europe in science education curricula, and health systems. A study by Siani and Assraf (2015) found that university students' knowledge of genetic disease and attitudes towards genetic testing and counselling did not show gender and religious differences.

Further, this study established that students had knowledge about some diseases that were genetically transmitted. For instance, students had knowledge that sickle cell was a genetic disease. There were no gender differences observed. This is contrary to the study by Boadu & Addoah (2018) who revealed that even though students were aware about sickle cell disease, they had limited understanding that the disease was inherited. Students also demonstrated knowledge that Albinism was genetic. No significant gender differences were observed (p-value=.542). However, even though no significant gender differences were observed, it appears there was a considerable number of respondents, both male and female that equally indicated that Albinism was not an inherited condition. For instance, literal descriptive statistical calculations showed that (N=49; 31%) males and (N=37; 24%) understood Albinism as an inherited condition while (N= 37; 24%) males and (N=34; 22%) females said Albinism was not an inherited condition. With the many myths about albinism which are usually negative in nature (Muzata, 2019; Durojaye & Nabane, 2019), the results of this study still show that even though many students at university and college level had a better understanding of the biological nature and causes of the condition, a need to educate an equally large number about the condition is eminent. It's possible that those who believe Albinism is not inherited hold to myths and beliefs that Albinism is a superstitious condition. It should be understood that Albinism is non-contagious and is inherited through genetic transmission between two heterogeneous couples with dominant genes lacking the pigmentation (melanin) responsible skin colour formation (Durojaye & Nabane, 2019). Such knowledge can be used to change people's negative perceptions towards albinism in the communities in which they live. If young people are used to influence positive attitude change, the results are likely to be appealing. Persons with albinism particularly and other disabilities face discrimination and violence due to various reasons which include ignorance, myths and beliefs. While it is against human rights to discriminate someone on the basis of the disability they have, University students can

help influence change in their communities especially that they have the knowledge of the causes of genetically transmitted diseases. University students can also help to influence change in attitudes and help guide couples to seek genetic testing and counselling before they get married or decide to have a child.

However, students did not demonstrate knowledge that Diabetes Mellitus and Muscular Dystrophy were genetic diseases as well. Their lack of understanding that Diabetes Mellitus and Muscular Dystrophy are genetic diseases shows that students need more information to understand the various genetically related diseases so that they can be well informed about their decisions about child bearing. Aartsma-Rus, Ginjaar and Bushby (2016) explain that Muscular dystrophy, which manifests in two forms namely; Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy are caused by mutations in the dystrophin-encoding DMD gene. The condition is a degenerative genetic muscle disorder which presents itself in muscle weaknesses causing other comorbidities and reducing daily strength to do routine tasks (Cardamone, Darras, & Ryan, 2008). Aartsma-Rus, Ginjaar and Bushby (2016) advise prospective parents to take correct diagnosis because it is important for family planning and providing proper care to patients. For Diabetes Mellitus II, the causes have been under debate for some time now, some alluding to environmentally and bad health styles. However, although there are other factors said to cause Diabetes Mellitus type 2, there is strong evidence that heredity plays a role (Olokoba, Obateru & Olokoba, 2012; Ali, 2013). While evidence of hereditability is there (Ali, 2013), it is important that families or prospective couples take note of the history of each other to be able to know the risks of the disease on the child they would want to have.

This study generally revealed that respondents understood diseases and conditions that were genetically transmitted. There were no significant differences with regard to gender. The knowledge of diseases that can be genetically transmitted is cardinal in making decisions to go for counselling and testing before couples decide to marry and have children. The results are informative of the need to educate students on the types of genetic diseases. Knowledge of the diseases and their impact may help them make decisions to take genetic testing and counselling seriously. According to Calsbeek, Morren, Bensing and Ripken (2007), adequate knowledge and personal attitude are major determinants of optimal utilization of genetic testing and counselling. Providing adequate knowledge to consumers on genetic diseases would also help to change their attitudes towards testing and counselling.

Another positive score in this study is that university students also demonstrated adequate knowledge of the causes of genetic diseases. There were no gender differences in their understanding. Contrary to a study by Siani and Assraf (2015) which found that university students studying life sciences had more knowledge about genetics than others, this study which drew students from both life sciences and education did not find such a difference. The results were however similar to many other studies demonstrating that students are generally aware of genetic diseases and testing though they may not have access to the services of testing. For instance Boadu and Addoah (2018) established that students were aware (98.6%) about sickle cell anaemia as a genetic disease with their source of information being the school (84.6%) and the media (12.6%).

It must however be noted that awareness about genetic diseases and the knowledge of the causes may not mean people have positive attitude towards genetic testing and counselling. This is consistent with the results of this study as shown in table1, characteristic 2 where both males and females reported having never visited the hospital for genetic testing. It is possible that despite having adequate education about genetic diseases and their effects on the unborn child, people still go ahead to have children without screening for genetic diseases and regret thereafter when a child is diagnosed to have a genetic disease that causes disabilities. However, this study has opened another gap in research as to why respondents' attitude towards genetic counselling and testing could be possibly negative. In a study by Adeyemo, Omidiji, and Shabi (2007), out of a (N=122; 86%) of the respondents who had knowledge of genetic disease, only (N= 43; 30.3%) were exposed to genetic testing and counselling. A study of the factors that influence people to access genetic counselling and testing would cover this gap.

Limitations of the study

We asked limited questions on the types of genetic diseases. The results may not reflect the actual picture of students' understanding of genetic diseases. Future research should provide adequate assessment of the knowledge of genetic diseases by asking more questions.

We did not come across studies on genetic counselling and testing in Zambia and this created a gap in literature review on Zambia. To the best of our knowledge, this maybe the first study of its kind in Zambia. We have literature from outside the country to back the findings of this study but this may not give a true reflection of what prevails in Zambia in the faculty of genetic counselling and testing. We implore further research in the area of genetic testing and counselling to provide people with knowledge of the significance of the practice to family health.

Conclusion

This study established that generally there were no gender differences in the construction of what a genetic disease is and the attitudes towards genetic testing and counselling. Both males and females have similar understanding of the concept. However, interestingly, respondents did not understand that Diabetes Mellitus II, Muscular Dystrophy and Albinism were genetic disorders that could cause disabilities. But respondents appeared to be more aware about what genetic diseases are because they were able to tell that genetic diseases were transmitted through genes and not by poverty and sexual transmission. The results further showed positive attitude towards genetic testing and counselling although some respondents never actually visited hospital to seek the service. We recommend more sensitizations on the types of genetic diseases and disabilities and the significance of genetic testing and counselling to families.

Declaration of conflict of interest

We have no conflict of interest in this study. The study was self-funded.

References

Aartsma-Rus, A., Ginjaar, L.B., & Bushby, K. (2016). The importance of genetic diagnosis for Duchenne muscular dystrophy. *Journal of Medical Genetics*, 53(3): 145–151. doi: 10.1136/jmedgenet-2015-103387.

Adeyemo, O.A., Omidiji, O.O., & Shabi, O. A. (2007). Level of awareness of genetic counselling in Lagos, Nigeria: its advocacy on the inheritance of sickle cell disease. *African Journal of Biotechnology*, 6(24): 2758-2765.

Ali, O. (2013). Genetics of type 2 diabetes. *World Journal of Diabetes*, 4(4): 114–123.

Boadu, I., & Addoah, T. (2018). Knowledge, beliefs and attitude towards sickle cell disease among university students. *Journal of Community Medicine & Health Education.* 8:1 DOI: 10.4172/2161-0711.1000593.

Calsbeek, H., Morren, M., Bensing, J., & Ripken, M. (2007). Knowledge and attitudes towards genetic testing: A two year follow-up study in patients with asthma, diabetes mellitus and cardiovascular disease. *Journal of Genetic Counselling.* 16(4):493–504.

Cardamone, M., Darras, B.T., & Ryan, M.M. (2008). Inherited myopathies and muscular dystrophies. *Semin Neurol*, 28: 250–259.

Central Statistical Office, (2012). *Zambia: 2010 Census of Population and Housing National Analytical Report.* Lusaka, Zambia: Central Statistical Office.

Ciarleglio, L.J., Bennett, R.L., Williamson, J., Mandell, J.B., & Marks, J.H. (2003). Genetic counselling throughout the life cycle. *The Journal of Clinical Investigation,* 112(9): 1280–1286.

Durojaye, E & Nabane, S. (2019). Human rights and access to healthcare for persons with albinism in Africa. *African Disability Rights Yearbook,* 7: 35-58.

Haga, S.B., Barry, W.T., Mills, R., Ginsburg, G.S., Svetkey, L., Sullivan, J., & Willard, H. F. (2013). Public knowledge of and attitudes toward genetics and genetic testing. *Genetic Testing and Molecular Biomarkers,* 17(4): 327–335.

Hann, K.E. J, Freeman, M., Fraser, L., Waller, J., Sanderson, S., Rahman, S., Side, L., Gessler, S., & Lanceley, A. (2017). Awareness, knowledge, perceptions, and attitudes towards genetic testing for cancer risk among ethnic minority groups: A systematic review. *BMC Public Health.* 17: 503.

Harper, P.S. (2004). *Practical genetic counselling* (6th Ed). Oxford: Butterworth-Heinemann.

Jonassaint, C.R., Santos, E.U, Glover, C.M., Payne, W.P., Fasaye, G.A., Oji-Njideka, N., Hooker, S., Hernandez, W., Foster, M.W., Kittles, R.K., & Royal C.D. (2010). Regional differences in awareness and attitudes regarding genetic testing for disease risk and ancestry. *Hum Genet,* 128: 249-260.

Kombo, D.K., & Tromp, D.L.A. (2006). *Proposal and thesis writing, an introduction.* Nairobi, Kenya: Paulines Publication Africa.

Leach, V. (2010). Gender differences in attitudes towards genetic testing, risk interpretation and genetic testing. *The Journal of Young Investigators.* 19(20): 1-9.

Muzata, K.K. (2019). Terminological abuse versus inclusion: An analysis of selected terms used to describe persons with disabilities in Luvale. *Journal of Lexicography and Terminology,* 3(1): 1-32.

Olokoba, A.B., Obateru, A.O & Olokoba, L.B. (2012). Type 2 diabetes mellitus: A review of current trends. *Oman Medical Journal*, 27(4): 269-273. DOI 10. 5001/omj.2012.68.

Oyedele, E.A, Emmanuel, A., Gaji, L.D., & Ahure-Do'om, E. (2015). Awareness and acceptance of premarital genotype screening among youths in a Nigerian community. *International Journal of Medical and Health Research*. 1(1): 17-21.

Pivetti, M., Melotti, G., Marselli, D., & Olivieri, M. (2013). Psychosocial factors affecting uptake of prenatal genetic testing: a pilot study. *Prenatal Diagnosis*. 33: 1276-1282.

Roy, A., & Shengelia, L. (2016). A Review on situation of congenital disorders and access to community genetic services in Bangladesh. *Annals of Clinical And Laboratory Research*, 4(2): 1-4.

Siani, M., & Assraf, O.B. (2015). University students' attitudes towards genetic testing: A comparative study. *American Journal of Public Health Research*, 3(3): 81-90.

Toiviainen, H., Jallinoja, P., Aro, R., & Hemminki, E. (2003). Medical and lay attitudes towards genetic screening and testing in Finland. *European Journal of Human Genetics*, 11: 565–572.

A study of factors militating against female participation in STEM fields in Nigeria: Implications for counselling

Beatrice Ifeoma AJUFO
Department of Educational Foundation
Faculty of Education
National Open University of Nigeria

Abstract

This study investigated some factors militating against female participation in STEM fields. The study employed a descriptive survey design. A sample of 150 students from STEM fields at University of Ibadan, Southwestern, Nigeria was randomly selected for the study. Instrument used for data collection was a self-designed checklist on factors militating against female participation in STEM fields. Data analysis involved the use of simple percentage. The study employed a combination of both quantitative and qualitative research methods. The study identified lack of interest, masculine image of STEM courses, lack of female role models/mentors, school factors, teacher factors, parental factor, socio-cultural factors and gender stereotype among others as the factors militating against female participation in STEM fields. However, the results revealed that socio-cultural factor had the highest percentage (40%), closely followed by lack of interest (39%) while school factors and teacher factors are at the base (1%) respectively among the factors militating against female participation in STEM. Further comment from the focus group revealed that women run from STEM fields because they perceive it as a man's field and the rigours associated with it. Based on the findings, it was recommended among others that counsellors should develop interventions that would increase girls 'self-confidence and feeling of worth in STEM fields.

Keywords: Counselling. Female participation. Implications. Militating. STEM fields.

Introduction

Science and technology education is becoming very important in the 21st century due to the benefits and challenges of both globalisation and knowledge –based economy. STEM is seen to prevail over every aspect of human life and is a catalyst for the achievement of the 2030 Agenda for sustainable development (UNESCO, 2017). Any nation that wants to grow must prioritize STEM courses (Clement, Orim & Banjo, 2017). Super nations like Japan, China, America, Russia, Germany etc. are what they are today because of their scientific innovations and advancement (OECD, 2016). Increasing opportunities for women in STEM fields is an important step towards realizing this technological innovation and advancement. Female disparity in STEM fields has become a matter of concern to stakeholders in the world globally and in Nigeria in particular. Although the number of jobs in the fields of STEM are increasing rapidly, women still remain under represented in STEM professions (Global Monitoring Report, 2016). Though available records show that women make up for half of the overall population, yet they only account for 25% of the STEM workforce (UNESCO, 2017).

Gender disparity is also seen in the case of boys and girls majoring in STEM courses in tertiary institutions in most nations especially in sub Saharan Africa. Although just as many girls as boys are completing tertiary education and more women graduate from university worldwide than men, women remain a minority in the STEM fields (Global Education Monitoring Report, 2016). In the United States, for example, women earn only about 35 percent of the undergraduate degrees in STEM, a number that remained unchanged for the past decade, even though women account for almost 60 percent of university graduates (Munoz-Boudet & Revenga, 2017; UNESCO, 2010; UNESCO, 2017). Even in places where more women are studying STEM courses at the University, still very few of them end up working in STEM-related careers. For instance in Canada about 65 percent of women fill in for STEM fields but only 23 percent are working in STEM-related careers. To further buttress this, a survey carried out reveals that only 12 percent of full professors STEM in Canada are female thereby providing students with few female mentors (Munoz-Boudet & Revenga, 2017)

The situation is not different in Nigeria, although remarkable improvement has been recorded in women enrolment in education generally as well as significant changes in number of women entering into jobs in areas previously considered to be dominated by men. These changes notwithstanding, there still remains a large gap in the gender ratio of males and females in STEM fields in Nigeria (Onyekwelu, 2019; Okorafor, Kakiri & Okorafor, 2015; Aguele & Agwagah, 2007). Table 1 shows academic staff and students' enrolment in STEM courses in the University of Ibadan, Ibadan, Oyo State, Nigeria 2017/2018 academic year.

Table 1:   University of Ibadan Academic Staff and Students' Enrolment in STEM Course 2017/2018 Academic Year

		Academic Staff		Student Enrolment	
		Male	Female	Male	Female
1.	Agric	72	31	1521	1472
2.	Basic Medical Science	71	35	754	619
3.	Clinical Science	126	71	826	886
4.	Environmental Design and Management	12	5	144	55
5.	Dentistry	15	17	122	102
6.	Pharmacy	23	22	336	652
7.	Public Health	35	16	456	652
8.	Renewable Natural Resources	31	11	191	192
9.	Sciences	153	62	2923	1784
10.	Technology	76	9	2285	530
11.	Veterinary Medicine	66	18	443	277
	Total	670	297	10.981	6,858
		967		17,839	
	%	69%	31%	62%	38%

Source: Academic Planning Unit Office of Vice Chancellor (2018), University of Ibadan, Ibadan, Nigeria
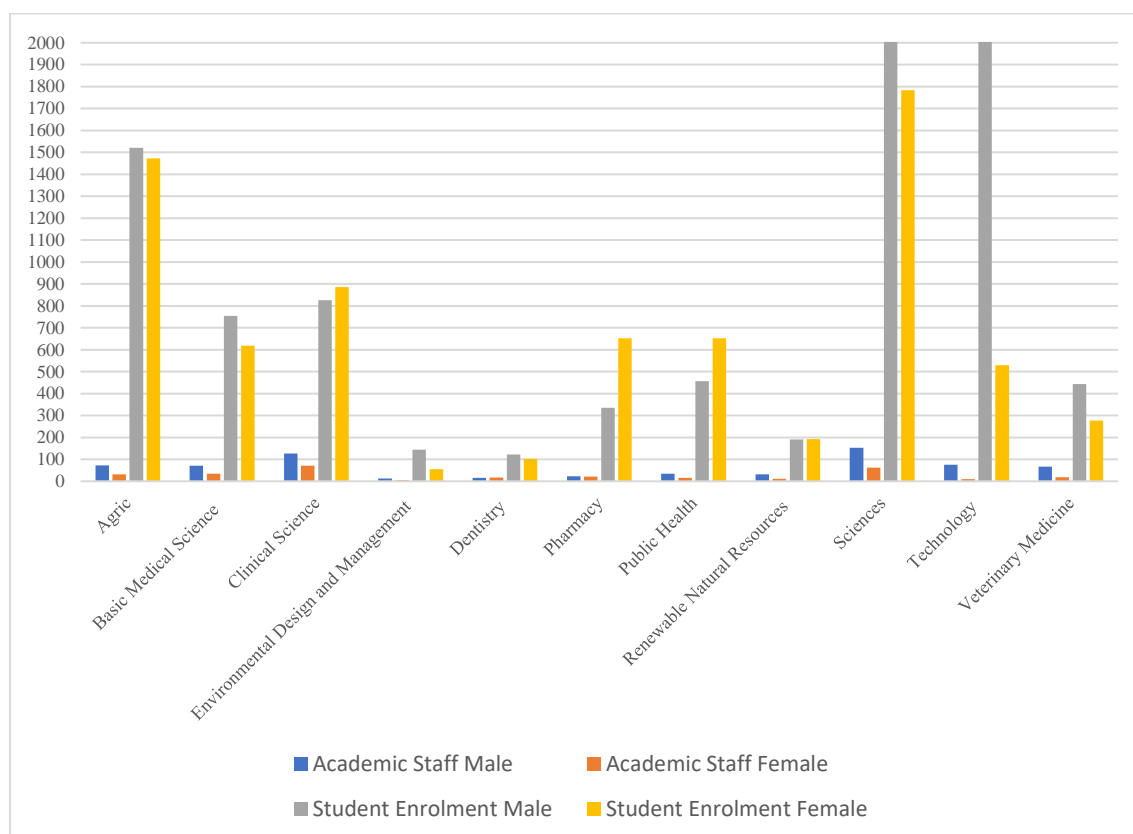
Despite the global realization that STEM underpin the 2030 Agenda for Sustainable Development, provide learners with the knowledge, skills, attitudes and behaviour required for inclusive and sustainable societies, participation of girls and women in STEM fields is still abysmally low. Many factors are attributed to why girls and women are underrepresented in STEM studies and careers. They include lack of interest, passion, masculine image of science, lack of female role models school factors, teacher factors, glass ceiling/ parental factor, socio-cultural factors and gender stereotype among others (Acheampang, 2014; Cotner, Ballen, Brooks & Moore, 2011; Akanwa & Kalu-Uche, 2015; Ojokoh, Oweseni, Akinsowon & Isinkaye, 2015; Akor, Bakar, Hamizah & Rashid, 2015; Munoz-Boudet & Revenga, 2017; Iwu & Azoro, 2017; Okorafor, Kakiri & Okorafor, 2017).

