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Editorial

The management of *Papers in Education and Development (PED)* Journal is delighted to bring out Volume 40, Number 2 of 2022. This issue is a collection of ten research-based papers that address various contemporary concerns across the education system. Interestingly, this issue unveils matters from pre-primary, primary, secondary, in-service teacher, and higher education sub-sectors from the Tanzanian context and elsewhere.

In the first paper, Morwo Likinjiye, Blackson Kanukisya and Joyce Ndabi investigate the views of students on learning environment for undergraduate mathematics in Tanzania. Data from questionnaires and interviews revealed that students' views were positive on lecturers' characteristics, academic relationships, as well as gender sensitivity in the learning environment. However, students had a concern on the teaching methods for the subject, the nature of tests during their coursework, as well as marking and grading styles. The authors conclude that, among others, contrary to observations in non-mathematics contexts, male and female students held similar views on many aspects of the learning environment for undergraduate mathematics. Next, Samuel Meroyi, Odunola Olajide and Abayomi Alaka employed paper reviews literature to examine what knowledge is and ought to be in the 21st century. Employing a speculative approach, conceptual analysis and prescriptive research methods in philosophy to expound the creation of knowledge that will be relevant for the 21st century society, the paper has revealed that there are educational initiatives in place that are being taken in the 21st century to set an educational agenda that meets the local and global standards. This implies that universities and schools have an increased role to play in the 21st century including training and recruiting learners, who can, at different levels, demonstrate creativity, critical thinking, communication and collaboration. The paper recommends that knowledge creation must extend to include the physical, mental, emotional and social domains of learning as required in the 21st century.

In the third paper, Aaron Manase, Moshi Mislay and Simon Peter examine ideologies, policies, and university practices of educational leaders' preparation in higher learning institutions in Tanzania and proposes an alternative model for educational leaders' preparation. This narrative literature review takes stock of the trajectory of graduate educational leaders' preparation development in Tanzania by situating relevant initiatives in the educational macro-policies and transformations spanning a period of about six decades for possible future educational policy direction. The analysis has shown that the assumption in Tanzanian education institutions seems to be that preparing an educational leader as a classroom teacher is enough for productive leadership of educational and training institutions. In terms of policy,

it has been found that since independence to date, educational leaders' preparation (ELP) has received less attention in Tanzania's national education policy discourses despite the fact that graduate educational leaders attest to a questionable leadership capacity. Practically, universities' ELP practices in Tanzania seem to have largely preserved a colonial model for ELP. A strong case has been made that the present modality of preparing educational leaders hinders Tanzania's higher learning institutions from grooming competent future educational leaders. Thus, an alternative model has been advocated in this paper to redress the current modality. In the next paper, Martanus Ochola and Mwajabu Possi examine the role of teachers' self-efficacy and demographic variables during their inclusive practices. Data from structured questionnaire was collected from 254 in-service teachers from 18 inclusive primary schools in Tanzania. It was found that there was a statistically significant and positive relationship between teacher self-efficacy and their inclusive practices. Regression analysis indicated that teachers' self-efficacy, particularly in instructional practices, as well as teacher demographics (except gender, age, and education) were considered to be significant factors that predict their inclusive practices. Thus, the study recommends for educational interventions to promote teachers' competence, self-confidence, knowledge, and skills in order to promote inclusive practices in schools in Tanzania.

Chris Mauki and Daniel Marandu's paper presents a quantitative assessment of the relationship between self-esteem and sexual risk-taking behaviours among adolescents. This correlational study used a questionnaire for data collection and Pearson's Correlation Coefficient results showed no significant relationship between self-esteem and sexual debut ($r = .081$, $p > 0.05$), self-esteem and safe sex ($r = .081$, $p > 0.05$) and a weak positive relationship between self-esteem and multiple partners ($r = .033$, p .470). This implies that self-esteem did not influence sexual risk-taking behaviours among adolescents. The sixth paper is Titilayo Adeoye's investigation of the need for cognition, parental involvement, and extraversion as factors determining academic self-efficacy among secondary school students in Oyo State, Nigeria. It adopted a correlational descriptive research design to collect data from secondary school students who were chosen based on a multistage sampling technique. Data were collected by means of a questionnaire focusing on the following variables (Need for Cognition $r=0.84$; Parental Involvement $r=0.83$; Extraversion $r=0.86$; and Self-Efficacy $r=0.87$). Pearson Product Moment Correlation Coefficient and Multiple Regression analyses revealed that the need for cognition ($r=.804$), and parental involvement ($r=.788$) had a strong positive correlation with academic self-efficacy while extraversion had a weak correlation with academic self-efficacy ($r=-.203$). Parental involvement was the most potent out of the predictor variables ($\beta=.478$), followed by the need for cognition ($\beta=.365$). Extraversion made a negative contribution to the predictor of academic self-efficacy

(β=-.245). Regression analysis revealed that the three independent variables (need for cognition, parental involvement, and extraversion) jointly accounted for 55.2% (Adjusted R^2=.552) variation in the prediction of self-efficacy. The study recommends that school counselors should counsel students on the need to develop higher academic self-efficacy in order to bring about excellent results in their academics.

In the seventh paper, Janeth Mlay, Stephen Mabagala and Joyce Ndabi employ Bronfenbrenner System Theory to present findings from the exploration of primary school pupils' inclusion in physical activities. Data were collected through interview, documentary review, and observation methods. Thematic analysis revealed specific and general challenges such as lack of sign language skills used during physical activity, poor aesthetic attributes, inaccessible physical activity facilities and equipment, stigmatization, unsafe play facilities and lack of physical activity programmes. The findings further exposed that the school was insufficiently equipped for inclusion. Based on the findings, it is recommended that schools should provide a conducive environment for inclusion of pupils with hearing impairment in physical activities. The next paper is Faustine Masath's examination of the reasons for the increase in primary school teachers' stress and a decline in teachers' professional attitude in Tanzania. The findings emanate from 12 randomly selected public primary schools of Tanzania (N = 173, Mean Age = 38.10 years, SD = 10.0). Using a hierarchical regression moderation model, a significant association was found between teachers' professional attitude and their level of stress ($\beta = -.21$, $p < .001$), which was moderated by mental health ($\beta = -.12$, $p < .029$). The findings call for interventions to enhance teachers' wellbeing including their mental health in order to improve their organizational and life performance.