UNESCO (2017) also corroborates the above factors militating against female participation in STEM fields. According to them, they are multiple and overlapping factors which militating against girls' and women participation, achievement and progression in STEM studies and careers. These factors are grouped as individual factors such as cognitive traits and psychological factors such as interest and motivation; family and peer factors such as parental beliefs, parental education and socio-economic status. School factors within the learning environment and societal factors such as social and cultural norms related to gender equality and gender stereotype.

Statement of the problem

The rationale behind gender parity in STEM was addressed in the statement of Federico Mayor in 1999, the then Director General of UNESCO, when he said:

On a worldwide scale, STEM is still a man's business. This situation is no longer acceptable. It is economically unacceptable because of the waste of human resources that it entails. It is humanly un - acceptable since it prevents half of the population from taking part in building the world … (UNESCO, 2006; p. 34).

According to British Council Nigeria (2012) women constitute about half of the Nigerian population. This, then calls for serious attention because excluding this population from application of scientific knowledge in this 21st century knowledge-based economy will completely hinder the achievement of Sustainable Development Goal. Against this backdrop, this study therefore investigated some factors militating against female participation in STEM fields in Nigeria and proffer solutions so that these barriers can be eliminated to enable girls and women the opportunity to contribute to and benefit from STEM thereby leading to socio-economic emancipation of the country.

Research question
What are the factors militating against female participation in STEM fields in Nigeria?

Methodology
The research design adopted for the study was the descriptive survey research design. The population of the study comprised all undergraduate students in STEM fields in the University in Nigeria. .A sample size of 150 students was randomly selected from among undergraduate students studying various STEM courses in the University of Ibadan, Southwestern, Nigeria comprising 110 male students and 40 female students. The age range of participants was between 16 and 35 years respectively. Instrument used for data collection was a self-designed checklist on factors militating against female participation on STEM fields. A total of 170 self-designed checklist questionnaires were given out and 150 were returned properly field. The study employed a combination of both quantitative and qualitative research methods. Face-to-face interviews were organized where focus group discussion took place. The researcher chose to use these two research methods so that diverse points and views could cast more light on the topic. The data collected were analyzed using percentages.

Results

Table 3: Factors militating against female participation in STEM fields

Responses	%
Socio-cultural	40
Lack of interest/passion	39
Masculine image of science	08
Parental factor	06
Gender Stereotype	03
Lack of female role models	02
School factor	01
Teacher factor	01
	100%
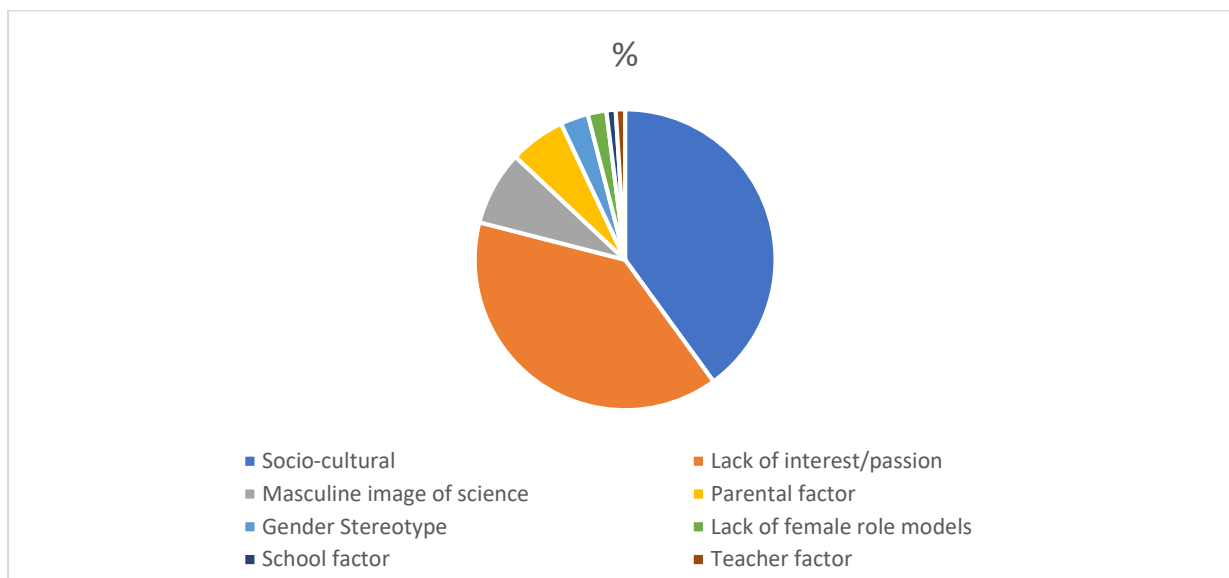
Pie chart showing the responses of the respondents on the factors militating against the female participation in STEM fields

Table 3 and Figure 1 reveal that socio-cultural factor ranked highest with 40% of the respondents indicating that socio-cultural factor militating against female participation in STEM fields, followed closely by lack of interest or passion with 39%. 8% of the respondents indicated that the masculine image of science is responsible for not involvement of girls and women in STEM fields; 6% indicated glass ceiling; 3% indicated gender stereotype; 2% indicated lack of female role model while 1% indicated school and teacher factors respectively.

Focus group discussion
The following are some of the comments that came from the students on the factors militating against female participation in STEM fields in Nigeria.

> *"I think that one of the factors militating against female participation in STEM fields is that the females perceive STEM fields generally as a 'man's field and the rigours associated with it which is not unconnected with the societal belief that STEM courses are male-dominated courses which are not meant for females.*

On further interrogation, the students had this to say:
"Many female students see STEM fields as difficult courses especially in courses like engineering, computer science and physics that involve calculation. Instead they prefer to go to Arts, Humanities, and Education where they don't have to deal with figures.

To further buttress the findings of this study. Some students have the following to say:
"Engineering as a course requires a lot of hard work. It is indeed stressful. No wonder very few female students come in for it."

On further interrogation, a female STEM student had this say:
"It is not easy to be interested in a course where there are no role models to associate with"

Discussion of results

Data analysis showed that socio-cultural factor ranked highest (40%) among the factors militating against female participation in STEM fields. This is line with the findings of Alade (2012), Akanwa & Kalu-Uche (2015), Ojokoh, Oweseni, Akinsowon & Isinkaye (2015), Iwu and Azoro (2017), Clement, Orim and Banjo (2017), Okorafor, Kakiri & Okorafor (2017) and UNESCO (2017). According to them, socio-cultural factor is a major factor associated with low participation of women in STEM fields. The analysis also showed that lack of interest (39%) accounted for the reason why female participation is low in STEM fields. This finding is in agreement with Udeani (2012), Ndirika and Agommuoh (2017), Akinsowon and Osisanwo (2014), Abe (2012) and UNESCO (2017). According to them, more males than females have interest in academic disciplines that require mathematical abilities rather the females concentrate in the so-called "female traditional subject areas" of liberal arts hence the low participation of women in STEM fields.

Masculine image of science ranked third (8%). This finding corroborates the findings of Iwu and Azoro (2017), Ndirika and Agommuh (2017), Abe (2012) and Kerger, Martin and Brunner (2011). In a study by Kerger, Martin and Brunner (2011), it was found that girls become much more interested in science subjects when they were introduced in a feminine context as opposed to a masculine context.

The analysis also showed that parental factor ranked fourth (6%) in accounting for low female participation in STEM fields. This finding is supported by findings of Okorafor, Kakiri & Okorafor (2017), UNESCO (2017) and Ojokoh and Afolayan (2015) that opined that parental factor pose a great deal of influence on female participation in STEM fields.

Gender stereotype ranked the fifth in STEM fields (3%) among the factors militating against female participation. This finding corroborates the findings of Ekine and Abay (2013), Alade (2012), Fegbasan (2010) who reported that gender stereotype is one compelling explanation that is behind the low participation of women in STEM fields.

Lack of female role models ranked the sixth (2%). This is in agreement with the studies of Harry (2014), Atuahene and Owusu-Ansah (2013), Akor, Bakar, Hamzah and Rashid (2015) and UNESCO (2017) who observed that lack of female mentors and role models make careers in STEM fields unappealing to many young women.

School and teacher's factors ranked the least (1%) respectively among factors responsible for low enrolment and participation of women in STEM fields. This is finding is in line with the findings of Udeani (2012), Ekine and Abay (2013), UNESCO (2017) and Ndirika & Agommuoh (2017) who reported that perception and attitude of science teachers can make girls drop out of science classes. This is because according to them the quality of teachers is considered to be the single most important in-school factor.

Conclusion

The findings of this study have shown that factors militating against female participation in STEM fields include lack of interest/passion, masculine image of science, lack of female role model, sociocultural factors, gender stereotype to mention but a few. This therefore calls for holistic and integrated interventions by all stakeholders to remove

barriers by strengthening capacity and investments that will spark girls' interest and motivate them to aspire to pursue STEM studies and ultimately STEM careers. This as a matter of urgency, needs to be made a top priority if Nigeria really aspires for socio-economic emancipation.

Implications for Counselling

i) This study has noteworthy implications for career counsellors and guidance counsellors. In order to help increase girls' motivation and engagement in STEM, the following recommendations are put forward.

ii) STEM career development should start early, at primary school before girls lose interest and disengage. This can be achieved by making girls comfortable in STEM subjects at tender ages because it will inform their decisions to pursue careers in STEM fields later in life. This therefore calls for recruitment of more guidance and counsellors in order for every primary school to have at least one.

iii) Counsellors should collaborate with those that have a strong influence on girls' decisions to pursue or not to pursue STEM courses. Such as parents, siblings, peers and teachers.

iv) Counsellors should develop interventions that would increase girls' self-confidence and feeling of worth in the STEM field.

v) Career counselling gender-responsive strategies should be put in place.

vi) Counsellors should provide diverse images of STEM professionals, for example, on career posters, in publications and online resources to disabuse the stereotype of the male scientist.

vii) Role models and mentors who have valuable experience and lessons should be used to develop in-school programmes so as to keep the girls in contact with practicing female STEM professionals.

viii) Work experience and out-of-school programmes such as internship should be targeted.

ix) Campaigns to enlighten parents and families on the importance of preparing their daughters for STEM professions should be mounted. Such campaigns would reduce the sexist stereotyping of children at a very young age and thus create a stable background for positive socialization of females. With positive socialization, more and more girls would naturally be attracted to STEM fields.

x) Change in male-dominated workplaces should be advocated so that they can attract more women.

References

Abe, S. (20120. Gender disparity in course offering and graduate output in Nigeria: a case study of University of Lagos 2003 – 2008. *Journal of Emerging Trends in Educational Research and Policy Studies,* 3(1): 103-110.

Academic Planning Unit, Office of the V-Chancellor (2019). *2018 pocket statistics*. Ibadan, Nigeria: University of Ibadan.

Acheampong, A.B. (2014). *Inequality of gender participation of females in STEM disciplines in higher education: A case study of KNUST*. Unpublished master's dissertation. Oslo, Norway: University of Oslo.

Aguele, L. I., & Agwagah, U. N. V. (2007). Female participation in science, technology and mathematics (STEM) Education in Nigeria and National development. *Journal of Social Science,* 15(1): 121-126.

Akanwa, U. N., & Kalu-Uche, N. (2015). Women in STEM: Closing the gender gap to national transformation. *Journal of Research and Method in Education,* 5(2): 08-15.

Alade, A. (2012). Gender stereotyping and empowerment in Nigerian society: implications for women repositioning in curriculum delivery. *Afrrev Laligens,* 1(1): 30-43,

Atuahene, F., & Owusu-Ansah, A. (2013). A descriptive assessment of higher education access, participation, equity and disparity in Ghana. *SAGE Open*, 1-6 DOI 101177/21582440113497725

Bernasconi, B.M. (2017). *The relationship between self-efficacy and advanced STEM course work in female secondary students*. Unpublished doctoral thesis. Minneapolis, Minnesota, USA: Walden University.

British Council Nigeria (2012). *Gender in Nigeria report: improving the lives of girls and women in Nigeria – Issues, problems and action.* Retrieved from: http://Www/Uneca.Org/Portals/Ngm/Document/Profilengms/

Clement, M.D., Orim, R.E., & Banjo, J. (2017). Gender participation in basis science courses at the Nigeria Certificate in Education. *Journal of Faculty of Education, University of Calabar,* 13(1): 126-136.

Cotner, S., Ballen, C., Brooks, D. C., & More, R. (2011). Instructor gender and student confidence in the science. A need for more role model? *Journal of College Science Teaching,* 40(5): 96-101.

Ekine, A., & Abay, N.A. (2013). *Enhancing girls' participation in science in Nigeria. A driver for National Development and Social Equality*. Abuja, Nigeria: Centre for Universal Education. Retrieved from www.cssia.org/pdf/20000193 on October 18th, 2019.

Fegbasan, A. (2010). Gender stereotype belief and practices in the classroom. The Nigerian Post-primary school teachers. *Global Journal of Human Social Sciences,* 10(4): 29-38.

Henry, N. U. (2014). *Community focal point to higher passion for STEM education in girls.* Paper presented at a United Nations Commission conference. Available at www.un.women.org/

Hollows, S., Rab, M., & Schulze, C. (2017). *Understanding female participation in STEM subjects in Pakistan.* Pakistan: British Council Publication.

Howe, S.A., Julias, M.C., & Herbers, J.M. (2014). Academic women: Overlooked entrepreneurs. *Peer Review*, 16(2): 17-20.

Iwu, R.U., & Azoro, A.V. (2017). A study on the barriers to participation of females in science, mathematics and technology education in Imo State, the way forward. *Educational Research and Reviews,* 12(17): 832-838.

Kerger, S., Martin, R., & Brunner, M. (2011). How can we enhance girls' interest in scientific topics? *British Journal of Educational Psychology* 81(4), 606-628.

McDaniel, A. (2015). The role of cultural contexts in explaining cross-national gender gaps in STEM Expectations. *European Sociological Review,* 32(1): 122-133.

Munoz-boudet, A.M., & Revenga, A. (2017). *Breaking the STEM ceiling for girls.* Retrieved from: http://www.worldbank.org/

Ndirika, M.C. & Agommuoh, P. (2017). Investigating factors influencing girls' participation in science and technology education in Nigeria. *Journal of Research and Method in Education,* 3(1): 50-54.

OECD (2016). Education at a glance 2016: OECD indicators.

Ojokoh, B.A., & Afolayan, A.H. (2015). *The influence of school experience on senior secondary school girls' IT study and career choice in Akure metropolis*. 2nd International Conference and exhibition (OWSD-FUTA), November 1-4, 2015, 562-567.

Ojokoh, B.A., Owoseni, M.T., Akinsowon, O.A., & Isinkaye, F.O. (2018). *Gender gap in career progression in STEM fields in two southwestern states of Nigeria*. 2nd National Conference and Exhibition (OWSD-FUSTA), November 1 – 4, 2015, 568-573.

Okorafor, A.O., Kakiri, W., & Okorofor, E.C. (2015). Women participation in science technology, engineering and mathematics in Nigeria: Challenges and way forward. *NAM Institute of the Empowerment of Women (NIEW) Journal*, 7: 99-112.

Onyekwelu, B.A. (2019). Comparative empirical analysis of female university enrolment in STEM courses in the geopolitical zones in Nigeria. *International Journal of Modern Education and Computer Science* 1: 24-32.

Salman, M.F., Olawoye, F.A., & Yahaya, I.A. (2011). Education reforms in Nigeria: Implications for the girl-child participation in science, technology and mathematics. *Educational Research Journal,* 1(1): 1-8.

Udeani, U. (2012). Increasing female participation in science and technology careers: Problems and suggested interventions from Nigeria. *Developing Countries Studies,* 2(1): 87-94.

UNESCO (2017). Cracking the code: Girls' and women's education in science, technology, engineering and mathematics (STEM). Retrieved from http://www.unctad.org/

UNESCO (2016). *Global Education Monitoring Report.* Retrieved from: www.unesco.org/publishing.www.unesco.org/gemreport/

Exploring the use of Facebook in teaching nomadic children in Kenya: A lesson for Nigeria

Louis Okon AKPAN
Department of Educational Foundations
National Open University of Nigeria

Abstract

Social networking sites have become increasingly popular with the rise of Web 2.0. Social networking sites such as Myspace.com, Friendster, WhatsApp, Hangout, yahoo messenger and Facebook have experienced surging popularity, particularly among nomadic children in particular and youths in general who use these new technologies to create instant communities of practice. This paper focuses on the use of Facebook (FB) in the teaching of nomadic children in Kenya. The paper is located within qualitative paradigm. Seven nomadic secondary schools and fourteen teachers were purposively selected. After data generation, it was transcribed and subjected to coding. The themes that emerged from coding were analysed using thematic analysis. The findings revealed that FB is used in the areas of sharing of current and archival information, learn educative games and brainstorm and collaborative learning. Similarly, because of its wider audience and easy to pass information in the class, teachers in nomadic schools preferred the use of FB in the teaching process. In light of the above, it is recommended that nomadic school teachers in Nigeria should study and adopt Kenyan's method of teaching nomadic children.