In the penultimate paper, Jaquiline Amani employs a survey design to explore subject preferences, career aspirations, and sources of career information of 287 primary school pupils. A questionnaire with open-ended and closed-ended questions was employed to collect data. Findings indicated that out of the ten taught subjects, pupils ranked Kiswahili as their most preferred subject and English as the least preferred subject. In terms of career paths, it was revealed that most of the pupils aspired to become medical doctors, teachers, soldiers, and engineers. These pupils' career aspirations emerged to be gender-stereotyped, with only a few girls showing a keen interest in science and engineering fields. Moreover, the pupils identified their parents as the most trusted source of information on careers. Based on these findings, career preferences appear to unfold during childhood with a range of factors such as parents, teachers and the quality of career information received through socialisation nurturing and shaping these choices. Finally, Awino Zadock shares findings from a qualitative study on pre-primary teachers' perspectives on

school-based instructional supervision practices for improving teaching skills. The study unveiled that head teachers' instructional supervision practices were not effectively done, and they were lacking appropriate supervision skills for pre-primary classes. Conversely, pre-primary teachers wanted supervisors to conduct pre and post instructional supervision discussion. Besides, there were no formal arrangements for teachers to learn new teaching strategies. The study suggests that instructional supervision process should be collaborative and conducted regularly through strategies such as mentoring, coaching, teaming, clinical supervision and professional growth plans.

We are optimistic that these articles will initiate further dialogue on various issues in educational policy and practice both nationally and internationally. Finally, we are exclusively indebted to Editorial Board members and article reviewers who constantly render services to our journal *pro bono*. We congratulate all authors and welcome our esteemed readers to enjoy the reading.

Eustella P. Bhalalusesa
Chief Editor of Papers in Education and Development

CONTENTS

Students' Views on Learning Environment for Undergraduate Mathematics in Selected Higher Learning Institutions in Tanzania

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Abstract

The aim of this paper is to find out views of students on learning environment for undergraduate mathematics in Tanzania. 303 male and 120 female undergraduate students participated in the study. Data were collected through questionnaire and interview methods. Students' views were positive on lecturers' characteristics, academic relationships, as well as gender sensitivity in the learning environment. However, the students had a concern on the teaching methods for the subject, the nature of tests during their coursework, as well as marking and grading styles. This paper concludes that, among others, contrary to observations in non-mathematics contexts, male and female students hold similar views on many aspects of the learning environment for undergraduate mathematics. However, these views depended on the mode of students' participation in the subject.

Keywords *gender, gender sensitivity, lecturers' characteristics, undergraduate, post-compulsory mathematics*

Introduction

The problem of low female students' uptake of mathematics is reported to be more acute in higher education. For instance, UNESCO (2017) revealed a global average for female students studying university mathematics to be less than two percent. This percentage would rapidly drop for the advanced university mathematics (core-mathematics courses). For statistics courses and applied mathematics, there is literature evidence that the number of female students has been promising although a gender gap is still evident. The underrepresentation of female students in higher education in the areas of mathematics, technology and engineering is very low in developing countries such as those in the Sub-Saharan Africa and some parts of Asia (Kinyota, 2021).

This gender gap in mathematics has long been attracting policy, research and media discussions. For instance, Leder (2019) indicates that the research and policy interests on gender and mathematics may have begun from the 1970s to date. In

recent times, this interest has been intensifying for post-compulsory mathematics. Alcock, Attridge, Kenny and Inglis (2014) argued that, the concern for gender and mathematics is now on the existence of gender gap in post-compulsory mathematics participation, gender differences on experiences of post-compulsory mathematics as well as academic progress in the subject. Likewise, Leder (2019) concluded from a review of the history of research in gender and mathematics that current policy and research interests regarding gender and mathematics are turning towards the advanced mathematics subjects particularly in higher education.

The concern for gender in education, particularly promoting females' access, performance and retention, is not recent in Tanzania. This is illustrated by Posti-Ahokas and Lehtomaki (2014) who reports that the efforts for widening access to schooling for all students and hence retention and performance have been featuring in various educational policies since 1961 to date in Tanzania. Several practical initiatives were undertaken in Tanzania for increasing access to schooling at primary and secondary education. One such initiative included the use of the quota system of separate selection for girls and boys into form one. This reduced the competition that girls had to undergo against the boys for being selected in subsequent levels of education. At the higher education, the most pronounced initiatives for female students' participation in Science, Technology and Mathematics (STEM) fields were the affirmative actions introduced in the 1990s. Studies such as Kilango, Qin, Nyoni and Senguo (2017) and Aggrey, Oliver and Stella (2014), illustrate several affirmative actions for gender balance in Tanzania's higher education. This included pre-entry programmes (PEP) where remedial training were provided to the female students with university qualifications but missed admission points for science and mathematics degree programmes. Another included the Preferential Admision Criteria (PAC) where the females with qualification but had grades below that of the male applicants by 1.0 or 1.5 points were considered for admission into mathematics and the sciences. Female Undergraduate Scholarship Programme (FUSP) was also among the affirmative actions reported to have been introduced for attracting female students into mathematics and science fields.

Despite the existing initiatives, available evidences indicate that the progression of females from one level of education to another is in a decreasing trend and hence a problem yet to be solved (MoEVT, 2014). Data from the President's Office-Regional Administration and Local Government, PORALG (2020), for the students who register for the advanced mathematics national examinations suggest that participation in mathematics decreases rapidly for the female students as the level of education increases. The data suggest that the proportion of the male students is nearly twice that of the female students. Moreover, the data indicate that the uptake of the advanced mathematics subjects by females and males is the least of all the subjects taught at the advanced secondary education level. This

low number of the female students was also observed by Mazana, Montero and Casmir (2020). Consequently the low uptake of advanced mathematics for the female students as well as choices against undergraduate mathematics, and the ratio of males to female students in the subject have increased to over three times. For instance, the males to females ratio for the first year mathematics students in electronics degree programme for the year 2017/2018 at the University of Dar es Salaam (UDSM) was 3:1, for Bachelor of Science with Education was 9:1. For the second year students, the ratio of male to female students was 3:1 and 7:1 for the two degree programmes respectively.

This low progress in mathematics particularly by the female students is partly caused by factors related to the learning environment. Studies report the home environment, especially heavy workloads for girls, as leading to gender gap in performance in Tanzania. Furthermore, the school environment in particular the dominance of male mathematics teachers in schools, as well as inadequate physical facilities such as toilets appears to be among the reasons for gender disparities in mathematics. Chouinard (2017) illustrated that, the link between learning environment, gendered choices and performance follows from the fact that it impacts on students' motivation, self-efficacy and study approaches.

Furthermore, the evidence indicates that the female who progress into Science and Technology disciplines in higher education in Tanzania experience a discriminatory and gender stereotypical learning environment. For instance, the study by Modest (2012) reports aspects of gender discrimination and gender stereotypes regarding grades obtained by females as well as their ability in STEM subjects. This minority environment is described as a chilly climate for the female students or masculine environment. Kinyota (2021) as well as Rukondo and Kinyota (2021) report similar findings of gender stereotypes for the minority females in STEM subjects. Particularly, male students were reported to hold negative gender stereotypes even when female students were the ones outperforming the male students in the sciences.