Keywords*: Facebook. Kenya. Nomadic children. Nomadic education. Teaching.*

Introduction

In recent times, thousands of nomadic children in Kenya access Facebook (FB) to connect with their families and friends. In this paper, however, nomadic children refers to a group of young people that migrate orderly, logically, systematically and purposefully from one particular geographical region to the other in search of their means of livelihood (Akpan, 2016). FB was invented on 4th of February in 2004. In this paper, FB is a social utility that connects one with more people around the world. The aim in which FB was invented is to give people the power to share/connect and make the world more open and interesting. Mazer, Murphy and Simonds (2007) assert that FB is a highly interactive virtual social network. The majority of nomadic children use FB to search for vital information. Others use the platform to take pictures and send it to their friends. Like most online social networking sites, FB is used to maintain existing and develop new friends in any part of the world (Bosch, 2016). Freeman (2014) opine that everyday use of social media technologies such as Facebook, Twitter and blogs could lead to classroom use and that held pedagogical values are a precursor to technology adoption. It has been observed that many nomadic children spend more time socialising with their friends on the FB (Milošević, Živković, Arsić & Manasijević, 2015). Abdullah and Chan (2016) reported that others use it to perpetuate sexual immorality. Despite the grey areas highlighted, Block (2009), Junco (2012) asserts that the use of FB by children allows for participation in various micro-communities, some of which are educational. In Kenya, there are about 50 million people (Fratkin, 2019). Out

of this number, seven millions are active FB users (Fratkin, 2019). Additionally, it is documented that from the seven million active FB users, thirty-three per cent are nomadic children (Parlasca, Hermann & Musshoff, 2019). In all nomadic secondary schools in Kenya, aside from the conventional chalk-board method of teaching, social networks particularly FB is deliberately used to support classroom-based teaching and learning. This newly technological innovation introduced in all nomadic schools by Kenyan government, spark the researcher's curiosity to examine the use of FB in the teaching of nomadic school children in Kenya with the view of recommending its adoption within Nigeria teaching and learning space.

Focus of the Study

Social network platforms have become increasingly popular with the rise of Web 2.0. Social networks such as MySpace.com, Friendster, WhatsApp, Hangout, Yahoo Messenger and FB have experienced surging popularity particularly among nomadic children in Kenya. Therefore, the focus of the paper is to explore the use of FB in the teaching of nomadic children in secondary schools in Samburu County of Kenya.

A brief description of research site

This study is located in Samburu County of Kenya. This county is geographically found in the former Rift Valley Province, Kenya. It covers a landmass of roughly 21,000 square kilometres in northern Kenya. This county stretches north from the Wuaso Ng'iro River to the south of Lake Turkana. The County is predominantly inhabited by Samburu (term literally mean shepherd) people. However, there are other smaller tribes such as Turkana which live along with Samburu people. The majority of Samburu people are nomads. In other words, cattle, goats, sheep and camels play a crucial role in the life and culture of Samburu people. These people are highly dependent on their livestock for survival. Aside from income generation from sell of their livestock, Samburu people's staple food consists of mostly milk extracted from cattle. In addition, when they kill cattle the blood is eaten.

Educationally, there are conflicting reports on the number of nomadic secondary schools established in Samburu County. While some says that there are twenty-one nomadic secondary schools established, others reported that there are twenty-eight. Due to the limited time for the study, the researcher would have embarked on physical numeration of all the nomadic secondary schools in the County to establish its number.

Objectives of the study

This study is guided by two objectives.

1. To examine ways in which Facebook is used as teaching instrument at nomadic schools in Kenya.
2. To examine why teachers used Facebook as a teaching instrument at nomadic schools in Kenya.

Research Questions

Based on the above stated objectives, the following research questions stated below were developed to guide the study.

1. How do Facebook used as a teaching instrument at nomadic schools in Kenya?
2. Why teachers used Facebook as a teaching instrument at nomadic schools in Kenya?

Literature Review

Before highlighting the key findings of this study, it is appropriate to some extent to provide a brief review of key literature that relate to the study under investigation. There has been a global surge in media coverage on the FB phenomenon. Though, most academic research on the subject is based on North-American and Asian countries (Bosch, 2016). A search of major libraries in Nigeria and online journals yielded no positive result for studies on FB within the Kenyan context. Despite the drought in the literature, it will not be out of place to search for literature globally and apply it within Kenyan context.

Within the context of mobile learning, FB is one of social network sites used the world over (Farooqi *et al.,* 2013). Research has shown that teachers are recognising the possibilities of tapping into the already popular social network site to get to students. In recent times, however, the Coronavirus disease (COVID-19) outbreak has resulted in the use of social platforms to educate learners globally. According to Mazer, Murphy and Simonds (2007), FB is a unique social networking site that creates connections between students and faculty within an online academic community. For instance, Hewitt and Forte (2006) looked at ways that students feel about receiving lecturers on FB, and how faculty participation affects professor-students' relations (Mazer, Murphy & Simonds, 2007). Findings from Hewitt and Forte's (2006) study indicated that students feel great because they were able to interact academically with the lecturers in certain topics in which they find it difficult to comprehend. Bosch (2016) argues that one should consider the large numbers of students on FB who are actively participating in group discussion hence adopt it as a potential educational tool.

In addition, Shier (2005) opines that FB is a major platform that students today are meeting, communicating, and building community, therefore, it can be used to stimulate collaborative student-led learning. In a similar vein, Morin (2007) said that FB also allow for the creation of groups for particular academic courses, with wall posting used to discuss elements of the course. A study conducted by Stutzman (2008) on students' use of FB in the University of North Carolina indicated that majority of the students preferred using FB to conduct discussions on some major lessons than in face-to-face interaction. In some universities in United States of America, some lecturers have gone so far as to integrate FB into their university courses. For instance, at the University of Pennsylvania, Barnes (2007) reported that a particular professor used FB to teach concepts of social networking and to foster critical thinking, having students investigate the connections among their peers. Despite the importance of FB in the teaching process, Bugeja (2006) warned on the dangers of FB, arguing that it can be a distractive tool in the classroom, and that the solution is not to block content. Rather, to

foster in students the ability to discern when and where technology may be appropriate or inappropriate.

Conceptual framework underpinning the study

Blended learning is used as a conceptual framework for conducting the study. Blended learning is not a new concept. It has its origin from corporate training and development in the United States of America. It is believed to have made its first appearance in the late 1990s. The term 'blended learning' has become one of the hottest buzzwords in education in recent time. According to Makri, Papanikolaou, Tsakiri and Karkanis (2014), blended learning is the thoughtful fusion of face-to-face and online learning experiences. In other words, blended learning combines "face-to-face classroom methods with online activities to form an integrated instructional approach" (Rydeen, 2011: 38). The key principle guiding blended learning is that face-to-face, oral teaching and online teaching process are optimally integrated, such that the strengths of each are blended into a unique learning experience congruent with the context and intended educational purpose (Garner & Oke, 2016). In the blended learning space, online interactions provide opportunities for students to create and build relationships. Garner and Oke (2016) maintain that the key digital elements of a blended class is the 'discussion forum' For instance, initially teachers used to ask students to do certain tasks individually and on face-to-face. However, in recent times they are asked to do it through FB and the students' performance is evaluated by e-portfolios. The use of FB by students enables them to share their thoughts and ideas with one another in the class. In furtherance to the above, because of the interactive nature of this environment, students are opportune to learn more about one another as they engage in conversations and share their thoughts and ideas about the topic of the discussion forum (Garner & Oke, 2016). From the above discussion, it is appropriate to adopt the concept to understand ways in which FB is used to teach in nomadic schools in Kenya.

Research methodology

In the study, qualitative research approach was adopted. The premise of qualitative research is that it involves a subjective systematic approach to exploring and describing life experiences that enable meaning to be attached to emerging themes (Burns & Grove, 2010). This approach was used as the researcher was aimed at exploring the use of FB in the teaching of nomadic children in Kenya. In line with qualitative approach, interpretive paradigm is adopted. In qualitative approach, the goal of interpretivism is to value subjectivity (Khan, 2014), and eschew the idea that objective research on human behaviour is possible (Thanh & Thanh, 2015). Following the point discussed above, the choice of interpretive paradigm is to understand from the participants' perspective the use of FB in the teaching of nomadic children in Kenya.

A total of fourteen teachers from seven nomadic secondary schools were purposively selected from the population to participate in the study. The criteria used for the selection of the participants were based on the following: teaching in nomadic school for more than five years and the ability to use FB during teaching. The instrument for information generation was developed. In other words, twelve interview questions were

developed which border on the topic under investigation. According to Atkins and Wallace (2012), interview is frequently used in the collection of data in qualitative research due to its ability to allow the researcher to engage with research participants individually and on face-to-face basis. The researcher applied online to Executive Secretary, National Commission for Nomadic Education in Kenya (NACONEK) for permission to conduct an interview. The application was granted after weeks of delay. Similarly, letters were dispatched online to all managers of the selected schools informing them of the intention to carry out research. On the said letters, date, time for the interview and the names of the participants selected were clearly stated. In the same manner, a consent letter was designed and presented to the participants to indicate their willingness to partake in the study. For confidentiality purpose, names of the participants were replaced with pseudonyms such as Azima, Ayo, Azizi, Ayubu, Abbo, Aruzi, Abarika, and Bavana. Others are Beno, Busara, Chilemba, Anasa, Angalia and Barasa.

The researcher was permitted for two week by Dean, Faculty of Education, National Open University of Nigeria (NOUN) to travel to Kenya for conduct of the interview. Before the commencement of the interview, the consent letter was given to each participant to sign for voluntary participation in the research. During the interview session with all the participants, audio recorder and field-note were used as tools to elicit information. After the interview, information collected was transcribed manually. Furthermore, the transcribed data was subjected to coding. However, during pre-coding, the researcher was compelled to circle, highlight or underline significant words or sentences on the text. This was done in line with Theron's (2015) position who urged researchers to start the coding process whilst they are collecting the data, bearing in mind that the codes may change during later cycles. According to Creswell (2015: 156), coding is "the process of analysing qualitative text data by taking them apart to see what they yield before putting the data back together in a meaningful way." Similarly, Saldaña (2016: 4) argue that "code in qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing and/or evocative attribute for a portion of language-based or visual data." After coding, themes that emerged were analysed using thematic analysis.

Findings and discussion

From the first research question which bordered on ways in which Facebook is used as a teaching instrument at nomadic schools in Kenya, the majority of the participants interviewed revealed that FB is used in the following ways: sharing of current and archival information, learn games and brainstorm and collaborative learning..

Sharing of current and archival information

Teachers interviewed revealed that they used FB to share some current and archival information in the class. They cited some topics in geography in which they used FB to demonstrate to the nomadic students in the class. According to one of the participants (Ayo), he said that anytime he taught topics such as map work, types of rocks, erosion features, types of vegetation or rivers, he often used FB to present these geographical

features to the students. In a related report, Azizi stated that in her biology lesson, FB is used to demonstrate some task to her students. When probed further how she used FB to teach in biology class, Azizi replied:

> *FB is one medium I adopted to teach my students. For instance, in my practical biology lesson, specimen such as human digestive system, animal cells, amoeba, among others are illustrated and circulated on the FB (personal interview with Azizi, November, 2019).*

From the quotation, it is obvious that FB was used to teach some important geographical and biological features in nomadic schools. Most nomadic school teachers used FB to show the diagram of human digestive system, animal cells and other important human organs. Furthermore, it was indicated that teachers used FB as a form of to teach some topics in geography lesson such as map work, river and types of rock formation. From the interpretive perspective, the use of FB enhances students' understanding of subject content hence impact positively students' academic performance. The finding is supported by Manca and Ranieri (2016) who claimed that FB application as an instructional material significantly improve students' academic achievement. Similarly, it was earlier stated by Baran (2010) that the use of FB by the younger generation of learners does not only quicken students' comprehension of the subject matter, but it is a simple way of making them (students) to embrace e-learning in formal education setting.

Learn educative games

All the participants interviewed unanimously said that there are different kinds of games on FB. They further reported that most of these games are extremely educative. For instance, Beno and Busara mentioned educative games used teaching mathematics and English language to include crossword, math game and scrabbles. Aside from the above two subjects, Aruzi declared that as a business studies and commerce teacher he adopted this medium to pass instruction to all his students during the lesson. In a similar vein, Abarika and Abbo maintained that supway surf, dr driving, cooking fever, checkers, sniper, temple run and dream legend are some of the educational puzzles they asked their students to download and used on the FB. Specifically, Abarika stated that during home economics lesson different kinds of food and the method of its preparation shared to all her students. Abarika concluded by saying that the use of FB in the teaching of business studies aside from effectively enhancing students' learning ability, it prevent the school authority from spending huge fund in the purchase of materials for practical.

From the narrative, it was established that there are educational games such as checkers, sniper, dream legend, among others on the FB in which teachers adopted in teaching nomadic children in Kenya. It was revealed that subjects like English language, mathematics, business studies and home economics deployed different types of games on FB as a teaching strategy during lesson. From the interpretive perspective, it has been widely documented that there is individual differences between/among students. Students have different ways on learning, while some are cognitive-based, others are either affective or psychomotor-based. Therefore, the use

of games in FB as a teaching strategy enhances cognitive, affective and psychomotor skills of a student which invariably impact positively their academic performance. This finding is in agreement with Hamat, Embi and Hassan's (2012) position who said that students made use of FB for activities that were common for formal learning and they had a more positive view of social networking site and its effects on their lives as students. In addition, Ahern, Feller, and Nagle (2016) FB is one of the most popular social media sites that has gained a unique position as a learning technology for educational purposes.

Brainstorming and collaborative learning

From the analysis, it was discovered that FB has brought new opportunities for knowledge sharing and learning among students and teachers in nomadic secondary schools. Barasa and Beno were of the view that FB is used to promote online discussion on topical issues between teacher and students. When interrogated on the possible ways of online discussion between a teacher and students, Beno declared:

> *Sir, I want to make it very clear that this is digital age, where face-to-face contact between a teacher and his/her students is no longer viable. Therefore, cooperative and collaborative learning among students is achieved through the use of FB (personal interview with Beno, November, 2019).*

In a similar manner, Chilemba disclosed that although FB was not originally designed for educational purposes, but in recent times it has been used to enhance the learning among students and create a more conducive classroom environment. This is because a teacher does not need to move around the class during the lesson. Rather, he/she pass the information across to every student at the same time on their FB page. Notwithstanding Barasa, Beno and Chilemba's position, Ayubu said that FB facilitated brainstorming session among students. When asked to explain how FB influenced brainstorming, Ayubu narrated:

> *Students in my class usually use FB to contact their classmates on questions regarding class assignments. They share ideas and brainstorm on the assignment given for better understand of the subject matter. (personal interview with Ayubu, November, 2019).*

It is evident from the analysis that FB significantly enhances both cooperative and collaborative learning among students. It was indicated that some students are very shy to contribute during lesson, while others were conformable expressing themselves in the class. Therefore, the use of FB as a medium of instruction appears to have bridged the gap between the introvert and extrovert students hence creating a storming session among them without necessarily being physical. From all indications, this finding is at the same pace with Balakrishnan (2017) position, this scholar postulated that despite the different perspectives of students from both countries on FB usage, they are positive towards using FB to enhance learning because it allows active interaction, improve communication with academics and peers, collaborate with experts, have easy access to study materials and maintain their social network at the same time.

On the reasons for teachers' used of FB as a teaching instrument at nomadic school in Kenya, it was reported by all my participants that FB has audience and FB is easy to pass information in the class.

FB has a wider audience

From the interview conducted, the participants unanimously said that the key reason they adopted FB for teaching is because of it wide audience. Specifically, Anasa and Barasa reported that all students in the class subscribe to FB platform. Abbo added that he observed that all his students in chemistry lesson not only owned mobile phones, but they have FB application (app.) that they used for communication and exchange of pictures. In fact, Abbo went further to say that some students who for one reason or the other absence themselves from the class usually have idea on what was taught in the lesson. This is possible because students who are present in the class immediately send the topic of the lesson to those students who are absent. In addition, Aruzi said that though socialisation with peers and friends from far and near made students in the class to use FB app, however, he maintained that he was forced to introduce lesson through FB platform because of students' utilisation of this app.

In the same manner, Beno and Busara were of the view that they have large number of students offering subjects like mathematics and English language. For teacher to teach a class of about 52 students effectively was an uphill task. Conversely, the same number of students understanding a teacher adequately and properly is absolutely impossible. Consequently, the use of FB to teach appears to resolve the challenges associated with large class.   In support to the above assertion, Selwyn (2007) held that FB in recent times has become the social network site of choice to college teachers because of its reach to the wider audience in and outside the class. Additionally, Smith (2016) stated that students believed that FB is a non-intrusive information tool that which provide valuable communications to a wider audience. According to Rutter, Roper and Lettice (2016), the ability for students to be able to interact/ask question to the teacher and having them answered via FB is a touch that could not exist in the conventional class setting.

For easy access and information dissemination

Another theme which was so pronounced on reason for the use for the FB in nomadic schools was the easy ways one used to access and dissemination of information to nomadic children in the class. Abbo asserted that despite the fact that students in the class used FB for immoral activities with one another, it is also an easier way to access and circulate information to students who are either present or absent in the class. The researcher was forced probed further the kind of immoral activities students use FB for. In response, Abbo said:

> *I have come to the realisation that few students send love messages to their girl or boy friends. In fact, some bad ones even send nude pictures. This is one of abuses of FB by students (personal interview with Abbo, March, 2019).*

In addition to the above narrative, Ayubu responded:

> *I want to tell you that there are some enumerated risks associated
> with FB users which include criminal activities like identity theft, fake
> contacts which is very prevalent today, sexual abuse, cyber bulling
> or harassment and unsuitable advertising (personal interview with
> Ayubu, March, 2019).*

In contrast to Abbo and Ayubu assertions, Chilemba said that FB users can easily access and circulate information during lesson. Ayubu quickly cited example in which FB was used to quickly access information in history lesson. He maintained that a topic on 'Pan African Nationalism' was taught in his class, the pictures of some Pan-Africanists such as Dr Azikiwe of Nigeria, Dr Jomo Kenyatta of Kenya, Dr Nkrumah of Ghana and Dr Nyerere of Tanzania were quickly accessed by two of his students and circulated in the class before the lesson was over.

From the narrative, though it was reported that FB users (students) perpetuated immorality such as cyber bulling using FB page, however, all the participants unanimously agreed that its importance during the lesson outweigh its disadvantages. From the interpretive position, it may be concluded that pockets of nomadic students actually used FB account to lure innocent ones into criminalities. Apparently, this might be the reason there are school violence of all sorts in most of the nomadic secondary schools in recent time. In spite of the ills stated above, FB users were able to access and circulate important educational information as it relates to the lesson as quickly as possible.

Discussion of findings

The findings of this study indicated that social media platform such as FB was mostly used as instructional facility in nomadic secondary schools. For instance, it was discovered that nomadic schools teachers especially in arts, social sciences and natural sciences used the medium to illustrate salient topics to the students. Subjects such as English, Mathematics and Geography to mention but a few often dreaded by the majority of students were made simple through the use of games related or pictorial method. Alfirević (2015) have argued that games and pictures have been proven to be interesting and effective for acquiring English and increasing their motivation to learn the language. However, da Silva (2020) was of the view that students' enjoyment of vocabulary learning may stem from the reading activities and application of fun games. In was also revealed that the use of FB enhanced collaborative learning among students within or outside classroom setting. It is pertinent to argue that by using FB to work collaboratively allow students to work on their strengths, develop critical thinking skills and creativity, validate their ideas and appreciate a range of individual learning styles. From all indications, the use of FB gives the teacher an opportunity and structures by which students can help and support one another in their tasks. The findings is in agreement to Lee's (2018) position who held that FB proved to be an effective learning tool in supporting discussion, interaction, communication and collaboration between teachers and students, and among students.

The above assertion was canvassed by Ferdig (2007) when he stated that FB promote social interaction between students, potentially supporting active learning, social learning, and student knowledge construction within a student-centred, constructivist environment. Findings also indicated that FB has become the social network site of choice by nomadic secondary schools teachers and students. The reasons adduced for the use of FB were based its growing audience and easy information dissemination to students. Teachers used FB to connect easily with their students on assignments, useful links, and samples of work outside of the classroom. Aside from teachers, students used FB to contact their classmates on issues such as questions regarding class assignments or examinations as well as collaborate on assignments. From all indications, this singular act enables nomadic students to detach from teacher-centre to students-centre method which is adopted in all nomadic secondary schools in recent times. The findings affirmed the earlier position held by Bryant, Coombs and Pazio (2014), Shaw (2017) that FB offers powerful development and distribution capacities that allow students and groups to craft, control, and circulate messages to potentially large and widely dispersed audiences at relatively low cost.

Conclusion

The study explored how and why nomadic teachers use FB for teaching in formal nomadic schools. The conclusion provides findings to the set of questions identified at the outset of the paper. From all indications, the disadvantages of FB usage were considerably lower in comparison to the advantages hence its adoption in nomadic secondary schools in Kenya. In light of the above, it was discovered that FB does not negatively affect students' academic performance, rather, it paves the way for the sharing of current and archival information, for cooperative and collaborative learning among nomadic school children. Furthermore, it provides information to the wider audience and easy transmission of information to all the members of the class at a shortest possible time.

Recommendations

In all the nomadic schools visited in Nigeria, teachers still use the traditional chalk-and-board method to teach in their various classes. Similarly, the students-centre method of instruction being proposed by education scholars and researchers and adopted by other countries is yet to find expression within Nigeria educational space. Therefore, the achievement recorded within Kenya schools teachers in the context of the use of FB as a teaching aid, should be emulated by nomadic school teachers in Nigeria. From all indications, if FB is adopted in Nigeria educational setting, it will not only bridge geographical distance between the nomadic students and teachers, but it will also help students to be interested in learning and sharing of external instructional materials among themselves.

References

Abdullah, A.D.A., & Chan, C M. (2016). Social media use among teenagers in Brunei Darussalam. 15th Conference on e-Business, e-Services and e-Society (I3E), Sep 2016, Swansea, United Kingdom. pp.195- 205, ff10.1007/978-3-319-45234-0_18ff. ffhal-01702207f

Ahern, L., Feller, J., & Nagle, T. (2016). Social media as a support for learning in universities: An empirical study of Facebook groups. *Journal of Decision Systems*, 25(1): 35–49.

Akpan, L.O. (2016). *An investigation into the history of nomadic education policies in Nigeria, 1986-2009.* Unpublished doctoral dissertation. Urban, South Africa: University of KwaZulu-Natal.

Alfirević, T.M. (2015). The influence of games on English language vocabulary learning of second and third grade elementary school students. *Методички видици*, 6(6): 153-170.

Baran, B. (2010). Facebook as a formal instructional environment. *British Journal of Educational Technology*, 41(6): 146-149.

Balakrishnan, V. (2017). Social media and their use in learning: A comparative analysis between Australia and Malaysia from the learners' perspectives. *Australasian Journal of Educational Technology*, 33(1): 81–97.

Block, G. (2009). News (SDSU) Classrooms in a Twitter. Retrieved from: http://newscenter.sdsu.edu/

Bryant, P., Coombs, A., & Pazio, M. (2014). *Disruption, destruction, construction or transformation? The challenges of implementing a university wide strategic approach to connecting in an open world. In 2014* OCW Consortium Global Conference: Open Education for a Multicultural World.

Bugeja, M. (2006). Heads up: Facing the Facebook. Retrieved http://www.vpss.ku.edu/

Burns, N., & Grove, S. K. (2010). *Understanding nursing research-ebook: building an evidence-based practice*. London: Elsevier Health Sciences.

Creswell, J. (2015). *30 essential skills for the qualitative researcher*. Los Angeles, CA: SAGE.

da Silva, A. M. (2020). The teaching of English vocabulary through pictorial reading texts and games to a group of primary school students in East Jakarta. *Riau Journal of Empowerment*, *3*(1): 1-15.

Farooqi, H., Patel, H., Aslam, H.M., Ansari, I.Q., Khan, M., Iqbal, N., Rasheed, H., *et al.*, (2013). Effect of Facebook on the life of Medical University students. *International Archives of Medicine*, 6: 40-40.

Ferdig, R.E. (2007). Editorial: Examining social software in teacher education. *Journal of Technology & Teacher Education,* 15(1): 5-10.

Fratkin, E. (2019). *Surviving drought and development: Arial pastoralists of northern Kenya*: Routledge.

Freeman, W. (2014). Taming social media in higher education classrooms. In *Proceedings of the 9th International Conference on Networked Learnin*g, 359-363.

Garner, B. & Oke, L., (2016). *Blended learning: Theoretical foundations: The brief report series from the Center for Learning and Innovation*. Indiana: Indiana Wesleyan University.

Hamat, A., Embi, M.A., & Hassan, H.A. (2012). The use of social networking sites among Malaysian university students. *International Education Studies*, 5(3): 56–66.

Hewitt, A., & Forte, A. (2006). Crossing boundaries: Identity management and student/faculty relationships on the Facebook. *Poster presented at CSCW, Banff, Alberta*, 1-2.

Junco, R. (2012). Too much face and not enough books: The relationship between multiple indices of Facebook use and academic performance. *Computers in Human Behavior*, *28*(1): 187-198.

Khan, S.N. (2014). Qualitative research method: Grounded theory. *International Journal of Business and Management*, *9*(11): 224-233.

Lee, C.E. (2018). *Assessing the uses and impacts of Facebook for teaching and learning in classroom education contexts in Malaysian universities*. Unpublished doctoral dissertation. Lancaster, England: Lancaster University. .

Lipsett, A. (2008). Facebook a valid educational tool, teachers told. *The Guardian Online.* Retrieved on 20th March 2019. On http://education.guardian.co.uk/schools/story/

Makri, K., Papanikolaou, K., Tsakiri, A., & Karkanis, S. (2014). Blending the community of inquiry framework with learning by design: Towards a synthesis for blended learning in teacher training. *Electronic Journal of e-Learning*, *12*(2), 183-194

Manca, S., & Ranieri, M. (2016). Is Facebook still a suitable technology enhanced learning environment? An updated critical review of the literature from 2012 to 2015. *Journal of Computer Assisted Learning,* 1: 1-26.

Mazer, J.P., Murphy, R.E., & Simonds, C.J. (2007). I'll see you on 'Facebook': the effects of computer-mediated teacher self-disclosure on student motivation, affective learning, and classroom climate. *Communication Education,* 56(1): 1-17.

Mayer, A. & Puller, S.L. 2008. The old boy (and girl) network: Social network formation on university campuses. *Journal of Public Economics,* 92: 329-347.

Milošević, I., Živković, D., Arsić, S., & Manasijević, D. (2015). Facebook as virtual classroom–Social networking in learning and teaching among Serbian students. *Telematics and Informatics*, *32*(4): 576-585.

Morin, D. (2007). *Education application opportunity*. Los Angeles: Sage.

Nicole, K. (2007). *Lookabee's Facebook apps for teachers*. Retrieved from:
http://mashable.com

Parlasca, M. C., Hermann, D., & Musshoff, O. (2019). *Interactive social distance and
trust: Different measuring approaches among semi-nomadic pastoralists in
Northern Kenya*. Paper presented at the 93rd Annual Conference of the
Agricultural Economics Society, University of Warwick, England. 15 – 17 April
2019

Rutter, R., Roper, S., & Lettice, F. (2016). Social media interaction, the university brand
and recruitment performance. *Journal of Business Research, 69*(8): 3096-3104.

Rydeen, J. (2011). Blended learning. *American School and University*, *83*: 38.

Saldaña, J. (2016).*The coding manual for qualitative researchers*. London, UK: SAGE.

Selwyn, N. (2007). "Screw blackboard…do it on Facebook!" An investigation of
students' educational use of Facebook." *Presented at the "Poke 1.0 – Facebook
Social Research Symposium,"* University of London.

Shaw, C. M. (2017). Using Facebook as an educational resource in the classroom. *In
Oxford Research Encyclopaedia of International Studie*s. 1: 1–14.

Shier, M. T. (2005). The way technology changes how we do what we do. *New
Directions for Student Services*, 112: 77-87.

Smith, W.S. (2016). *Community college recruiting through Facebook.* Unpublished
doctoral thesis. Mississippi, USA: University of Southern Mississippi.

Sterling, G. (2010). Facebook passes. Retrieved from http://searchengineland.com.

Stutzman, F. (2008). The vibrancy of online social space. In B. Rigby (Ed.), *Mobilizing
generation 2.0: A practical guide to using web 2.0 technologies to recruit, engage
& activate youth*. (12-25), New York, USA: Jossey-Bass.

Thanh, N. C., & Thanh, T. T. (2015). The interconnection between interpretivist
paradigm and qualitative methods in education. *American Journal of Educational
Science*, *1*(2): 24-27.

Theron, P.M. (2015).Coding and data analysis during qualitative empirical research in
practical theology. *Original Research*, 1-9.

A global perspective of the critical role of the state, schools and parents on the political education of youth

Kazeem Ajasa BADARU
Faculty of Education
University of Fort Hare, South Africa

Abstract
There is a concern that countries have become bedeviled with the youth disengagement from participation in the political processes expected of the citizens. This perceived participation conundrum is described by Manning and Edwards as the 'Civics deficit'. I contend that the solution lies in political education of youth. Political education is an important component of a nation's educational system which aims to cultivate in youth; citizenship knowledge, skills and values for their effective and responsible participation in public life in general and in democratic processes in particular. This theoretical paper, therefore, explores the broad contexts, global and other perspectives on political education of youth as well as the critical roles which the state, schools and parents have to play in order to establish the contributions of this study to the body of the literature.

Keywords*: Citizenship skills. Democracy. Parents. Political education. Schools. The state.*

Introduction
Education has been defined as the inculcation of the societal values, norms and beliefs into individuals for the purpose of preparing them skilfully and mentally to solve a myriad of problems confronting the society and contribute meaningfully towards its well-being and developmental projects (Asemah, 2010). The societal norms, customs, needs and desires are transmitted to the people through education. Education is a necessary instrument which provides students with knowledge about functions of the civil society (Bennion, 2006) and helps them to adjust to its way of life from time to time. This implies that education serves as an instrument to construct and reconstruct the minds of individuals through the learning of their society and how to adapt to societal ways of living. Politics, on the other hand, is a democratic process that allows citizens to freely express themselves on political or public issues, formulate their expectations, programmes or requirements without any fear of repression, vote in elections, engage in civil society organisations or political parties, and vie for an elective post as candidates in an election.

People learn about politics through their education in schools, colleges, polytechnics and universities. Those aspects of education that equip people with the political knowledge, political skills and political values that empower them in the performance of their civic responsibilities are referred to as political education in this study. Crittenden (2018) argues that schooling is not only responsible for the political education of youths. He believes that there are several other institutions such as families, mass media, religious bodies which are equally involved in educating the youths for the understanding and performance of their civic duties. Intermittently, political education may be used interchangeably to mean civic education, citizenship education or

education for democratic citizenship in this study. Nwankwo (2012) opines that no matter the name given whether political education or civic education, the two terms can be used interchangeably. He further submitted that the two terms (political education and civic education) are written together as 'Political/Civic Education' in the school curriculum of the German education system. It is therefore appropriate to call political education other names such as the civic education or citizenship education in this study.

Crick (2008) describes civic or political education as the basic way through which the individuals' acquisition of relevant competencies for their participation and engagement in the democratic processes is facilitated and ensured. He notes further that that civic or political education is incorporated into the public education curriculum, as a means to inculcate political knowledge and skills to understand the necessary tenets of government and become familiar with democratic norms and values in a country. In short, political education has the objectives of cultivation of virtues, acquisition of relevant knowledge, development of necessary skills required and anticipated for citizens to meaningfully participate in all spheres of national life. Higher education (most especially universities) has enormous responsibilities to perform to encourage participation and engagement in political life (Campbell, 2006; Misa Anderson & Yamamura, 2005).

According to Crittenden (2018), civic education, no matter when and how it is accomplished, has the objective of preparing citizens of a country, especially the youth, to become responsible in civic duties. In the same vein, Vasiljevi (2009) asserts that the *Civic and Ethical Education* is given various names in several countries which include civic culture, education for democratic citizenship, civic engagement, civic education, political education and citizenship education. "Citizenship education typically refers to specific civic education programmes; as in many countries, educational curricula include subjects such as 'citizenship studies' or 'history' with explicit political education content" (Luescher-Mamashela, 2011: 10). Citizenship or political education is offered as an academic subject in schools in a way that is similar to politics or sociology being offered as a course of study in higher institutions of learning such as the universities. Its curriculum may be planned in various manners with different nomenclatures in different countries.

The general goal of political education is to equip the learners with the sense of civic responsibilities and ultimately grow their interest in taking active part in the political activities of the state. More importantly, learners have to learn about their democratic societies so as to develop the interest to participate in them and that way the society can guarantee the survival and further development of its democratic way of life. By implication, political education as suggested by Leung and Yuen (2009) is intended to serve various needs of government and citizens in various political systems. For democracy, it is taught and learnt as a form of knowledge to provide developmental support for a representative government and adherence to rule of law including respect for human rights. It therefore implies that, the aims and objectives of political education would include allowing students to develop political awareness, political interest and independent capacities to make informed judgment about political issues of local, national and international concerns.

Why is political education of youth important?

Bennett (2018) summarizes the importance of youth political education when she remarks as follows:

> *…an improvement in mandatory political education would, in a matter of a few years, increase the number of young people at the polls, increase political engagement as a whole and decrease the levels of vitriol and misinformation that seem to be pervading through our current political landscape* (Bennett, 2018:1)

Political education of youth is important because it equips them with the knowledge and skills for understanding of politics as well as relevance and challenges facing democratic societies. It is a school subject that formally and consciously promotes youth's engagement with the media, civil society, the economy and the law relating to national and supranational politics and governance. Political education is highly beneficial to the youth as they would be prepared to develop keen interests in performing their civic duties such as voting for selection of new representatives to carry out governmental functions. The youth would also become capable to discuss politics with so much passion and interest at home, volunteer themselves for community services, become much more confident to participate in public debate on issues of concerns especially those related to politics, and freely establish communication with their elected officials in government. Litvinov (2017) argues that political education equips the youth with the critical thinking skills, civil debate skills, and classroom confidence skills for academic purposes.

An overview of historical development of political education

The origin and development of political education dates back to the ancient Greek city-state, Athens with the aim of creating active and participating citizens for the then Athenian direct democracy (Bayeh, 2016). Civic/political education has a parallel development with democracy. Hence, it is apposite to conclude that Athens served as the foundation for modern civic education. Subsequently, the dawn of revolutions in Britain (1688), America (1776) and France (1789) contributed a great deal to the development of civic education (Bayeh, 2016), in that those revolutions brought forth new democratic concepts and principles which, in turn, paved the way for the advancement of Civic/Political education in Europe and the rest of the world.

Historically speaking, schools have long been regarded as the vital institutions where democratic citizens can be groomed in the interest of all democracies. As argued by John Dewey, no democratic nation would ever exist without citizens being educated about the democratization process (Kuş & Tarhan, 2016). He submitted further that educational institutions played a crucial role in the moulding of individuals who would be conscious of their democratic duties, rights and obligations. The democratization process introduced a lot of changes across the globe as far back as the 1980s and through the early 1990s as world leaders had to embark on the quest whereby the school systems were saddled with the onerous responsibilities of imparting knowledge and values of the democracy. Consequently, the teaching and learning of political/citizenship education resurfaced and its importance was largely emphasized for the survival of democratic processes (Kuş & Tarhan, 2016).