Research evidence on how male and female students view the learning environment for the individual STEM subjects is scanty in Tanzania. Views on the learning environment are particularly important for undergraduate mathematics courses given that the subject is leading with fewest female students. On the other hand, mathematics at the university level has long been characterized by failure and high attrition rates (Mazana, Montero & Casmir, 2020). For instance, at the University of Dar es Salaam, Mwalimu Nyerere Campus, retrieved results from students Academic Registration Information System, UDSM (2022) indicate high supplementary, carryover cases, and discontinuation from studies for most of the mathematics students. This failure rates as further observed by Mazana, Montero

and Casmir (2020) affects both male and female students despite their previous performance grades. This paper therefore intended to find out views of students on the learning environment of mathematics among undergraduate students.

Theoretical Framework

The term learning environment receives different meanings in the literature. The most common meaning of the term learning environment concerns the physical state of the classroom or the homestead for supporting learning or private studies. This includes temperature, air-conditioning, level of noise, class size and others. A review by Alhija and Levi-Eliyahu (2019) reveals that the most frequently used meaning of the term learning environment in the literature is as a psychological or psycho-social environment. This social and psychological environment of the classroom or school and even home pertains to feelings, comforts, teacher-student relations, and student-student relations. For instance, in the most common scales developed for measuring learning environment, such as that by Hermann, Bager-Elsborg and Parpala (2017), the dimensions include peer support, staff enthusiasm, quality teaching, and alignment of the tasks to course and to goals or objectives. In theories of academic achievement such as educational productivity, the term psychological environment has also been described in terms of classroom climate, meaning the degree of classroom intimacy, social homogeneity and democratic policy.

The common referred framework for understanding the learning environment and its dimension is the Moos (1980) Tri-dimensional Classroom Climate Model. This model, as claimed by Alansari and Rubie-Davies (2020), regards the learning environment as constituted of three dimensions, namely the personal growth dimension, the relationship dimension, and the system maintenance dimension. The personal growth dimension is concerned with how experiences within the classroom or school community support students' academic developments. This pertains to aspects such as task orientation, competitiveness, autonomy and relevance or integration of the learning content. Importantly, the personal growth dimension of the learning environment measures factors related to classroom practices and their contribution to learning gains.

The relationship dimension focuses on the interpersonal relationship in the academic lives of the students. It involves teachers and students academic relationship as well as student-student academic and friendly relationships. Baars et al. (2021) argue that this relationship dimension includes feelings of being affiliated in the group as well as being accepted and supported in that learning community. The system maintenance dimension refers to aspects such as order, control, expectations as well as responsiveness to change (Baars et al., 2021). Furthermore, this dimension

involves also grouping of teachers and students, scheduling of the learning activities and overall regulation of the learning process.

In Tanzania and Africa in general, studies examining views of students on the learning environment for higher education mathematics are generally scanty. However, studies such as Modest (2012), Kinyota (2021) and Rukondo and Kinyota (2021) from Tanzania, found negative experiences of the females with respect to STEM learning environment. These studies report females viewing the learning environment as male dominated and comprised of negative gender stereotypes. Knowledge on how the learning environment for higher education mathematics is viewed by male and female students is important given claims that, views are dependent on the nature of the specific subjects of study (De Clercq et al., 2013) or structure of the degree programme in which the students are enrolled.

Methodology

This study involved a total of 423 undergraduate mathematics students. Among them, 120 were females and 303 were males. The sample size for all students was determined using the Krejcie and Morgan (1970) table for sample size determination followed by systematic sampling. The students were from three university campuses in Tanzania, namely University of Dar es Salaam Mwalimu Nyerere Campus, Dar es Salaam University College of Education (DUCE), and Mkwawa University College of Education (MUCE). 163 (100 males and 63 females) were from degree programmes where mathematics is a compulsory major, while 260 (203 males and 57 females) students were from degree programmes where mathematics is a voluntary major. The campuses were selected based on university degree programmes' capacities outlined in the Tanzania Commission for Universities (TCU) guideline for the year 2018 particularly on the sciences. Tanzania Commission for Universities (TCU) is responsible for quality assurance for higher education institutions and it releases guidelines regarding admission requirements as well as programme capacity for each institution of higher learning in Tanzania. The mathematics students selected for this study were those pursuing Bachelor of Science with Computer Science, Bachelor of Science in Electronics, Bachelor of Science in Meteorology, Bachelor of Science with Education, and Bachelor of Education in Science.

The data collection instruments involved a questionnaire and interviews. All 423 students taking mathematics from the aforementioned degree programmes were provided with the questionnaires in their co-mathematics courses that combine students from various degree programmes. The questionnaire collected both students' background information as well as their perceived learning environment. The questionnaire items were adapted from scales for measuring the learning environment available in the literature such as Herrmann, Bager-Elsborg and Parpala

(2017). The scale for learning environment was comprised of Likert items where a score of 1 represented '*strongly disagree'*, 2 represented '*disagree*', 3 represented '*agree*' and 4 represented '*strongly agree*'. The questionnaire was comprised of four sub-scales: academic support, teaching style, lecturer characteristics, and gender sensitivity in the learning environment. The questionnaire was piloted using first year students at the Mwalimu Nyerere Campus. Cronbach's alpha reliability coefficient for the questionnaire scale for measuring views of the learning environment was $\alpha = 0.761$. The sub-scales for the questionnaire included *academic support* ($\alpha = 0.56$), *teaching style* ($\alpha = 0.68$), *lecturer's characteristics* ($\alpha = 0.74$), and *gender sensitivity* ($\alpha = 0.88$).

Then among the selected students 20 (10 females and 10 males) were purposively selected to participate in face-to-face interviews basing on their previous experience with mathematics including school types attended, grades and also their performance in undergraduate mathematics. The interview guide was constructed to reflect the questionnaire sub-scale of the learning environment. The interviews were conducted around the university campuses in locations selected by the interviewees themselves. Each interview lasted between 45 and 60 minutes and were recorded using a voice recorder and also through note taking. The questionnaire responses were analysed descriptively using tables and charts and also chi-square test of independence and t-tests using SPSS version 20. The chi-square test of independence was used for comparing views of males and females at item level within the questionnaire sub-scales. The t-test was used for comparing the views of males and females at sub-scale levels of the questionnaire. The interviews responses were analyzed thematically. This included transcribing, reading, coding, searching for themes, reviewing and collating themes and writing the description. The presentation of interview responses was done using pseudonyms of letters A1, A2, A3… to represent the participants.