However, civic/political education became very popular in the 1990s as an instrument for promoting democracy (Bayeh, 2016). A number of factors necessitated the delivery of civic education such as the emergence of democratic states and multi-cultural societies, global injustice and inequality, concern about civic and political engagement, and the anti-democratic and racist movements (Birhanu, 2012). Modern Civic education was first practised in the educational system of the United States at the beginning of the 20th century (Vasiljevi, 2009). Today, it has been expanded throughout the world including African countries. Most African countries had to introduce political education in the form of subjects such as citizenship education, history or civic education that would teach political knowledge for the purpose of building the democratic culture and practice in their youth.

Political education in international context

Internationally, studies on political education in educational institutions are largely restricted to the analyses of the curriculum and course materials (Børhaug, 2008). Political education has, however, been criticized from the international perspective over the approach to its study. Biesta and Lawy (2006) contend that international approach to the political education research has been concentrated on the content which has to be learned by the students as against its context and practice. These authors argue that learning about political education is not enough, but also the content and lessons have to be put into practical use in a way that is beneficial to the individual students' active involvement in the nation's democracy and participation in the global politics. They therefore advocate for change in the international approach to the study of political education by shifting the research attention away from the content to the practicability of the political education lessons. In other words, it is more important to study how the knowledge of political education is fostering or not fostering the participation of students in the democratic governance at all levels, be it in the schools, colleges, universities, provincial or national levels of politics (Biesta & Lawy, 2006).

Political education teaching is intended to arouse the political consciousness of the students in a way that they may become politically interested in the affairs of the state and be encouraged to contribute meaningfully towards the stability of their country's democratic governance and political system (Børhaug, 2008). To this end, political education has gained some international recognition in a number of countries across the globe (Frazer, 2010). Most of the European countries have long been facing problems of declines in political participation due to increased and continued political apathy causing decreased voter turnouts. Political education has received so much attention as an antidote to the problems of declining interest and participation in politics. European countries' national curricula have included the citizenship education which is taught either as a distinct and separate school subject or as an integral part of another school subject/learning area, or in most cases as a general theme cutting across various school curricula and programmes. Political education is taught as a separate mandatory school subject in not less than twenty European countries beginning from the primary level and more importantly at the secondary school level (De Coster *et al.*, 2012).

Interestingly, most of these countries in Europe devote a considerable amount of time to the teaching and learning of political education. For instance, citizenship education is

taught for a period of 12 years in France while Bulgaria and Turkey have devoted duration of 12 months to the teaching and learning of citizenship education. The multi-dimensional diversity of the nature of citizenship in Europe is well considered and articulated in their school curricula in such a way that their educational objectives are theoretically defined in terms of the knowledge acquisition, development of skills, attitudes and values including the encouragement of active participation of students in activities within and outside of schools. The curricula of the European countries' citizenship education are indeed very broad covering a wide range of issues such as the well-established principles and characteristics of democracies, cultural identities and diversities, sustainability of societal development and understanding of European and international politics (De Coster et al., 2012).

Germany: Political education in the Federal Republic of Germany was introduced as a post-war initiative with a view to inculcating values of democracy, pluralism, solidarity and tolerance into the citizens' social practices (Cremer, n.d). Political education programmes are provided for all citizens in Germany but much more attention is given to the young ones. The German political education aims at imparting knowledge of politics and society into citizens, enabling citizens' judgement and encouraging them to participate in political processes. These are the goals declared by the German government believing that democracy can only thrive when citizens responsibly and actively participate in the democratic processes. The official declaration reads as follows:

> *Political education shall impart people's knowledge about society, state, European and international politics and socially important developments in the fields of economy, culture, technology and science. It shall enable forming judgement on social and political events, enable one to claim one's rights as well to discharge one's tasks, assume responsibility towards fellow citizens, society and nature and encourage participation in the creation of free and democratic social and state order* (Cremer, n.d:1).

Children and youth receive political education as an integral component of the official curriculum in schools. The schools also serve as an avenue for the learning and practice of democratic participation as the students are allowed to choose their own leaders through election. Student leaders also serve on various school committees in order to participate in the decision-making processes concerning their own affairs. In addition, there are a number of agencies of government and non-governmental institutions that provide all Germans some sort of citizenship education. These organizations include German Federal Agency for Political Education, Trade Unions, Youth Organizations of the bigger Parties, and political Foundations. They are all working for the promotion of effective understanding of issues relating to politics and citizenship, fostering political awareness and increasing citizens' interest in political participation in Germany (Cremer, n.d).

Political education in Germany has the goal of inculcating relevant knowledge of politics in the learners for the purpose of increasing their interest and participation in the democratic processes. The German society relies on its system of political education to facilitate the development of a citizen that is mature, responsible and interested in political activities. This helps to have a sound capacity to exercise some influential judgment on public policies and actively participating in all forms of political

engagement (Bruen, 2014). In addition, German political education is designed to foster and develop skills, knowledge and capabilities in individual learners to be able to come to terms with their civic rights and obligations under the constitution of the country as responsible and participatory citizens. Previous studies, however, demonstrated that German political education programmes in schools have not successfully led to increased political interest and adequate participation in politics (Bryan & Bracken, 2011; Bruen, 2014).

England: The subject of citizenship education became a mandatory part of the National Curriculum in September 2002 as recommended by the 1998 Report (famously known as the Crick Report) submitted by the Citizenship Advisory Group (CAG) ably led by Professor Bernard Crick to the authorities prompted by the perceived deficient youth participation in election and political engagement in England (Keating, Kerr, Benton, Mundy, & Lopes, 2010). To confront this situation headlong, political education is offered to all learners who fall between the ages of 11 and 16 years old in England (11-16 years). Undoubtedly, the Citizenship Education at the national level in England is making a lot of contributions to the general aims of the public education. All learners are expected to grow and become successful, courageous and responsible nationals capable of contributing positively towards the societal growth and development. The national curriculum is built around important issues and themes which include among others; concept of democracy, justice, human rights and civic duties, identities and diversity, to mention but a few, necessary for the learners to develop an understanding of the democratic processes, critical thinking skills and enquiry, and abilities to take well-informed decisions. The curriculum therefore is aimed at developing learner's cognitive skills that would enhance participation in communities as socially and politically responsible individual citizens (Hamdan, 2017).

Ireland: In the 1990s, political education was introduced in the form of citizenship studies in the Irish Republic. It is simply regarded as 'Civic, Social and Political Education' (CSPE) and is offered to learners between 12 and 16 years old. However, a new subject named "Society and Politics" was introduced in 2009 and was meant to be taught as an additional school subject to learners aged 16-18 years in the Irish Secondary Schools (Hamdan, 2017). Faas and Ross (2012) in their study noted that there was a disconnection between the Irish political education goal and the material contents of the political education curriculum and the available textbooks for the teaching and learning of political education in Ireland. The general aims of the Irish political education include preparing the young ones to become personally and socially confident and responsible, be able to develop morally, participate actively in the political life, and acquire skills, knowledge and capacity for making judgmental decisions as citizens (Bruen, 2014). Previous research shows that the Irish political education programme has not yielded any success in positively affecting increased political interest and participation in the democratic governance in the country (Bruen, 2014).

France: In France, political education is simply called as Education Civique, Juridique ET Sociale (ECJS) in the high school and "education civique" in the middle school and primary school. Following the terror attacks in Paris that occurred between 7th and 9th January, 2015, the French government made the decision to reintegrate political education into the country's education system with the view to making students become

responsible and right thinking citizens. By implication, the decision of the government is expected to return teachers' authority, strengthen the values and ideals of the country; ensure the promotion of societal values and principles through the community services. This new educational plan involves training of teachers, signing of an annual agreement by students and their parents or guardians for students to engage in community service, undertakings as punishments for their wrong doings and to also observe a day of *laïcité*, or secularism on 9th of December every year (Hamdan, 2017). A study conducted on students in college by Almond, Powell, Strom and Daltons (cited in Amoateng, 2015) found that the students became disinterested in politics for lack of trust and confidence in the political actors and the system of government in France. The young ones had negative feelings towards the governance and the political leaders who ran the system in a suspicious manner. This attitude of the youth had adverse effect on their participation in the political processes in France.

Poland: In Poland, political education is simply referred to as Wiedza o Spoleczeństwie (WoS) which literally means "Knowledge of Society" and it is studied as one of the secondary school (*matura)* subjects. *Matura* (meaning mature) is a Latin name for the high school final examination in polish system of education which is similar to *baccalaureat* in France (Pacewicz, 2004) or "maturity diploma" in various other nations such as Albania, Austria, Bosnia and Herzegovina, and Bulgaria; among others. This is a matriculation examination taken at the end the secondary school education by students whose age is between 17 and 20 years old. It is mandatory for them to pass the examination before applying for admission to a university or any other higher institution for their tertiary education. In other words, the subject of 'Knowledge of Society' is a form political education or education for democratic citizenship to which young citizens of Poland are exposed for them to be equipped with the knowledge of their society in terms of systems of government, economy, and history etc. As at the time of independence in 1989, civic education was never taught in the Polish schools. This was because the school was used for the state propaganda under the communist regime.

Eventually, civic education programs became an integral part of the formal school curricular for all grades in the polish schools largely made possible due to the joint efforts of both the national education authorities and non-governmental organizations. Interestingly, civic education has now been given a place in the national school curriculum at the level of primary school having its components in the subject of (history and society). In addition, it has been introduced at the middle school and high school levels- subject-matter concerning knowledge about society which students must choose to write and pass while sitting for the *Matura* examination as earlier explained. However, there is evidence that civic education is never regarded as being equally important like other school subjects by a lot of students, parents and even their teachers (Pacewicz, 2004).

According to the Polish Ministry of National Education and Sports Decree of 26th February, 2002, political education became obligatory at all levels of education from primary to high school. In the first three years (lower classes) of primary school, children are taught about positive relations with others, attachment to local community, region, country and their primary duties and rights as citizens while in their upper (fourth-sixth) primary classes, children are exposed to topics and disciplines in

connection with civic or political education. They are taught topics which include among others upbringing in family, regional education, patriotic and civic upbringing. The subject of 'Knowledge of Society' is introduced at the level of the high school as earlier mentioned. It is taught to secondary school students to acquire knowledge about activities in an economy, society, local community and family and civic attitudes and abilities (Radiukiewicz & Grabowska-Lusinska, 2007). Polish students are expected to learn about exercising their rights as young citizens in a democratic system; internalise the rules about their democratic society and its civic culture. "Civic culture and democracy intertwine in a symbiotic relation" (quoted in Radiukiewicz & Grabowska-Lusinska, 2007: 21-22). This implies that both democracy and development of civic culture depend on each other. Democracy may even take place under any kind of civic culture but there can never be the development of civic culture without a democracy or democratic system being in place.

Spain: The Spanish administration led by José Luis Rodríguez Zapatero recently introduced a law which made a provision for Education for citizenship and Human Rights as a school subject for learners at the primary and secondary education levels. The subject came into being as a result of the Council of Europe's recommendation that favourably argued for the introduction of political education expected to foster and encourage the promotion of civic and human values. Although, conservative leaders of the Catholic Church in Spain have been against it; labelling it as totalitarian. The Spanish Organic Education Law of 2006 made provisions for the inclusion of the citizenship education as a distinct but separate school subject for children to be taught; and as a cross-curricular topic in other school subjects at the primary school level.

More importantly, citizenship education and human rights was made available at the lower high school level and was offered by the children at Grade four (4) while at the Upper high school level, citizenship education was part of the subject of History in the Spanish schools. As a result, high school students had to learn about the historical knowledge of the past which was aimed at creating critically conscious minds about the world they live in; and allow them the freedom of participation in their democratic society. Subsequently, the Spanish Supreme Court also ruled in January 2009 that attendance for citizenship education course would be compulsory for all the learners. Surprisingly, the school subject of citizenship education had to disappear from the school curriculum following the introduction and successful implementation of the new Organic Improving Quality of Education Law (2013) (Navarro-Medina & de-Alba-Fernández, 2015).

Australia: Political education was made a national priority in 1993 by the government of the Prime Minister Paul Keating having felt the need to educate the Australian to become much more informed and capable of making meaningful contributions towards the independent and solidified identity of their country (Lewis, 2009). The situation in Australia in terms of the youth apathy was not different from the challenges confronting other western democracies some two decades back. Voting during elections is a mandatory civic duty with a heavy sanction on defaulters for non-compliance in Australia. Yet, this country is bedevilled with the youth disengagement from voting and electoral obligations expected of the citizens (Print, 2007). This perceived participation conundrum was called 'civics deficit' by Manning and Edwards (2014). Political education in Australia is offered in the form of 'Civics and Citizenship Education-

(CCE)'. The CCE can be described as a learning experience aiming at equipping the students with the knowledge of the country's political system and governance structures, human rights and the rule of law, citizenship rights and responsibilities, and other relevant knowledge and skills required for the making of responsible and participatory citizens (Print, 2007).

China: There is a strange kind of citizenship education in China popularly known as the "Peopleship" education (Xiao, 2013). By implication, 'Peopleship' education regards and considers political education as a fundamental foundation for the socialization of young people (Chinese citizens) into the main doctrines of the People's Republic. The political education in China deals with the people's moral education; that is, education required for good governance in China for the purpose of ensuring stability and social order in the state. The Chinese state aims to instil in young people the values and legitimacy of its system of political-cultural paternalistic governance that tends to impose duties, obligations and Confucian customs and culture (Kennedy, Fairbrother & Zhao, 2014). Political/civic education in China was conceived as a reaction against the threatening influence of the western democracy and modernity and as a response the desire to develop a national character in the young Chinese people against the Western domination was fulfilled. Put differently, Peopleship education is a system of political education which is a process of nation-building and modernisation aimed at inculcating western concepts of "the people", "the nation" and "the citizens". This is an attempt to ensure the preservation of the tradition of developing civic qualities and shaping modern citizens with virtues and awareness of their responsibilities and obligations to the Chinese state (Kennedy et al. 2014).

In Confucian tradition, rights of the people were not given much attention but rather emphasis was on their duties and obligations to society, obedience and loyalty to the authority as it was in the ancient Athens and Rome. Eventually, democracy as a system of government was embraced in China in the 20th Century. Consequently, the People's Republic of China was formed in 1949. Political education under the regime led by Mao Tse-tung focused on loyalty to Mao until 1978 when Chinese leadership came to realise that a market economy needs a democratic and rule of law-based education. Then, the objectives of Chinese schools had to be revisited to ensure that students were taught some moral education (Xiao, 2013; Hamdan, 2017).

United States of America: Political education in the United States of America is also known as the citizenship education or simply as civic education. The term 'political education' is not usually used outside the US academia because it is believed to suggest an act of political indoctrination (Nucci, Narvaez & Krettenauer, 2014). Political education often takes place formally in schools through the study of government course on the US political system and governance as well as through the exposure of students to the activities of the Student Representative Council (SRC), participation in the SRC elections and the act of reciting the US Pledge of Allegiance.

Political education is also well delivered through the teaching and learning of a course on history in the US schools. In 1968, a study conducted by Langton and Jennings found that students' exposure to citizenship education in classrooms was not significantly correlated with their civic knowledge or political behaviour. Unfortunately, the findings of this study had led to the death of the citizenship education course in the

US schools for about three decades between the 1960s and 1990s. In 1998, another study by Niemi and Junn came to limelight with the presentation of finding which was quite different from that previously reported by Langton and Jennings' study. Niemi and Junn found that there was a correlation between student's political knowledge and civic education courses. In other words, the greater the exposure of students to civic courses the greater their knowledge of politics. This finding saw to the return of civic education courses to the classrooms in high schools. Not only that, it also ignited and renewed the research interest in and scholars' attention on the study of citizenship education in the United States (Nucci et al. 2014).

Political education from African perspectives

In African context, political education is aimed at inducting new and young members of the African societies into the process of acquisition of the knowledge and pride of their cultures (Mhlauli, 2012). The nature of the African citizenship education is targeted at the training of the individuals to become useful and acceptable members of their traditional society. The Africa's colonial masters did away with the programmes on citizenship because their colonial agenda never aimed at building and developing critical thinking in African citizens. Not many of the post-colonial African states were able to consider the need for critical political education because of the long stay of the military in African politics. The military dictators only promoted some sort of public education that demanded loyalty from the learners and citizens. Political education in the post-colonial African states was later refined based on the ideals of the western democracies with the identified characteristics of nation-state, human rights, citizenship obligations and democratic participation in voting exercises (Mhlauli, 2012).

A lot of efforts have been made by the African nations to reform and make some constitutional improvement for educating their young citizens to actively engage them in the governance of their respective nations (Alutu & Ifedili, 2012). These authors further reported that sub-Saharan African nations' policies of education and school curricula have not adequately addressed the need from the development of critical thinking in their citizens. Most African countries at the time of their independence had educational policies that retarded growth, development, equality and democratic principles necessary for their citizens' participation and involvement. However, increased educational access to the young Africans is intended to empower them with the requisite skills and knowledge to be able to perform their civic responsibilities and facilitate their participation in the global knowledge economy.

Political education in national contexts

Nigeria: Citizenship education has been undertaken formally and informally in Nigeria. It was formally introduced into the teacher education and preparation curriculum in 1990. Moreover, the subject of Social Studies was made a compulsory part of the Nigerian education at both the primary level and the first three years of the secondary education with a view to inculcate the knowledge and practice of citizenship education into the young Nigerians (Alutu, 2012). Civic education has been introduced as one of the compulsory school subjects for the senior secondary schools (SSS 1-3) curriculum and it is one of the mandatory school subjects the students have to write and pass at the level of the Senior School Certificate Examination (SSCE) in Nigeria. At the tertiary level, political education is introduced as a general course of study in different names.

For instance, it is simply called citizenship education at the colleges of education and polytechnics while it bears other names at the Nigerian universities. A survey conducted by Adelabu and Akinsolu (2009) reveals that the university is capable of inculcating political education and awareness in the students. Their findings confirm that the university's sources of political education are good platforms that bring about increased levels of political awareness to engender increased students' participation in the political processes. They found that the university played an influential role in the political behaviour of the students.