Findings

Analysis of the questionnaires indicated that males and females were different on their background characteristics. As indicated in Table 1, female students on average were of younger age compared to male students. Regarding prior performance, the majority of females had higher performance from both advanced and ordinary level secondary education compared to the males. In terms of school type attended, it was found that majority of females were from private schools at ordinary level secondary education compared to the males. In terms of subject combination at advanced level secondary education, it is indicated that males and females were similar in that Physics, Chemistry and Mathematics (PCM) was the leading combination followed by Economics, Geography and Mathematics (EGM) and then Physics, Geography and Mathematics (PGM) for both male and

female students. Moreover, the female students reported having family members with higher education levels compared to the males.

Table 1*: Background Characteristics of the Male and Female Undergraduate Mathematics Students*

	Males	Females	Total
A-level Performance			
Division one	52.1	65.7	56.0
Division two	43.9	30.6	39.8
Division three	4.0	3.7	4.2
O-level performance			
Division one	37.6	55.7	42.8
Division two	45.9	30.4	41.1
Division three	16.5	13.9	16.1
Age(years)	23 (SD= 2.83)	22(SD=2.23)	23(SD=2.72)
O-level School type			
Government	72.3	34.5	61.4
Non-government	27.7	65.5	38.6
Subjects combination			
PCM	59.2	63.0	60.6
PGM	11.8	12.6	12.0
EGM	29.0	24.4	27.4

Regarding views on the learning environment for higher education mathematics, Table 2 indicates students' percentage responses from the questionnaire. Overall, the students had generally positive views about the learning environment for mathematics regardless of gender. For instance, on the perceived academic support, majority of the participants agreed with the suggested views in the questionnaires. The minimum cumulative percentage for strongly agree and agree responses was 61.1 for the males and 70.6 for the females. For the items on lecturers' characteristics, cumulative percentage responses in agreement with the items were above 70.0 for all the items except that on marking and grading. Regarding teaching style, it is indicated that students were generally positive on the items with exception on the views that the pace of teaching undergraduate mathematics is fast for students to grasp lectures. With this particular item, the cumulative percentage response raises near 50%. When a Chi-square test of independence was run for all the items

in the three sub-scales illustrated in Table 2, statistically significant differences by gender on the percentage responses were noted only on the following two items: *I am comfortable with the methods used for teaching undergraduate mathematics; and Mathematics lecturers are fair in marking and grading.* Females were likely to report being uncomfortable with the marking and grading while males were likely to report uncomfortable with the methods used for teaching mathematics. For these two items, however, the cumulative percentage for agree and strongly agree responses were still above 50% for both male and female students

Table 2: *Males and Females Percentage Responses on the Learning Environment for Undergraduate Mathematics*

Statements	Sex	SD	D	A	SA	χ^2	P-value
Academic support (α = 0.56)							
Lecturers are usually available for supporting me when I have an academic problem in mathematics.	F	4.3	14.8	50.4	30.4	2.42	0.49
	M	8.7	15.2	45.8	30.3		
I fear seeking tutorial support from my maths lecturers.	F	20.9	48.7	22.6	7.8	3.55	0.32
	M	21.8	39.3	27.3	11.6		
My fellow mathematics students are usually supportive to me academically.	F	2.6	7.8	44.0	45.7	0.84	0.84
	M	2.5	10.5	44.4	42.5		
Discussion with my fellow students helps me to improve my understanding.	F	1.7	8.6	38.8	50.9	0.53	0.91
	M	1.5	10.9	38.9	48.7		
I can receive help for mathematics from my fellow students when I need it.	F	0.0	4.5	31.8	63.6	5.39	0.15
	M	0.8	2.5	50.8	45.9		
Teaching style (α = 0.68)							
I am comfortable with the methods used for teaching undergraduate mathematics.	F	6.9	11.2	59.5	22.4	9.25	0.03*
	M	4.0	21.9	47.4	26.6		
The pace of teaching mathematics is too fast for me to grasp lectures.	F	7.1	47.8	34.5	10.6	6.54	0.09
	M	7.7	34.2	42.6	15.4		
Mathematics lecturers are generally organized in presenting contents by following course outlines.	F	1.8	13.2	58.8	26.3	2.26	0.52
	M	4.0	11.3	54.2	30.5		
Mathematics lecturers use different strategies and teaching devices for presenting their lectures.	F	1.7	13.9	59.1	25.2	0.68	0.88
	M	2.2	16.6	55.2	26.0		
Mathematics lecturers generally explain the objectives of their lectures clearly at the beginning of each lesson.	F	4.3	14.7	54.3	26.7	1.40	0.71
	M	3.3	18.5	49.6	28.6		

Lecturer characteristics (α = 0.74)							
Mathematics lecturers are fair in marking and grading tests and examinations.	F	9.1	33.6	49.1	8.2	8.72	0.03*
	M	3.4	25.9	59.7	11.0		
Mathematics lecturers show good relationship with students.	F	5.3	9.7	57.5	27.4	3.63	0.30
	M	1.8	10.7	57.2	30.3		
Mathematics lecturers impose proper discipline and use proper rules.	F	1.8	8.8	58.8	30.7	1.08	0.78
	M	2.9	11.4	56.8	28.9		
Mathematics lecturers are firm and consistent in decision making.	F	0.9	8.7	60.0	30.4	2.11	0.55
	M	0.4	11.2	53.3	35.1		
Mathematics lecturers have appealing personality and sense of humour.	F	6.1	18.4	53.5	21.9	4.98	0.17
	M	2.9	12.5	59.7	24.9		

**Means statistically significant at α = 0.05*

Gender sensitivity was also among the four sub-scales of the questionnaire (α = 0.88). Figure 1 illustrates the items and the responses for the female and male students respectively. High percentage disagreements with these items indicate views that the learning environment was gender sensitive. This was because the items were set to suggest differential treatment between male and female students.