Ghana: Traditionally, the family consisting of parents and other relatives were responsible for the preparation and training of the young Ghanaians for participation in the community life. Citizenship education in Ghana is both informal and formal. The formal school system is charged with the responsibilities to inculcate the knowledge about rights, civic duties, traditions and norms of the societies into the young ones through the teaching and learning of citizenship education. In 1992, Ghana's National Commission on Civic Education (NCCE) was created with the objectives of inculcating in the younger ones the awareness of their rights, responsibilities and freedom to participate in the political life of their country. For the citizens who may not be privileged to acquire knowledge of citizenship education through the school experience, the NCCE has initiated a lot of programmes through the media organizations for the purpose of building the culture of democracy among the citizens (Kankam, 2016).

South Africa: In South African context, it is on record that the national government and the ruling party- African National Congress (ANC) did institute programmes aimed at inculcating political education in South African citizens (Thebe, 2017). Prior to 1994, in South Africa, the apartheid regime only permitted an indirect teaching and learning of political education as an integral part of the school subjects such as History, Right Living, Inkatha Studies and Youth Preparedness. South African students were exposed to the learning experiences and political knowledge that would not provoke critical thinking and raising their consciousness and awareness about their material conditions and political rights. They were prepared and taught to be subservient and obedient citizens who would not rise against the authorities (Schoeman, 2006). This nature of the citizenship education denied the young South Africans a chance of having an understanding of the human rights and democratic responsibilities. As a result, the South African youth of today are still very much oblivious and ignorant of the type and structures of governance in their country. They simply do not have the requisite knowledge, awareness and skills with which to really engage in the democratic governance as their civic rights and obligations (Schoeman, 2006).

Political education of youth and the role of the State
With reference to the thoughts of Plato and Aristotle, the concept of political education usually was discussed in relation to the system of government (regime type) and type(s) of political culture found to be popular among the citizens in the state (Parker, 2014). For instance, every democratic state requires, for its survival and further development, its citizens to develop democratic knowledge, competences, skills and values (Zafer & Tarhan, 2016). The state not only has responsibility to educate its citizens but also have to ensure that they are adequately sensitized to their duties and obligations; as there is

hardly any democratic regime that would ever exist without a well-educated and responsible citizenry (Garcia, 2010).

The state, therefore, has a constitutional obligation to provide educational opportunities to children and youth. The constitutional mandate of the state for provision of educational opportunities also requires provision of the needed infrastructure, seasoned, qualified and experienced teachers to impart the right values of education to the children and youth (Sarda, 2016). Plato, in his book *The Republic,* argued in favour of the publicly funded educational system whereby the state would take the burden of the child's education away from the parents. It then became the state's exclusive responsibility to educate the children and youth according to their abilities and in the end Plato believed that the most educated ones should emerge as the governors (philosopher-kings) over the affairs of the state (Parker, 2014). Apparently, Plato's idea of political education was one whose responsibility had to be placed upon the state for the purpose of identifying the potential leadership skills and traits in the youth. Even regimes in non-democratic states such as China, the Kingdom of Saudi Arabia and the Nazi Germany of the 1940s have had to encourage political education programmes for their youth. In and out of school, China and Saudi have the interest in political education to instill in their youth citizenship skills and obedience to the constituted authorities. Under the government of Nazi Germany which was a known dictatorship, youth were consciously educated to become subservient to the state and to participate in "militarism, patriarchy, heterosexism, love of Hitler, hatred of Jews and racism" (Parker, 2014:3). Political education of the youth is therefore considered a desideratum to foster the kind of citizenship as desired by any type of regime.

Democratic states are concerned about the needs, aspirations and desires of their citizens. A responsible and responsive state has a critical role to promote the political education of its youth. This is a potent tool with which the state can foster political knowledge, skills and civic values in the youth for them to show interest and participate in voting exercise, "governmental roles, citizens' rights and duties, ecological activism, community services, social networking for future citizenship engagement" (Idowu, 2017:26). Youth political education is a critical and essential responsibility for the state to be able to confront citizenship issues such as the youth apathy towards participation in electoral activities, moral decadence such as acts of disorderliness, drug abuse, drug trafficking, restlessness and violent protests among the youth; which may strangle a nation's democracy and also dent its image among the comity of nations on the global stage.

Going forward, it is pertinent for the state to concentrate more efforts, formally and informally, by investing in the youth political education as a way to tackle all of these and many other problems. The state's concern to make the youth responsible citizens should be addressed by instilling in its youth the spirits and practices of patriotism, toleration, integrity, citizenship values, national consciousness, principles of rule of law, democratic duties and obligations, national identity, social norms and national ethics through formal teaching and learning of political education. The next section addresses the role of schools in fostering political education of the youth.

Political education of youth and the role of schools

The role of educational institutions, such as schools, colleges and universities, in transmitting political education cannot be over-emphasized. There is a concern in schools that political education can be an instrument for teaching certain political beliefs to children and youths**.** The school helps one to understand political events, and affects his/her appropriate role opinion as a citizen. Children and youth are introduced to political system, political parties, political leaders, political concepts and phenomena in the schools and discuss matters related to politics in other subjects like History and Geography more often in the secondary/high school (Nilgun *et al.*, 2015). Schools are prime contexts for civic development given that young people spend much of their lives there, they represent microcosms of broader society, and historically their mission was to educate and develop socially responsible citizens (Homana, Barber & Torney-purta, 2006).

Political education has been the primary mode by which schools have attempted to socialize youth for their roles and responsibilities as citizens. Through civic courses, curricular materials, and field trips, schools educate students about the government, political processes, and political leaders. Research suggests that people who are most knowledgeable about politics are more likely to participate in it than those with less knowledge. However, knowledge alone is not a sufficient precondition for civic engagement (Delli Carpini & Keeter, cited in Watkins, 2009). Student leadership and service-learning courses offered at schools provide youth with meaningful opportunities to engage in civic processes. Student leadership positions (on councils or governments) expose youth to the structure, processes, and roles associated with democratic participation and governance. Thus, hierarchical structure, competitive ethos, and neutral/apolitical orientations to civic engagement may delimit the ability of schools to socialize young people toward democratic participation (Watkins, 2009).

The major political function of the elementary school is to foster compliance with governmental rules and authority. This is also corroborated by (Pandey & Kumar, cited by Nilgun *et al.*, 2015) when they state that the political function of the school and education is to bring up good citizens. This, in fact, is particularly the common and fundamental purpose of political, democratic and citizenship education. The awareness and responsibility of citizenship is gained by people's living it in practice and through the political education process (Nilgun et al, 2015). The formal curriculum and instructional programs generally underemphasize the children's rights to participate in political decisions and overemphasize compliance with the government and uncritical loyalty toward the system. Higher levels of education seem most likely to encourage citizens to participate meaningfully in politics. Education also affects the political skills and resources of the public. Educated people are more aware of the impact of government on their lives and pay more attention to politics. The better educated people have mental skills that improve their ability to manage the world of politics. They also have more information about political processes and participate in a wider range of political activities (Almond et al., 2008 cited in Olasupo, 2015).

Campus socialization provides political knowledge to students. It is hereby confirmed that political education could be shaped by what is transmitted through the official curriculum. The curriculum dictates the knowledge system of each student. It can also widen the cognitive experience of students. Undoubtedly, many agents of political

education would have influenced university students before and by the time they are in the university. Schooling itself has been known to function as an ideological vehicle for political socialization but the more extensive an individual's education is, the more likely he is to have more political information to possess a wide range of opinions on political matters and to engage in political discussion with a wide range of people and to feel a greater ability to influence political affairs (Almond & Verba, cited in Adelabu & Akinsolu, 2009). "The university has now been reported to be the dominant model and central instrument of political education, surpassing even the traditional bond of the family" (Adelabu & Akinsolu, 2009).

From the foregoing, it is crystal clear that the schools have a critical responsibility to impact in the youth; citizenship values, critical thinking skills, practices of toleration, national consciousness, national identity and unity, fundamental human rights, duties and obligations of duties, constitutionalism and rule of law, political history and democratic representation, social issues, electoral system, peace and conflicts resolutions and national development, federalism, media and pressure groups, separation of powers and political parties. When this responsibility is diligently carried out by the schools, the youth are consciously encouraged to become politically aware and knowledgeable and thereby develop keen interest in participating in the nation's political processes.

Political education of youth and the role of parents
Parents, like the schools, also play a crucial role in the political education of the youth by transmitting politically related knowledge, awareness, interest, norms and values to them. Research has provided examples of how the politicization of parents affects the political development of their children and youth. When parents are more politically sophisticated, more politically consistent, and politically unambiguous, their children are more likely to share the parents' political views (Jennings, stoker & Bowers, 2009). When parents' political views are not clear, the children's attachment to any political party is weak. In fact, politically unaware parents seem to lead to politically unaware children (Armstrong, 2015). Furthermore, parents have significant influence over their children's political involvement and civic participation. Politically-involved parents usually translate into politically-involved children.

Within the family, parents play an important role in the political socialization of their children. Parents transmit political knowledge, awareness, interest, norms and values to their children. While in some families, political discussion will occur quite frequently, in other families political topics tend to be avoided. Parents clearly stimulate the willingness and ability to acquire information (Quintelier, Hooghe & Badescu, 2007). Families play a significant foundational role in the civic development of young people. It is within the family context that young people first become aware of civic life and their relation to it. Family member, specifically parents, transmit knowledge, attitudes, and behaviours regarding civic life to children through consumption of particular media, discussion of civic affairs, and participation (or not) in civic life. Early theories of parents' political socialization efforts positioned children as passive recipients of civic affections and understandings (Watkins, 2009). Recent theories however clarify that political values are not deposited into youth; but rather youth play an active role in making sense of their social worlds and exercise choice in the values they subscribe to at any given point in time (Flanagan, 2009). Parents' socialization messages do not reflect

clear, authoritative perspectives on civic life that are easily transmitted to children and the familial context is aided by schools and other community institutions in socializing youth about civic life (Watkins, 2009).

Research has provided examples of how the politicization of parents affects the political development of children. When parents' political views are not clear, the children's attachment to any political party is weak. In fact, politically unaware parents seem to lead to politically unaware children (Dawson & Prewitt, cited by Armstrong, 2015). Furthermore, parents have significant influence over their children's political involvement and civic participation. Politically-involved parents usually translate into politically-involved children. Without parental political communication and political signaling, children are more susceptible to outside influences (Armstrong, 2015).

The politically richer the home environment, the more likely an adult is to undertake some political activity other than voting. With regard to behaviour too, it is possible to distinguish direct and indirect causal mechanisms (Fridkin, Kenny & Crittenden, 2006). Direct influence can occur as a result of parents providing information to their children, of talking in a positive and encouraging manner about politics with their children, or by explicitly stimulating them to participate politically. Indirect influences have also been documented in the literature. Children will be more likely to participate in civic and political life if their parents tend to participate in elections (Martikainen, Martikainen & Wass, 2005), in electoral campaigns, participate in politics in general (McFarland & Thomas, 2006); or if they are actively engaged in voluntary activities. We can refer to this as an indirect effect since the participation of the parents self-evidently does not have the intention to influence the behaviour pattern of their children. A more likely explanation is that parents function as a political or social role model for their children, who pick up the habit of playing an active social role. Put differently, parents socialize children into a civic culture and encourage participation in youth groups through their own involvement (Quintelier, Hooghe & Badescu, 2007).

Furthermore, children's party identification and political participation have been largely influenced by their parents' political orientations, party preferences and political ideologies (Kroh & Peter, 2009). Studies have clearly shown that children's level of political awareness is determined by their parents' influence which is reflected in the political characteristics within the home environment (Neundorf & Semts, 2017; Jennings et al, 2009). Parents who are highly conscious politically have the tendency of fostering a positive political orientation capable of stimulating and encouraging political participation. Similarly, parental socio-economic status (SES) is another way through which parental influence on their children's political participation is manifested. The socio-economic status (SES) of parents has a direct influence on children's SES and their participation in political activities. It is assumed that higher parents' SES means that the children would likely have high levels of education. It then follows that the higher the level of children's education, the higher their levels of political awareness, political interest and beliefs about politics (Jennings et al, 2009).

Conversely, Dinas' (2014) study found that children may likely embrace their parents' political ideologies and party preferences as adolescents but may however likely review their political choices and party identification as they grow into adults as a result of having exposure and access to new political orientations in early adulthood. As noted

by Quintelier et al. (2007), parents' direct influence on their children's political participation can be through the provision of political information during informal discussion about politics at home in a way that positively encourages and makes politics more appealing and interesting to the children. The indirect influence, on the other hand, may occur as a result of parents participating in voting, election campaigns and other political activities.

More so, parents indirectly encourage children's participation in politics through their active involvement in voluntary associations. In this way, parents are therefore regarded as the political role models to their children either consciously or unconsciously (Quintelier et al. 2007). In Pakistan, parents have influence on their children's political choices and decisions as voting are usually influenced by ethnic considerations (Yaseen, Mamdani, & Siddiqui, 2018). It is also presumed that children mostly acquire their political orientations and understanding from their families. It is understood that the youngsters spend much more of their time with their parents than any other individuals outside their families. Parents are greatly influential in shaping their children's political attitudes and voting behaviours. Hence, family is the most significant agent of political socialization (Yaseen, et al., 2018).

To cap it up, parents have to show a sense of greater responsibility towards their civic duties and obligations. They should be critical of their participation in all of the political processes in such a way to lead by good examples for their children and youth to follow and emulate. I contend to see parents' political influence as the primary mode of impacting political learning and skills into the youth due to their presence and availability around these youngsters in the homes and within the families. The youth usually look up to their parents. They always want to follow in their paths. They certainly would want to practice their parents' dispositions and worldviews regarding politics and democratic activities. It is, therefore, expected that parents themselves should develop positive political dispositions and orientations towards their civic duties and obligations in order to implant such political interests in the hearts of the youth around them.

Concluding remarks

The challenge of the decline in the youth political engagement is apparently a global phenomenon confronting all types of regimes, be it, developed or developing democracies. Political education is one solution to effectively tackle the conundrum. The state has a critical role to play by providing enabling environment for the teaching of political education in schools and encouraging non-governmental actors interested in inculcating political education knowledge in the youth. The schools also have responsibilities to impact those relevant citizenship values and skills in the youth to become responsible and participatory citizens in the state affairs. Parents also have to show strong democratic values and responsibilities in a way that would motivate their children and the youth in general to emulate and practise. Beyond doubts, political education is indeed a desideratum for building, enhancing and solidifying the democratic culture of any nation through her youth.

References

Adelabu, M.A., & Akinsolu, A.O. (2009). Political education through the university: a survey of Nigerian universities. *African Journal of Political Science and International Relations,* 3(2): 046-053.

Almond, G.A., Powell, B., Dalton, R., & Strom, K. (2008). *Comparative politics today: a theoretical framework*. California: Pearson Longman.

Alutu, A.N.G., & Ifedili, C.J. (2012). Realizing the objectives of citizenship education: the need for collaborative effort of teachers and counselors. *Interdisciplinary Journal of Contemporary Research in Business*, 4(1): 571-579.

Amoateng, A. (2015). The end of politics by the youth? Higher education, youth identity and recession of political participation by South Arica's 'Born-frees': The case of undergraduate students at a public university. *International Journal of African Renaissance Studies-Multi-, Inter-and Transdisciplinarity*, 10(1): 102-119.

Armstrong, G.M. (2015). *Examining the parent-child political relationship*. Unpublished doctoral thesis. Oklahoma, USA: Oklahoma State University.

Asemah, J.I. (2010). Selected readings in education. Makurdi: Destiny Ventures. Available online at http://www.resjournals.com/ERJ

Bayeh, E. (2016). Role of civics and ethical education for the development of democratic governance in Ethiopia: Achievements and challenges. *Pacific Science Review B: Humanities and Social Sciences*, *2*(1): 31-36.

Bennett, S. (2018, August 31). The importance of political education. The Political Abyss Network. Retrieved from http://www.thepoliticalabyss.com/the-blog/2018/8/31/the-importance-of-political-education 17/06/2019

Bennion, E.A. (2006). Civic education and citizen engagement: Mobilizing voters as a required field experiment. *Journal of Political Science Education*, 2(2): 205-227.

Biesta, G. & Lawy, R. (2006). 'From teaching citizenship to learning democracy: overcoming individualism in research, policy and practice' *Cambridge Journal of Education,* 36(1): 63-79.

Birhanu, J. (2012). *The role of civics and ethical education in the development of students' behavior: The case of Kokebe Tsibiha secondary and preparatory school.* Unpublished master's dissertation. Addis Ababa, Ethiopia: Addis Ababa University.

Børhaug, K. (2008). Educating voters: Political education in Norwegian upper-secondary schools. *Journal of Curriculum Studies*, 40(5): 579-600.

Bruen, J. (2014). Politics: interest, participation and education. Comparing the Republic of Ireland with Germany. *Irish Educational Studies*, *33*(1): 37-55.

Bryan, A., & Bracken, M. (2011). *Learning to read the world? Teaching and learning about global citizenship and international development in post-primary schools*. Ireland: University College Dublin.

Campbell, D. E. (2006). *Why we vote: How schools and communities shape our civic life*. USA: Princeton University Press.

Cremer, A. (n.d). Overview: Political education in Germany. *Friedrich Ebert Stiftung*. Accessed from: https://www.feskorea.org/

Crick, B. (2008). Democracy. In J. Arthur, I. Davies, & C. Hahn (eds.), *The SAGE handbook of education for citizenship and democracy*. London: Sage Publications.

Crittenden, J. (2018). *Civic education*. Available at https://plato.stanford.edu/entries/civic-education/

De Coster, I., Borodankova, O., De Almeida Coutinho, A. S., & Paolini, G. (2012). *Citizenship education in Europe*. Education, Audiovisual and Culture Executive Agency, European Commission. Available at: http://eacea.ec.europa.eu/education/eurydice. Accessed on 24/01/2018.

Dinas, E. (2014). "Why does the apple fall far from the tree? How early political socialization prompts parent-child dissimilarity." *British Journal of Political Science* 44 (4): 827–852.

Faas, D., & Ross, W. (2012). Identity, diversity and citizenship: A critical analysis of textbooks and curricula in Irish schools. *International Sociology*, *27*(4): 574-591.

Flanagan, C. (2009). Young people's civic engagement and political development. *Handbook of youth and young adulthood: New Perspectives and Agendas*, 293-300.

Frazer, E. (2010). Introduction: The Idea of Political Education, *Oxford Review of Education*, 25: 1-2.

Fridkin, K.L., Kenney, P.J., & Crittenden, J. (2006). On the margins of democratic life: The impact of race and ethnicity on the political engagement of young people. *American Politics Research*, *34*(5): 605-626.

Garcia, B. L. (2010). 21st century competencies and civic participation. In *NRC Meeting on 21st Century Competencies: A planning process on behalf of the Hewlett Foundation. Available: http://nrc51/xpedio/groups/dbasse/documents/webpage/*

Hamdan, M.Z. (2017). A multiphasic blended citizenship acculturation program for building diverse citizens in hostile political times and contemporary ICT-Global Age. *European Journal of Education Studies*, 3(10): 626-663.

Homana, G., Barber, C.H., & Torney-Purta, J. (2006). Background on the school citizenship education climate assessment. *National Centre for Learning and Citizenship.*

Idowu, S.O. (2017). *Implementation of the Nigerian civic education curriculum to develop effective citizenship in young learners: Stakeholders' perspectives.* Unpublished doctoral thesis. London: Brunel University London. Retrieved from www.bura.brunel.ac.uk 27/06/2019

Jennings, M.K, Stoker, L., & Bowers, J. (2009). "Politics across generations: Family transmission reexamined." *Journal of Politics,* 71(3): 782–799.

Kankam, B. (2016). Citizenship Education in Ghana: A traditional and modern perspective in development. *International Journal of Information Research and Review,* 3(4): 2102-2108.

Keating, A., Kerr, D., Benton, T., Mundy, E., & Lopes, J. (2010). Citizenship education in England 2001-2010: young people's practices and prospects for the future: the eighth and final report from the Citizenship Education Longitudinal Study (CELS). Accessed on 26/12/2018 from: https://assets.publishing.service.gov.uk/

Kennedy, K.J., Fairbrother, G.P., & Zhao, Z. (2014). Understanding citizenship education in China: Multiple perspectives. In K.J. Kennedy, G.P. Fairbrother, & Z. Zhao (eds.), *Citizenship education in China: preparing citizens for the "Chinese century*" (pp. 222-234). New York: Routledge.

Kroh, M. & Peter, S. (2009). "Inheritance and the Dynamics of Party Identification." *Political Behavior,* 31(4): 559–574.

Kuş, Z., & Tarhan, Ö. (2016). Political education in social studies classrooms: A perspective from Turkey. *Journal of Theory and Practice in Education*, 12(3): 464-483. Retrieved from: https://www.researchgate.net/publication/.

Leung, Y.W., & Yuen, W.W. (2009). A critical reflection of the evolution of civic education in Hong Kong schools. *Pacific-Asian Education, 21*(1): 35-50.

Lewis, J. P. (2009). Is civic education the answer? The futile search for policy solutions to youth political apathy in Canada. In Murray Print and Henry Milner (eds.), *Civic Education and Youth Political Participation. Rotterdam: Sense Publishers*, 23-41.

Litvinov, A. (2017, March 16). Forgotten purpose: Civics education in public schools. Retrieved from: http://www.neatoday.org/2017/03/16/civicseducation

Luescher-Mamashela, T.M. (2011). *The University in Africa and Democratic Citizenship: Hothouse Or Training Ground?: Report on Student Surveys Conducted at the University of Nairobi, Kenya, the University of Cape Town, South Africa, and the University of Dar Es Salaam, Tanzania*. Cape Town: African Minds.

Manning, N., & Edwards, K. (2014). Does civic education for young people increase political participation? A systematic review. *Educational Review*, 66(1): 22-45.

Martikainen, P., Martikainen, T., & Wass, H. (2005). The effect of socioeconomic factors on voter turnout in Finland: A register-based study of 2.9 million voters. *European Journal of political research*, *44*(5): 645-669.

Mhlauli, M. V. (2012). The role of education on citizenship development in Africa. *British Journal of Arts and Social Sciences*, *4*(1): 104-115.

Misa, K., Anderson, J., & Yamamura, E. (2005). "The Lasting Impact of College on Young Adults' Civic and Political Engagement." Paper presented at the Association of Higher Education Annual Conference, Philadelphia.

Navarro-Medina, E., & de-Alba-Fernandez, N. (2015). Citizenship Education in the European Curricula. *Procedia-Social and Behavioral Sciences*, *197*, 45-49.

Neundorf, A., & Smets, K. (2017). Political socialization and the making of citizens. Available at www.oxfordhandbook.com. Retrieved on 06 November, 2018.

Nilgun, D.A.G., Sozer, M.A., & Burcu, S.E.L. (2015). Political education in school. *Educational Research and Reviews*, *10*(14): 1881-1887.

Nucci, L., Narvaez, D., & Krettenauer, T. (2014). Citizenship Education in the United States: Regime Type, Foundational Questions, and Classroom Practice WA LT ERC. PA RKER. In *Handbook of Moral and Character Education* (pp. 363-383). New York: Routledge.

Nwankwo, O.B.C. (2012). The Challenges of Political Education in Contemporary Nigeria: Re-thinking Mission and Re-planning Strategies. *Education Research Journal,* 2(12): 392-399.

Olasupo, M. A. (2015). The Impact of Political Socialization on 2015 General Election: Reflections on Nigerian State. *IOSR Journal of Humanities and Social Sciences*, *20*(7): 77-83.

Pacewicz, A. (2004). Encouraging young poles to vote. NECE- Networking European Citizenship Education. Available at: www.bpb.de/system/files/pdf/N72TBV. Accessed on 24/01/2018.

Parker, W.C. (2014). Citizenship education in the United States: Regime types, foundational issues, and classroom practices. In: Nucci, L., Narvaez, D., & Krettenauer, T. (Eds.), The handbook of Moral and Character Education (pp. 363-383). New York: Routledge.

Print, M. (2007). Citizenship education and youth participation in democracy. *British Journal of educational studies*, *55*(3): 325-345.

Quintelier, E., Hooghe, M., & Badescu, G. (2007). Parental influence on adolescents' political participation: a comparison of Belgian, Canadian and Romanian survey data. A paper conference presented at the International Conference on political socialization, Örebro, Sweden. Available at: https://pdfs.semanticscholar.org. Accessed on 01/12/2018.

Radiukiewicz, A., & Grabowska-Lusinska, I. (2007). Education for democratic citizenship in Poland. *JSSE-Journal of Social Science Education*, *6*(2): 21-28.

Sarda, M. (2016). Democracy, Right to Education and the Role of Teachers: A Critical Study in the Light of Bhartiya Seva Samaj Trust Tr Pres's Case. *Right to Education and the Role of Teachers: A Critical Study in the Light of Bhartiya Seva Samaj Trust Tr Pres's Case (April 2, 2016).*

Schoeman, S. (2006). A blueprint for democratic citizenship education in South African public schools: African teachers' perceptions of good citizenship. *South African Journal of Education*, *26*(1): 129-142.

Thebe, T. P. (2017). Political education for good governance in South Africa's local government and communities. *African Journal of Public Affairs*, *9*(5): 123-135.

Vasiljevi, B. (2009). *Civic Education as a Potential for Developing Civil Society and Democracy: the Case of Serbia*. Unpublished Master Thesis. University of Tromsø, Norway.

Watkins, S.C. (2009). *The young & the digital: What the migration to social-network sites, games, and anytime, anywhere media means to our future*. Boston: Beacon Press.

Xiao, Y. (2013). China's peopleship education: Conceptual issues and policy analysis. *Citizenship Teaching & Learning*, *8*(1): 21-39.

Yaseen, M., Mamdani, K.F., & Siddiqui, M. (2018). The role of political talk shows in raising political awareness among youth: A case study of University of Karachi. *International Journal of Humanities and Cultural Studies (IJHCS), 5*(3): 90-108.

Zafer, K. U. S., & Tarhan, Ö. (2016). Political education in social studies classrooms: A perspective from Turkey. *Eğitimde kuram ve uygulama*, *12*(3): 464-483.

Student teachers' experience of teaching in the pre-primary phase during school-based studies: The case of Hifikepunye Pohamba campus

Lydia AMAKALI & **Olia Ghiassi RAZAVI**
Faculty of Education, University of Namibia
Namibia

Abstract

Teaching practice is an essential exercise in training an effective teacher as it exposes student teachers to the real world of the profession. This study aimed at investigating student teachers' experience of teaching at the pre-primary level during their teaching practice. The study adopted a qualitative research approach and a case study research design. Data was gathered from a focus group interview and questionnaires administered to B.Ed. junior primary third- year students from the University of Namibia. The results indicated the presence of certain gaps in both the theoretical framework and the practical component of the programme. Based on the findings of the study, measures are suggested for improving the programme and addressing various related issues, including the student teachers' concerns.

Keywords: Pre-primary phase. Students. Teacher training. Teaching practice.

Introduction and background

In 2015, the Namibian Ministry of Education introduced the pre-primary phase of schooling and implemented the revised curriculum for Basic Education to ensure a better integration of learners into the school system. Prior to that, our student teachers were practising their teaching skills in Grades 1 to 4. During School Based Studies (SBS), year three students practice for six weeks (two periods of three weeks in February and June) at any school near their residence. The Bachelor's degree for pre- and lower-primary education is a four-year course that prepares student teachers both theoretically and practically for the teaching profession. As Cakmak (2008) remarks, "teaching experience is one of the necessary components for effective teaching including both theoretical knowledge and practical skills" (p. 63).

While the emphasis of the curriculum is mostly on lower primary subjects, the various modules offered try to include pre-primary children in their scope. However, when the student teachers embark on their School Based Studies (SBS), they mostly select to teach at grade levels 1-3. Seldom do we find our students practising their teaching at pre-primary levels. Opfer and Pedder (2011) claim that one way of improving student learning is through the provision of more effective professional learning activities for teachers in schools, where 'effective' means that the activities result in positive change for teachers and their pupils. Similarly, Msangya, Mkoma and Yihuan (2016: 113) remark that

> *…for teachers to play their role effectively in schools, there must be a well-designed and successfully implemented teaching practice programme for student teachers that aims at producing teachers who*

*are academically qualified, professionally skilled and attitudinally and
ethically committed to their profession.*

Knowledge of practice includes content knowledge, pedagogical knowledge,
technological knowledge, or what is known as pedagogical content knowledge. This
consists of a repertoire of teaching skills and abilities in respect of subject matter,
pedagogy, curriculum and the technology used to help learners learn (Mena, Hennien &
Loughran, 2017; Koehler & Mishra, 2008; Shulman, 1986; Elbaz, 1981; Fenstermacher,
1994). We decided to find out more about the teaching practice experience from our
third-year students engaged in teaching practice during the three-week period in
June/July. Fourth-year student teachers have the option of specializing in various fields,
including Early Childhood Education. However, only 30 or so are allowed to opt for this
specialization as they have choices to make in other areas as well.

Theoretical framework

The theoretical framework for the research is based on the constructivist theory of
Jerome Bruner, which maintains that learning is an active process in which students
construct new ideas or concepts based upon their current and past knowledge (Bruner,
1996). Thus "instruction must be concerned with the experiences and contexts that
make the student willing and able to learn (readiness)" (Bruner, as cited in Virolainen p.
56). Bruner's theory is appropriate for the study in terms of the experience that our
students gain from teaching at the pre-primary phase. The programme therefore should
not rely on theoretical content alone, but should ensure that sufficient practical
experience at all levels of the primary phase is gained. The students should acquire
actual competencies at the pre-primary level, even though the content of the B.Ed.
programme is tilted towards the teaching of the lower primary grades 1-3. The content
of the programme informs our students of the different theories of teaching and
learning, thus empowering them with the relevant intellectual context. However, this
should be amplified and extended through experience of and reflection on teaching at
all the phases concerned. The notion of reflective practice is critical. Schön (1966)
defines reflective practice as the practice by which professionals become aware of their
implicit knowledge base and learn from their experience. The author talks about
reflection in action and reflection action. Reflection in action is to reflect on behaviour as
it happens, whereas, reflection on action involves reflecting after the event, so as to
review, analyse and evaluate the situation.

Research questions

The research was guided by these questions:

- ✓ What are some of the students' experiences during SBS with regard to
  teaching?
- ✓ How is teaching at pre-primary different from grades 1-3?
- ✓ What possible improvements might be made to current SBS practices at the
  pre-primary level?

Methodology

Prior to conducting the study, the researchers followed the ethical procedures recommended by the UNAM Research and Publication Committee. All participants were informed verbally and in writing about the purpose of the study. The participants were required to give their written consent to take part before the start of data collection. A qualitative research approach was selected as the researchers were keen to find out about the personal experiences of students during their teaching practice. The population consisted of 86 pre-primary and lower primary student teachers in years 3 and 4. The study employed purposive sampling to identity 12 third-year and 74 fourth-year BEd students majoring in pre- and lower primary phases. A short questionnaire was administered to year-4 students to find out about their experience of SBS, since they started with teaching practice in year 2 of their studies. A focus-group interview was conducted to glean information about year-3 students' experience of SBS. The questionnaires distributed to year-4 students were analysed using a cross tabulation grid to collate the data and grouped according to phases and grades taught and the information collected from the interviews was transcribed and analysed using narrative data analysis and interpretation. Themes based on the main research questions were extracted.

Findings

What follows is a summary of the various data collected for the study. The data is grouped under themes which have been formulated according to the wording of the research questions.

Experiences of teaching during SBS

Teaching practice is an important component of the degree programme. In year 2, students mostly observe, but in years 3 and 4, they should teach a verifiable number of lessons that are observed and graded by their subject teachers and lecturers. We asked the (2017) year-4 students, by means of a short questionnaire, to indicate their School Based Studies observations and experiences in teaching at the different levels since year 2. This was to find out if and how they taught in the pre-primary phase as well as in Grades 1-4 during the 3 years of SBS. A total of 74 students returned the questionnaires, which revealed the following:

Table 1.
Number of students that observed and/or taught lessons at the different grades.

SBS	Pre-primary	Grade 1	Grade 2	Grade 3	Grade 4	% Pre-primary
Year 2/2015	41	56	56	53	8	55%
Year 3/2016	12	27	47	43	2	16%
Year 4/2017	11	27	35	42	0	14%

In year 2, students embark on their SBS practice for a period of 4 weeks. They mostly observe and only teach in two major subject areas according to their specialisations. In

year 3, students embark on their SBS practice for a period of 6 weeks. Two periods of observation are conducted by their tutors and the rest by their respective support teachers. In year 4, students embark on their SBS practice for a period of 12 weeks, of which two are observed by their tutors and the rest by their support teachers. The results clearly indicate that it was only in year 2 that as many as 55% of students observed and or taught in the pre-primary phase, with this percentage decreasing significantly in years 3 and 4.

The interviews with year-3 students yielded the following outcomes.

Students' preferences

All the students responded that they preferred to teach in grades 1-3. Some said that the pre-primary learners got tired easily and their attention span was short. Among the reasons why they did not like to teach at the pre-primary phase, include the following:
- *there are no materials in place*
- *they do not know how to read and write*
- *it takes time to cover the syllabus*
- *they make too much noise, it is like baby-sitting,*
- *we are still too young for them and not well equipped to bring them up, it is better to leave pre-primary for the more experienced teacher*s.

One of the students stated that "*The reason why people do not choose pre-primary is that people do not see any difference between kindergarten and pre-primary and kindergarten in villages are taught by people who failed with grades 10 and 12. So people think we are here for grades 1-3. There is need for a programme where people are encouraged that pre-primary is also a grade. Maybe a forum on the importance, something like exhibition could be held.*" It seems that lecturers make an influential contribution to this predicament, since all the students stated that the curriculum (including assessments) emphasised Grades 1-3, and that the pre-primary phase is mostly neglected. Another student claimed that "*it has to do with lecturers in most cases. Even during their presentations, they don't focus on pre-primary, only on 1-3, especially in languages where, they do no put more effort on in Grade 1 or 2. We are not really exposed to teaching methods of pre-primary. It is a waste of time and we are not going to stress ourselves.*"

The study found that the only time students went to the pre-primary classrooms was when tasked by lecturers to do micro-teaching at that level. As the students stated: "*Yes, we did attend during SBS, the pre-primary because of assignment as we wanted to have experience in Environmental Studies.*" One student commented that "*I think I will never teach in pre-primary,*" while another student remarked: "*Last year I taught 2 lessons there, it was not my choice, and I just had to do it, because it was an assignment. This year (year 4), yes, I went there because it was the beginning of the year and I wanted to experience the steps they go through, I did on my own.*" These experiences aside, the student teachers felt competent enough to teach at that level. As one student stated: "*It is difficult, at least we acquired enough, knowledge but the situation prevents us from going there… I am capable of doing it, nothing is missing. But the situation is preventing us from practising. I am capable to teach.*"

Regulations for SBS Practices

Students were unaware of such regulations, claiming that they could teach in any grade of their choice. One student stated, "*It is up to us, there are no regulations, some may never teach because of noise and difficulties.*" Another student said that normally the principal decided in which grade(s) they should do their practice teaching. There were no regulations as long as the grade concerned was in the lower primary phase.

Differences between teaching in pre-primary and grades 1-3

When asked if they discerned any differences between teaching at pre-primary and grades 1-3 levels, one student responded: "*They know how to read and write in Grade 3 and it is easy, you go straight to the point. When tutors come, you do not choose pre-primary, even if you tell them to keep quiet, one will repeat after you, The pre-primary children are too slow and have 30 minutes, not 40 minutes, so you just go for Grades 1-3. Pre-primary learners are too slow*". Another student stated, "*I see the difference, there is totally a big difference, because with pre-primary, it is more like informal teaching, there are no real policies, I mean regulations, that you should teach. It is more of teaching and playing, informal teaching in play way, but in grades1-3, that is where you start real teaching. They learn through playing and just manipulating stuff but Grades 1-3 learners can learn a certain content.*" A third student had the following to say: "*A very big difference exists because when I was in pre-primary in my first SBS practice observation, when you teach pre-primary today, tomorrow if you ask them, they forget everything and if you do not repeat, they forget, they do not cope well. You should at least teach them, repeat that and ask questions to make sure they understand, but in other grades, they can remember what they learned previously. The attention span is short and, if you teach them more, some will go under the table, you need to be focused.*"

A few students said that the pre-primary learners are "*noisy and they like to go outside all at the same time. They learn only through singing, they don't write but only sing.*" Classroom management was an area of concern to some of the students, as they found the learners got excited when the teacher engaged with them and were eager to participate and concentrate. Furthermore, the students described how, when disciplining the pre-primary learners, they had to be polite and use non-violent measures, or else the children would erupt into noise making and withdraw from participation. The students noted that they found it difficult to introduce changes during SBS that might ameliorate the situation, since class teachers were reluctant to accept changes in their classrooms.