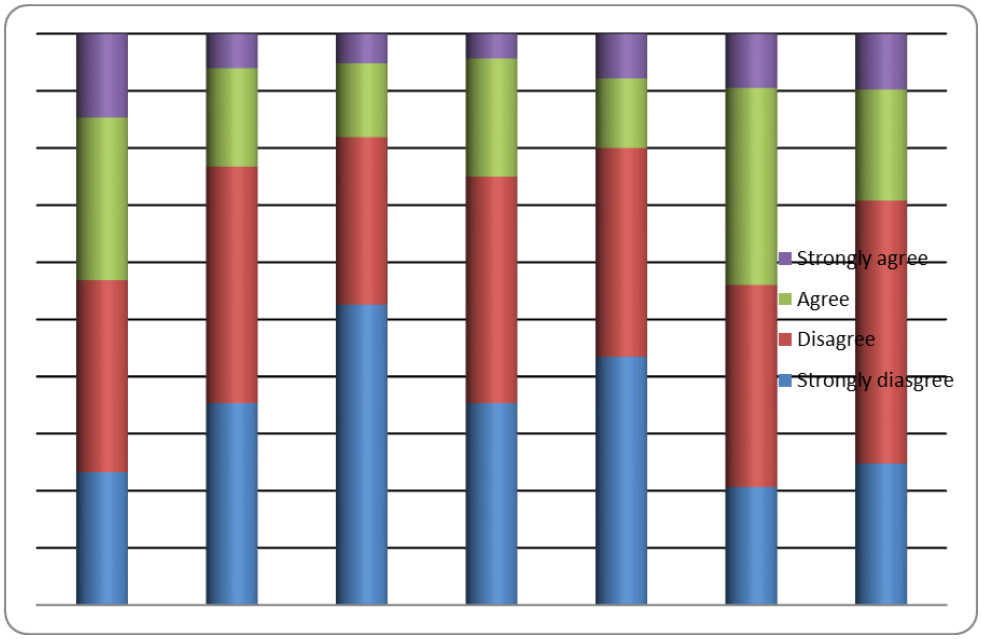

Figure 1. Female students' views on gender sensitivity in mathematics

Figure 1 indicates the percentage responses for strongly agree and agree (green and purple) colours together) are less than 40% for all the items indicating a high disagreement with these items by the female students. The percentages for disagreement for each of the seven items from the male students were above 56%.

These reflect a similar pattern to that of the female students suggesting views that the learning environment is gender sensitive. A Chi-square test of independence supported this similar pattern as none of the seven items showed statistically significant difference on the responses for male and female students.

The analysis of the students' questionnaire responses of males (*N = 303*) and Females (*N = 120*) at sub-scale level, as indicated in Table 3, corresponded with the items' level analysis presented in Table 2. The mean scores for the sub-scales suggested positive views on the learning environment for undergraduate mathematics. This resulted from the fact that the mean scores ranged from 3.04 to 3.11 for the male students (*M1*) and from 3.04 to 3.22 for the female students (*M2*). The mean scores from 3.00 and above indicate agreement because the Likert scale comprised of a score of '1' representing a strongly disagree response, a score of '2' for disagree response, a score of '3' for agree response and a score of '4' for a strongly agree response. Although both male and female students showed positive views, female students were more likely to report availability of academic support than the male students. On the gender sensitive sub-scale, the mean score was 2.20 for male students and 2.12 for the female students indicating disagreement that the learning environment was gender biased. This lower mean score for the female students implies that females were more likely to disagree that the learning environment is gender biased compared to males.

Table 3. *Mean differences by gender and participation mode on the perceived learning environment sub-scales*

	M_1	M_2	*t*-value	*p*-value
Gender (Males Vs Females)				
Academic support	3.11	3.22	-1.98	0.049*
Lecturers' teaching style	3.04	3.07	-0.48	0.630
Lecturers' characteristics	3.05	3.04	0.26	0.800
Gender sensitivity	2.20	2.12	1.25	0.210
Females by mode of participation				
Academic support	3.24	3.2	0.45	0.650
Lecturers' teaching style	2.95	3.21	-3.35	0.001*
Lecturers' characteristics	2.94	3.14	-2.40	0.018*
Gender sensitivity	2.03	2.22	-1.88	0.063
Males by mode of participation				
Academic support	3.14	3.09	0.77	0.450
Lecturers' teaching style	2.87	3.13	-4.00	< 0.001*
Lecturers' characteristics	2.90	3.13	-3.50	0.001*
Gender sensitivity	2.04	2.29	-3.16	0.002*

**Means statistically significant at* $\alpha = 0.05$

Separate analysis of males and females in terms of mode of participation in mathematics, as is further indicated in Table 3, suggested degree programme difference on views on the learning environment for mathematics. The male students ($N = 100$) and female students ($N = 63$) in degree programmes where mathematics is a compulsory major (as indicated by *M1*) were more likely to report negative views on lecturers' teaching styles and lecturers' characteristics.

The findings from the questionnaire nearly corresponded to those from the interviewed mathematics students as presented in the subsequent section.

Academic Relationship with Lecturers

The interviews revealed positive views for most of the male and female students on their academic relationship with mathematics lecturers. It was reported by the participants that mathematics lecturers were generally willing and ready to offer academic support to all students. The interview responses indicated that during lectures, the lecturers often provide their office numbers for students' consultation and encourage the students to visit them for academic help. It was, however, noted that consulting lecturers in their offices was a rare practice among all students taking mathematics regardless of gender as unveiled by C1 (female student):

> Mathematics lecturers are very cooperative but there is low readiness for students to consult them for help. The lecturers insist students to visit them in their offices in case they need help but students rarely utilise this opportunity.

The views in the foregoing quotation regard lecturers as cooperative and tend to encourage students to consult them for academic problems. When the students were further inquired why they do not consult lecturers, several reasons were provided. For instance, consulting lecturers in their offices was illustrated as a last resort because students prefer first to consult each other for academic support. Some reported that consulting lecturers was rare because of the students' own study approaches. Students were reported to study for examination or test such that concentration on studies emerged when the timetables for examinations or tests were released. Moreover, the following quotation from G1 (a male student) indicates that some mathematics lecturers are not welcoming for questions, and others are not available in their offices for consultations.

> There are lecturers who are interested in teaching but there are some who teach but do not want questions. Also, there are those who receive females with a polite language as opposed from how they receive the males. Others do not have time for students.

A few students reported existence of threats from mathematics lecturers. These particular students claimed that sometimes lecturers declare that their courses are difficult, there will be supplementary examinations, or students will carry the course. Although the students took these as threats, they acknowledged that the lecturers did this within the intention of compelling students to engage themselves in their studies. The female interviewees were further asked if they felt affected by the fact that most of the mathematics course lecturers were males. Among their responses was that they were not affected because mathematics teachers being males was something that began from pre-university school level so they were used to it. However, two female students reported of being affected and that was why females rarely visited lecturers in their offices for academic consultation. The following argument from interviewee J1 (female) connotes the view of many responses from these students: "Yes, there is a barrier for majority of mathematics lecturers being males. You just find it difficult to take questions to the lecturers in their offices. I don't know. May be is just nature."

For some of the females, to consult a lecturer immediately after the lecture hour or to attend his office was a matter that needs companionship from fellow students. When the males were asked the same question of the effect of the un-representation of the female students in mathematics, some replied that they did not see any effect of the females being few in mathematics. Some reported that the few females are the ones who more often consult the lecturers immediately after the lectures than the males. Although the females differ in their views, the message is that majority lecturers being males affects female students.

Gender Sensitivity

The findings from the interviews unveiled that mathematics lecturers were generally viewed to be gender sensitive. The female students claimed that, the lecturers often times discouraged gendered pattern of sitting arrangement, insisted on mixed gender group discussions, and planned group assignments with a gender concern. Furthermore, when the female students were asked about whether there is gender bias in classroom, all of them revealed that questions and answer sessions have been fair for both male and female students. The following quotation from a male interviewee A1 reveals a gender sensitive classroom and a positive academic relationship for both male and female students with their lecturers:

> Both female and male students consult lecturers at the end of lectures. Even in class both ask questions and volunteer to solve on the blackboard. This is because there are extra marks awarded for solving a problem on the blackboard during tutorial sessions. Thus, these marks compel students to volunteer solving questions.

The foregoing quotation unveils that some lecturers do use strategies for motivating both male and female students to participate in solving mathematics problems. Furthermore, when the students were asked whether there is any difference in the kind of questions and praises targeted to male and female students by lecturers, they argued to have never witnessed either difficult questions or easy questions targeted to one gender, let alone praises. The students were further asked if they ever witnessed favours through grades particularly to female students from mathematics lecturers. As indicated by the quotation from E1 (female) below, some females indicated an awareness of the existing claims that some female get bonus marks as favour from lecturers. These particular respondents admitted to have heard before joining university studies about the notion of females being favoured through grades. All of the interviewed students, however, reported to have never witnessed cases of favours through scores or grades in mathematics.

> Before joining the university, I heard that you may have a study companionship with someone who never concentrates on studies but keeps passing the course with high grades because she has relations with the course lecturer. But I have never seen such a scenario here.

These interviewed students could not see the possibility of favours through grades in mathematics courses because mathematics is very objective in marking compared to other subjects.

Academic Relationship among Students

The interviewed students were asked about their views on the academic relationship among themselves in higher education mathematics. All of the interviewees viewed that the academic relationship among mathematics students was good because there was academic support among the students, sharing of materials, and the main approach they used for studying mathematics was through group discussion. It was further reported that compared to pre-university school level mathematics, there are no competitions or jealousy among students for grades because the grades are posted in the Academic Registration Information System (ARIS) such that each student is able to view only his or her own grade.

When the female interviewees were asked about the academic relationship between male and female students in mathematics, they viewed it to be generally good. The female interviewees were further asked whether they felt affected by the fact that majority of the students taking mathematics courses were males. The responses were varied as some reported that it was a fact that had begun from previous levels of education. Some of them claimed that they had attended the National Service so they were used to be in the males' majority environments. It was also noted, as exemplified again by the quotation by E1 that follows, that some females regarded

male students in mathematics to be gender sensitive and therefore, females were not affected by being in the midst of the majority male students:

> I do not feel affected because in our class we have built a culture of helping each other. Sometimes you find you are the only female in a group discussion but there is awareness among the males that we need to help each other.

The interviews further revealed a challenge on interaction between males and females when beginning their studies in the first year. Females were reported to isolate and accompany among themselves during the beginning of first year studies. This leads to lack of awareness on what is transpiring among the majority males regarding studies. Some of these females, while reporting that there are other students who isolate themselves based on their former secondary schools, they acknowledged an impact of the late interaction between male and female students academically. The main preconception of some of the female students during this period is mistrust in male students. In their responses, as also illustrated in the selected quotations from A1 and K1 (both females) that follow, it was noted that whereas males may approach females with a need of academic help from them, some of the females may interpret this as an intention for seduction.

> Yaah! That thinking existed. You find a male coming to you asking about issues related to the courses; for example 'How about that assignment….' You ask oneself how comes he did not see other people but only me. That fear was very common at the beginning.

> Interaction between males and females was very difficult at the beginning. For example, as for me when a male approached me requesting for help, I used to ask myself how comes he did not understand? He would go away while he did not really have any other malicious intention apart from academics.

When the male students were also asked about their academic relationship with the female students, the responses were dependent on their degree programmes. For instance, interview with male students from Electronics degree programme indicated that the academic support learning environment is highly dependent on the male students. The male students unveiled that females do follow males for solving mathematics problems but rarely do the males request the same from female students. The following quotation from a male student in Electronics degree programme indicates females only solve mathematics problems when the group has set a plan for everyone to participate:

> Yes they do solve. Most of the time they solve according to their

> groups' plans. We usually plan who is to solve which question during group discussion. However, no female student is often depended upon by the group.

Although the foregoing quotation reveals female students as being depended on males in mathematics group discussion, it suggests also a positive cooperation among students. For the case of females in the Actuarial degree programmes, they were described by fellow males as more committed than the male counterparts. The following view was from a male student from this degree programme:

> Learning should not go by gender but in real life females are more determined. So, in our course you would be lucky if you are paired with females to do a group work. Ladies want everything done in an orderly way. Males just want the job done whereas females want perfection.

These male students' views in the foregoing quotation are similar to those of the male students from Bachelor of Science with Education, where females were overall described as much committed for academics, and they sometimes initiated group discussions for mathematics. This commitment of the females motivates academic cooperation between the male and female students in the subject.

Discussion

This study intended to find out the views of male and female students on the learning environment for undergraduate mathematics. The study found that regardless of gender, students had positive views on the learning environment for mathematics. In particular, gender bias or stereotypes of the females and their grades were found as less common. These findings oppose the claim raised by Modest (2012) that was conducted in non-mathematics contexts. Overall studies such as Kinyota (2021) and Rukondo and Kinyota (2021) reported that female students in STEM degree programmes are usually stereotyped, viewing the learning environment as favouring male students, and undermined as not capable for science subjects. The finding is however consistent with findings from studies conducted in the mathematics context particularly in developed countries. For instance, the study by Piatek-Jimenez (2015) indicates that female students taking mathematics at the undergraduate university level are usually viewed as intelligent and special. One explanation of this observation on how females are viewed is the nature of mathematics. It is reasonable that the common view of mathematics as being a difficult subject make students to have a view that female students in mathematics are the best of the females in the education system and also having a positive academic support including a belief in group discussion for learning the subject. The commonly perceived nature of this subject as difficult and its objectivity in

marking and grading build trust among the students that the female students who choose mathematics are good at it and their grades are genuine.

The findings of female students viewing the environment as stereotype free may be explained from motivation perspective. Studies such as Chouinard (2017) reveal that students' motivation in a subject influences their views of the learning environment. It has also been reported that the females who participate in mathematics at the undergraduate level comprise of the highly performing students and highly motivated and committed in the subject. Consequently, as the female students in this study had higher prior performance than even the males, it can be argued that, their motivation influenced the way they viewed the learning environment. Their experience of similar male-dominated environments for mathematics from secondary school level contributed to this positive view of the environment. Therefore, their motivation and experiences in a male-dominated learning environment might be masking awareness among them on the existence of gender stereotypes and biases. For instance, when the female students were asked whether they feel affected in any way by being in the male dominated environment in terms of mathematics students and lecturers, majority could not immediately cite any impact. This has an implication on research methodologies for studying gender related aspects such as stereotypes in undergraduate mathematics. Particularly, longitudinal and ethnographic studies should be encouraged.