Possible Solutions for Improving SBS Practice

The students who participated in this study proposed certain suggestions for the implementation of the curriculum and assessment. One of the suggestions focused on the pre-primary phase, when students expressed the opinion that lecturers should emphasise this phase, not only in their presentations but also in assessment activities

such as micro-teaching. In addition, the students felt that SBS practices should include a specific time allocated to pre-primary teaching.

One student stated that "*for SBS, there should be something like a week or more for pre-primary. We must teach if we are given choices because if you want to apply for pre-primary teaching posts it will not be a challenge.*" And yet another stated "*we just need to do more practical. We need to do more practice, teaching practical, presenting lessons, because there are times you are teaching… We need more practice, we need more methods to help them understand.*" A different student made the following suggestion: "*I think we should do more micro-teaching, or just those presentations that pretend to teach with, students made to act like pre-primary, sometimes they are jumping up and down, to get the experience. We must be strict with the timing in Micro-teaching, if in large groups, only 2 or 3 speak, the rest are just standing, time management strict. Micro-teaching should be in smaller groups, only 2 or 3 speak and the rest are quiet.*"

Another suggestion was to make pre-primary a module of its own, from year 1 to year 4. "*With pre-primary, I would say it needs to have a separate module, like we have Env 1-3 which includes pre-primary. If we can have Env for pre-primary, or other modules separately, it would help in methodology teaching…. Things are different, teaching, methodology are different so there should be a module to help us to be able to teach pre-grade syllabus. There should be a separate module or something to help us teach since pre-primary has separate syllabus.*" Many of the respondents noted that Year 4 students can opt for different specialisations, one of which is the Pre-primary Education Module, while conceding that the number of students admitted to these specialised modules is limited to 35.

There were suggestions about the duration of the SBS practice. Some students felt that teaching in the pre-primary phase should no longer be an option but should rather be made compulsory. Another student commented: "*I think from the SBS department, they need to prolong the weeks for SBS. I think the time given is less, especially this phase 2. We need more time at schools, the period of 4 weeks is too little to get the experience, they need to increase the weeks or time.*" A student added that *If maybe, in some cases with module specializing in pre-primary, then lecturers should consider activities strictly based on pre-primary approach, like SBS phase 2 at the beginning of the year and in June again, between these 2 sessions, lecturers choose to assess us in pre-primary, what if they assess us in pre-primary and assess us in 1-3? At least it should be a must. Assess in pre-primary and in grades 1-3. I do not know if my lecturer knows how I teach in pre-primary. I want to add that I think the course needs to focus on pre-primary, maybe in a separate session. Maybe we can have a separate session of 2 weeks for pre-primary.*"

Discussion

The findings revealed some gaps and ambiguities that will be discussed here. With regard to students' experience, the results show that most students avoided teaching in the pre-primary phase because they felt they were not sufficiently competent. The various modules and assessment activities (including micro-teaching) offered for these courses mostly accentuate content and methodology for grades 1-3, as per their course

outlines. These do not incorporate much pre-primary content. The course curriculum leans heavily on teaching in grades 1-3 and lecturers tend to follow the curriculum to the word, thus leaving insufficient space for teaching pre-primary content and methodology. Kiggundu and Nayimuli (2009) assert that in order to achieve the standards required for qualified teacher status, teaching practice – whatever form it takes –should be aimed at inducting student teachers more fully into the professional work of teachers. Another reason given by the participants for the lack of interest in teaching in the pre-primary phase was that the community perceived it as a phase to be taught by grades 10 and 12 drop-outs and unqualified teachers. Our students may also regard this as a reason not to put more effort into practice teaching at this level. Thus, student teachers do not choose to teach at this level because they might encounter unqualified teachers who cannot offer them the support they need or they might be unwilling to be associated with a phase that anyone can do, not only university students. This points to an attitudinal problem in the communities that needs to be addressed. As Namibia's Fifth National Development Plan (NDP5) (2017) indicates, "the system is fragmented with 5-8 year olds managed by Ministry of Education, Arts and Culture (MoEAC), 0-4 by Ministry of Gender Equality and Child Welfare (MGECW), while nutrition and parenting [are] managed by Ministry of Health and Social Services (MoHSS), which leads to duplication of efforts" (p. 55). This was a remarkable and noteworthy finding that emerged from the group interview, since it clearly indicated that students only taught at this level because of an assignment that required them to do micro-teaching at pre-primary level. Otherwise, they would not have had this experience. In a microteaching programme, prospective teachers are trained to adjust theories to the actual learning conditions at school such as the duration of lessons, teaching methods and learning approaches as well as the diversity of students' characteristics (Retnawati, Sulistyaningsih & Yin, 2018).

This discovery made us recognise that there were no strict regulations of teaching practice at the pre-primary level, so student teachers feel free to disregard or overlook this level. It seems that SBS has no regulations for the duration and or for which grades students must do their practice teaching.

In terms of students' preferences for placement at schools, the results revealed that this depends both on the availability of the grades to be taught (the school's prerogative) and the students' own choice of grade. Therefore, many do not opt for the pre-primary level, either because the schools do not have a pre-primary grade or because they are unwilling to teach there because of lack of confidence. These results concur with those of Retnawati *et al.* (2018), who noted that the absence of a good initial introduction between the teaching practice team, the teachers and the school staff has also been one of the obstacles to implementing the teaching practice. If the schools were more flexible and receptive to accommodating student teachers in different grades, they would benefit immensely from this exposure.

The only experience that most student teachers gained at the pre-primary level was as a result of related assignments given them by their lecturers. In a more positive light, we noted that assessment activities in certain modules provided an opportunity, however minimal, to assist the students to teach at the pre-primary level.

In the SBS regulations, the prospectus for B Ed in respect of the pre- and lower primary phases states that students should have broad experience of teaching and learning in

the different subjects across all the grade levels. This requirement may not always be met because of the absence of pre-primary grades or a school's internal arrangements or the lack of clear guidelines indicating how much time student teachers should spend in each grade (Faculty Prospectus, 2014, 2015, 2016, 2017). This situation is similar to that described by Retnawati et al. (2005) who state that teachers should have at least four competencies to ensure effective learning namely pedagogical competence, professional competence, personal competence and social competence. Mokoena agrees (as cited in Mtetwa & Dyanda, 2003) that teaching practice offers student teachers the opportunity to learn and develop as professional teachers along the dimensions of pedagogic knowledge, subject matter knowledge, pastoral knowledge, ecological knowledge, inquiry knowledge and personal knowledge. The data gathered from student teachers in the study revealed that pre-primary learners have a different attention span and that there is insufficient guidance regarding the time allocated for teaching, teaching and learning materials, teaching strategies and management in particular. This is in line with Retnawati et al. (as cited in Uçar, 2012) who assert that "therefore, the quality of the teaching practice is determined by several variables such as teacher and prospective teacher, mentor and school where teaching practice is implemented" (p. 3654).

While some students realised that there was a difference between the two levels, some did not even get to practise at the pre-primary level due to the fact that the school to which they had been assigned did not have a pre-grade class. There is a lack of understanding of this phase since the students regard it as a phase without structured policies and syllabi. Many stated that they only needed to sing and play, since no actual teaching and learning took place at this level. Those who experienced teaching at this level found it to be stressful and one even said that he was "tasked [with just keeping] them busy". This indicates the poor light in which some schools see pre-primary learners as those whom anyone can teach or "keep busy". On the lecturer's side, it is true that we do not actually deal with pre-primary in our modules in any depth. However, some modules do give specific instructions for micro-teaching to be done at the pre-primary level during students' SBS phases 1 and 2. What we try is to give options in our assignments for micro-teaching or theoretical assessments. As attested by students, they opt for grades 1-3 as they find it easier to cope at that level.

To address this situation, we need to take a closer look at the curriculum and devise mechanisms for revising the content, teaching and learning methodologies and the production of relevant learning materials. We also need smaller classes to allow for sufficient micro-teaching practices for our students, as with the current numbers it would be impossible to do that.

When it comes to the challenges they face when teaching at the pre-primary level, students identified the lack of teaching and training received on campus to prepare them sufficiently for this phase and made suggestions accordingly. This is in line with the report of the evaluation done by NCHE in 2015. The report clearly identified a lack of training for the pre-primary level and recommended that steps should be taken to address it at all campuses offering B Ed at the pre- and lower primary levels. SBS departments should take cognisant of this fact and formulate regulations so as to prepare all student teachers in such a way as to both facilitate and mandate their trainee teaching at this level.

Conclusion

This paper looked at the experiences of our student teachers during their teaching practice, a pillar of their professional training. Teaching practice offers student teachers the opportunity to learn and develop as professional teachers in the dimensions of pedagogic knowledge, subject matter knowledge, pastoral knowledge, ecological knowledge, inquiry knowledge and personal knowledge Mtetwa & Dyanda, (as cited in Mokoena, 2017). The researchers were astounded to notice the low numbers of students who actually did their practice teaching in the pre-primary phase. The following recommendations are made to address this issue.

Recommendations

These are our recommendations:

i. With regard to students not having any teaching experiences at the pre-primary level, the researchers suggest clear regulations and guidelines for their teaching practice during SBS. Whether in phases 1, 2 or 3, students must be allocated a certain number of weeks or even lesson plans for them to ensure adequate exposure.

ii. Our data in Table 1 indicates that only 14% of year-4 student teachers had any teaching exposure at the pre-primary level which reveals quite a serious weakness in the programme. The omission should be rectified urgently, since the implications of having graduates in pre -and lower primary Education without any experience of pre-primary teaching are devastating for the foundation phase. Based on that and since students in year 4 are required to have 80 lesson plans, we recommend that these be divided into 4 phases of pre-primary up to grade 3, each with 20 lesson plans, thereby guaranteeing real experience of planning, teaching and learning for all these phases. This would serve to ensure that graduates have adequate knowledge and experience in all the phases as the Degree stipulates.

iii. Regarding students not being equipped adequately for this phase, the researchers recommend including one unit for each of the School Subject Modules, thereby ensuring that throughout their studies they will be kept informed of the pre-primary syllabus. This will include theory, practice and assessment. This will be in line with the recommendations made by National Council for Higher Education (2015) to improve the programme.

iv. SBS should ascertain that the schools are informed and implement the above recommendation for each phase so that all student teachers have specific allocations for each of the phases from pre-primary to grade 3 and rotate between the grades, unlike the present situation in which some schools allow a student teacher to remain in the same grade for the 11-week duration of SBS. The SBS department should ensure that all students are allocated to schools with pre-primary grades.

References

Bruner, J. (1996). *The culture of education.* Boston MA, USA: Harvard University Press.

Cakmak, M. (2008). Concerns about teaching process: Student teachers' perspective. *Educational Research Quarterly*, *31*(3): 57-77.

Elbaz, R. (1981). The teacher's practical knowledge: A report of a case study. *Curriculum Inquiry*, *11*(1): 43-71.

Fenstermacher, G.D. (1994). The knower and known: The nature of knowledge in research on teaching. *Review of Research on Teaching*, 20: 3-56.

Kiggundu, E., & Nayimuli, S. (2009). Teaching practice: A make or break phase for student teachers. *South African Journal of Education*, *29*: 345-358.

Koehler, M. J., & Mishra, P. (2008). Introducing technological pedagogical content Knowledge. Annual meeting of the American Educational Research Association, New York City.

Mena, J., Henissen, P., & Loughran, J. (2017). Developing pre-service teachers' professional knowledge of teaching: The influence of mentoring. *Teaching and Teacher Education, 66*: 47-59.

Mokoena, S. (2017). Student teachers' experiences of teaching practice at open and distance learning institution in South Africa. *Turkish Online Journal of Distance Education-TOJDE, 18*(2): 122-133.

Msangya, W. B., Mkoma, S. L., & Yihuan, W. (2016). Teaching practice experience for undergraduate student teachers: A case study of the department of education at Sokoine University of Agriculture, Tanzania. *Education and Practice, 7*(14): 113-118.

Mtetwa D.K., & Dyanda, C. (2003). Outcomes of a teaching practice. In: Mokoena, S. (2017) student teachers' experiences of teaching practice at open and distance learning institution in South Africa. *Turkish Online Journal of Distance Education-*TOJDE April 2017 ISSN 1302-6488 Volume: 18 Number: 2 Article 10

Namibia's 5th National Development Plan (NDP5). (2017). *Wording together towards Prosperity. National Planning Commission*. Windhoek, Namibia. www.npc.gov.na

National Council for Higher Education. (2015). *Report on the academic programme accreditation of the Bachelor of Education (pre- and lower primary education*). Windhoek, Namibia   http://www.unam.na

Opfer, V. D., & Pedder, D. (2011). The lost promise of teacher professional development in England. *European Journal of Teacher Education*, *34*(1): 3-24.

Retnawati, H., Sulistyaningsih, E., & Yin, L. (2018). Students' development in teaching practice experience: A review from mathematics education students. *Journal Riset Pendidikan Matematika*, *5*(1): 1-17.

Schön, D.A. (1996). *Educating the reflective practitioner: Toward a new design for teaching and learning in the professions.* San Francisco, USA: Jossey-Bass.

Shulman, L.S. (1986). Those Who Understand: Knowledge Growth in Teaching: Educational Researcher, 15(2): 4-14.

Acknowledgements

Call for manuscripts

Researchers, scholars, teachers, administrators, specialists, and advanced graduate students are invited to submit manuscripts. Journal of Educational Research on Children, Parents and Teachers, is seeking theoretical and empirical articles that seek to advance knowledge and theory of the education on the welfare of children, teachers and parents in education. Papers that derive data from quantitative, qualitative and mixed-methods approaches will be given consideration. Papers may be submitted by prospective authors at any time of the year for consideration. This journal is published quarterly in both online and print versions.

Aims and objectives

The Journal of Educational Research on Children, Parents and Teachers, is a publication of the African Educational Research and Development Foundation (AERDF). The journal publishes theoretical and empirical articles that seek to advance knowledge and theory of the education on the welfare of children, teachers and parents in education. Papers that derive data from quantitative, qualitative and mixed-methods approaches will be given consideration. It is equally important to note that views expressed in articles published by the Journal of Educational Research on Children, Parents and Teachers do not necessarily reflect the positions of the African Educational Research and Development Foundation.

Submission requirements

Welcome to the Journal of Educational Research on Children, Parents and Teachers (ERCPT Journal) – bringing you high a quality journal and articles by Professionals. The Journal of Educational Research on Children, Parents and Teachers is a high-quality research journal that is published by the African Educational Research and Development Foundation (AERDF). It provides a platform for researchers, academicians, professional, practitioners and students to impart and share knowledge in the form of high quality empirical and theoretical research papers, case studies, literature reviews and book reviews. Manuscripts can be emailed to: ercptaerdf@gmail.com and okekeco@ufs.ac.za

Author details

These must include full names, institutional affiliation and physical address, and email addresses of all participating authors. In the case of multiple authors, the corresponding author should be stated.

Publication language

English language (USA or UK English but not both in same manuscript)

Manuscript types
Original articles, position or theoretical papers, book reviews

Manuscript preparation
Manuscripts must follow the most conventional approach including title, abstract (maximum of 200 words), keywords (between 5 and 7), introduction, literature review, methodology, findings, discussions and references. Note that tables, figures and appendices (if any) must be part of the main manuscript.

Ethics and conflict of interest
All forms of contributions and sponsorships must be acknowledged, and declarations must be duly reported in the manuscript.

Word limit
Minimum: 5000; maximum: 8000 including references, tables, figures and appendices.

Submission format
MS Word, Font size is 12, and Font style is Ariel

Referencing style
Journal of Educational Research on Children, Parents and Teachers follows the citations and referencing style consistent with the American Psychological Association (APA) and the Harvard Manuscript preparation styles.

Publication charges: No charges
Manuscripts' submission and publication in this journal is from henceforth free. The Journal of Educational Research on Children, Parents and Teachers is the official journal of the African Educational Research and Development Foundation. From 1st January 2020, accepted papers are published at no author or page fees. This journal charges no fees for the publishing of accepted papers.

ABOUT THE AFRICAN EDUCATIONAL RESEARCH & DEVELOPMENT FOUNDATION

Welcome to the **AFRICAN EDUCATIONAL RESEARCH & DEVELOPMENT FOUNDATION (AERDF) -** providing a platform for academics from Africa and beyond. The central aim of the African Educational Research & Development Foundation (AERDF) is to provide the formal platform for academics across the Continent of Africa and beyond to engage with academic research and the dissemination of the product of such research endeavour in a more professional and coherent manner.

ABOUT US

The establishment of the African Educational Research & Development Foundation (AERDF) represents a major step at providing the much-needed professionally coherent Continental platform for academics within the Continent of Africa. This is because it provides the opportunity for researchers and academics from different research tradition to work together for a common good-engaging in research as well as disseminating the outcomes of such research with a clear mandate aimed to impact the provision of educational services within the Continent. Africans in postgraduate studies, academics and researchers are encouraged to be a part of this initiative. The Journal of Educational Research on Children, Parents and Teachers, is a publication of the African Educational Research and Development Foundation (AERDF). The journal publishes theoretical and empirical articles that seek to advance knowledge and theory of the education on the welfare of children, teachers and parents in education.

Joining the Association

If you would like to join the African Educational Research and Development Foundation (AERDF), you can download an application form from: https://ercptjournal.org/ and email it to: ercptaerdf@gmail.com. Membership is free.