Overall, students relationship particularly academic support for studying mathematics was reported for instance by Judith (2011) that it is an aspect compelled or facilitated by the nature of the subject, degree programme or living in the same hall of residence. The interview responses for this study noted this student-student academic relationship in the study of mathematics to go by degree programme, and also by former school mates. This has an effect as it limits interactions across degree programmes and might be impactful for the students in degree programmes with few mathematics students. While studies reveal building social and academic relationship among students in mathematics to be an overall challenging aspect during the beginning of first year studies, this study found interaction between male and female students as even more challenging at the beginning of first year studies. Moreover, at this time a male student approaching a female student for academic help is likely to be interpreted as intention for sexual relationship. Although this early challenge disappears later as studies become more sophisticated, it affects coursework performance of the students.

The study further found that although gender differences on the views of the learning environment were largely not statistically significant, male and female students who voluntarily majored in mathematics had a more positive view on the learning environment than those who participated in the subject as a result of the

subject being a compulsory learning. The mean difference for students who chose mathematics voluntarily differed significantly from that of the students who majored in mathematics as a compulsory course in terms of lecturers' characteristics and on their teaching styles. This indicates that the views on the learning environment for mathematics depend on specific learning contexts. According to theories of motivation, as De Clercq et al. (2013) argue, students' engagement with mathematics is dependent on the reasons for their choice of subject as well as the nature of the degree programmes of the students. Although gender difference in the learning environment for undergraduate mathematics was not evident, the minority status for females in mathematics is affecting their learning of the subject. This has an impact when and where the academic support from lecturers and male students is accessible for the female students.

Conclusion and Recommendations

This paper concludes that contrary to observations in non-mathematics contexts, male and female students hold similar views on many aspects of the learning environment for undergraduate mathematics. However, these views depended on the mode of students' participation in the subject. Both male and female students in the degree programmes where mathematic was a compulsory major for all students had negative views on the learning environment. This is in comparison with the students who majored in the subject on their own discretion. Mathematics students are more positive on their academic relationship including academic support among themselves. The nature of mathematics and the existing beliefs that cooperation is the best way of learning the subject reinforce positive academic relationship among students. Building this academic relationship between male and female students, however, is a matter that takes time during first year studies before students familiarise among themselves. Moreover, both male and female students are more positive on their academic relationship with mathematics lecturers. However, the students rarely consult lecturers for academic support outside lecture rooms, with female students being more fearful of visiting lecturers' offices. This paper further concludes that the learning environment for mathematics is generally gender sensitive from the perspective of the students. Lecturer's gender awareness is evident from the strategies lecturers use for encouraging cooperation and support among the students. Aspects of gender stereotypes and discrimination are also uncommon among the mathematics student.

Although the views were largely positive on many aspects of the learning environment, the students had a concern on the methods of teaching mathematics, nature of tests, marking and grading of the tests. This study, therefore, recommends more efforts from mathematics stakeholders for promoting gender balance in mathematics education, particularly for attracting and maintain persistence of female students in the subject. Initiatives focusing on reducing the delayed interaction between

male and female students in early first year studies are also recommended. This study further recommends that for undergraduate mathematics researching gender may need more long term field studies such as ethnographies and longitudinal research because the nature of the female students and their experiences of being in male-dominated environments might be masking potential findings useful for addressing gender issues in the subject.

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Philosophy and Knowledge in the Twenty-first Century: Redefining the Role of Universities and Schools

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Abstract

Philosophy and knowledge are indispensable in the process and practice of education. The essence of education is to train human mind. Education enables one to reason and think critically using mind. Knowledge is essential in the process of education. What kinds of things can be known? How can it be said that a learner knows something? These questions make knowledge one of the most fundamental aspects of philosophy and education. This paper reviews literature to examine what knowledge is and what it ought to be in the 21st century. It employs speculative approach, conceptual analysis and prescriptive research methods in philosophy to expound the creation of knowledge that will be relevant for the 21st century society. The paper has revealed that there are educational initiatives in place that are being taken in the 21st century to set an educational agenda that meets the local and global standards/needs. This implies that universities and schools have an increased role to play in the 21st century including training and recruiting learners, who can, at different levels, demonstrate creativity, critical thinking, communication and collaboration. The paper recommends that knowledge creation must extend to include the physical, mental, emotional and social domains of learning as required in the 21st century.

Keywords: *collaboration, communication, critical thinking, education, knowledge*

Introduction

Education attempts to develop a man intellectually to bring out the best in him. Different disciplines exist and have their own ways of conceptualizing and creating knowledge. Philosophy is one of the several fields of endeavours to achieve this purpose. Philosophy raises questions and provides answers to how human beings or learners acquire knowledge. Various theories and analyses of knowledge have been propounded to provide answers to issues related to knowledge acquisition. These theories and analyses expounded that knowledge must be certain and undoubted, since this is the foundation of belief system. What is contradictory, doubtful and uncertain cannot be regarded as knowledge. These according to Ludwig Wittgenstein

endeavoured to explain conditions in which learners could be said to have acquired knowledge. Plato and Aristotle made efforts to examine the nature of knowledge, as this has been a major concern of philosophy from the past. Both scholars agreed that knowledge is about what is true, and that this truth must be justified explicitly. This has set foundations for philosophy and the process of education till to date. On some accounts, 'knowing' would be a way of relating with things, events, and processes around and within the learner, which may have to do with information or understanding as stated by Ludwig Wittgenstein, Socrates and others. In essence, knowledge is very important and valuable in the process of education. How can the present education respond to challenges that have been created? Will Nigeria's educational system which has been traditionally preoccupied with the pressures and problems of the present rather than the anticipation of the future, live up to the expectations of the age?

Methodology

In order to provide answers to questions raised and proffer solutions to issues discussed in this paper, this study adopted the philosophical research methods of speculation, conceptual analysis and normative approach. In the field of philosophy, speculation involves general thinking about matters of concern that is, systematic, logical and creative thinking about the object or issue of study. Human mind is very important to his existence because it helps in thinking not just about himself but also about others and things around him. The conceptual analysis is used for clarification, rationality and consistency of ideas. It also employs the logical examination of facts in matters of discourse in order to arrive at logical conclusion (Oyeshile & Ugwuanyi, 1997). The normative approach establishes standard or benchmark for assessing as well as determining solutions to issues and/or problem(s) discussed.

Knowledge Claim in Education

Knowledge is very essential in education. However, the content of knowledge must be substantiated. When the vast variety of things to be known is considered, what a person learns makes such individual claim knowledge. Socrates and some notable scholars identified several distinctions in the forms or kinds of knowledge-claims and what can be said to be known or 'objects of knowledge'. It is usually thought that the most important of these distinctions is between 'knowing that' and 'know how'. The former is sometimes referred to as propositional or factual knowledge claim while the latter is technical knowledge. In essence, there are several ways by which we can know; this can be through experience and perception according to John Locke in his "Essay Concerning Human Understanding", as well as David Hume in his book "An Enquiry Concerning Human Understanding". This reveals that what is known could be inferred through experience and perception. This leads to considering the necessary conditions for knowledge.

In philosophy, there is no widely accepted definition of knowledge. However, philosophers have been attempting to construct one for ages. While agreement with the definition may not be universal, it can serve as a starting point to define knowledge.

In philosophy, the definition of knowledge will involve satisfying three conditions; (a) the 'knower' or person has a belief in the statement (b) the statement is in fact true (c) the person is justified in believing the statement to be true. Consider a factual statement like 'the student will come first in the examination'. Drawing on this statement, three conditions to be satisfied are identified as 'belief', 'truth' and; 'justification', which provide the tripartite basis for the definition of knowledge. Beliefs are not like rocks you come across while strolling along the way rather, they are what people have. They are in the head and are generally viewed as just the way you hold the world or some aspects of the world to be. If it is believed a student can never come second in the examination, one just accepts it as truth that the student will come first in the examination. It should be noted that accepting that something is true implies that what you accept could be wrong. It implies that what you think about the world may not match with the way the world really is. This suggests that there is a difference between belief and truth (Pardi, 2011). There are philosophers notably, postmodernists and existentialists, who think such a distinction cannot be made because knowledge is really a personal encounter with reality (Akinpelu, 1981). From this claim, pragmatic philosophers are of the opinion that belief is in our heads, and truth is about the way the world is. In essence, what is believed can be judged by examining behaviour in the face of present reality (Dewey, 1938).

Truth exists, not subjectively, but objectively as well. Truth is not just in the head, but it is out there for all to see. The statement that 'the student came first in the examination' is true when in fact the student came first in the examination. When an individual believes a statement, it holds that the statement or proposition is true. It could be false and; that is why the belief may not 'match with the way the world really is. The truth condition in justify-true-belief (JTB) assumed that if one knows P, then P is true in the sense that P states how things are.

A pertinent question at this point is, if the seed of knowledge is belief, what turns belief into knowledge? Some philosophers believe that justification is required here; this is because justification makes the belief in something be true. However, some philosophers accepted that a belief or knowledge is not justified if it is based on wishful thinking (Pardi, 2011) – for example, a product of fear or guilt (you are terrified of death and so form the belief in an after-life). Since beliefs come in all shapes and sizes, it is hard to find a single theory of justification that can

account for everything we would want to claim to know (Audi, 1988). This makes justification an important factor in the theory of knowledge.

Knowledge in the 21st Century

Knowledge is one of the perennial concepts like the nature of matter in the hard sciences that philosophy has been refining since the pre-Socratic era. In John Locke's "Essay Concerning Human Understanding", Plato and other idealists seem to adopt a representative theory of perception. According to John Locke, the only things we perceive, at least, immediately, are ideas. Many of Locke's readers have wondered how we can know the world beyond our ideas if we only ever perceive such ideas. Coming up with a definition of knowledge from this idealist approach will, therefore, prove difficult. One may ask, how then does this idealist perspective speak to the question this paper is addressing?

However, prominent philosophers have wrestled with the topic especially, the 20th century philosophers, who have provided a different view on the problem of knowledge and what type of knowledge is worth investing in. Dewey, Pierce, and other pragmatists, argued that knowledge is the product of inquiry, a problem-solving process by means of which we move from doubt to belief (Foster, 2019). However, making inquiry to discover knowledge may not proceed effectively without experimentation that is, the need to manipulate reality in certain ways. Since knowledge grows through attempts to manipulate/push the world around and see what happens as a result, it follows that knowers as such must be agents that can be manipulated, pushed or moved. This insight is central to the experimental theory of knowledge.

However, as successful and widely acceptable, the idea pushed forward by the pragmatists, the 20th century way of knowing can be critiqued for emphasising compliance and conformity over creativity and diversity, two skills that were necessary to perform well in a professional or corporate environment, and to hold down a good job in the present age. Compliance and conformity may be seen as relic, but they can still be considered as key values in many schools, which have affected and informed the major educational policy, pedagogy and curriculum choice (Shirke, 2021). Unfortunately, many students are taught using the old or conventional methods and standardised curriculum, leading to rote learning where some learners, due to lack of motivation, are disengaged from the learning process (Partridge, 2017). Based on the short fall of traditional teaching approaches, the following questions are raised: What is the relevance of going to school while learners can learn the same stuff faster by watching You tube video or playing a computer games?. Why should one memorise facts for a test when they have all the information in the palms of their hands? Studies have shown that old or contemporary methods of teaching have little impact on the present-day learners who are vast users of modern technology to acquire knowledge, making it mandatory for

schools to adjust to new pedagogy to survive (Herold, 2016). Digital technologies change people's ways of life, communication, thinking, feelings, and channels of influence on other people, social skills, and social behaviour. As Myamesheva (2015) states, the high-tech environment – computers, smartphones, video games, and Internet search engines – reshape the human brain.

A Paradigm Shift

At the eve of the 21st century, UNESCO reported the type of education that will be needed to navigate the new era. In the preface to the article 'Education for the 21st Century', Singh (1991) is of the opinion that the future scenarios of the political, social, cultural and economic sectors will depend on the contributions of the students at our schools today. More than ever before, education must be visionary and future-oriented in the face of stunning scientific and technological innovations and changes, unprecedented socio-economic challenges and opportunities, surprising socio-political reforms, and amazing cultural reawakening (Singh, 1991). Thus, a shift to 21st century education will mean giving students the skills they need to succeed in this new knowledge economy and helping them grow the confidence to practise those skills.

In rethinking education to cope with rapid changes at the threshold of the 21st century, innovation, technology, and creative research become an indispensable tool in education. Failure to innovate by and large means repeating yesterday's educational challenges tomorrow, which will only further jeopardise the reputation of education as a contributor to development efforts. The availability of information in the 21st century makes it imperative to utilise the information in effective ways. Certain skills have been identified by the Partnership for 21st Century Learning (Coalition P21) and Rusdin (2018) for the present century. These include Creativity, Critical thinking, Communication and Collaboration. They are expected to be mutually complementary across all curricular and pedagogy mapping.

According to Herold (2016), creativity in curriculum and pedagogy mapping involves new ways of thinking about information at hand, considering issues from other dimensions in order to discover new connections to arrive at innovations that can result in curriculum construction and more effective classroom interactions between the teacher and learners. Critical thinking will encourage critique and analyses of information in logical as well as objective ways. Thus, it entails disconnecting oneself from or disregarding all forms of subject views on information or issues under consideration. Communication, on the other hand, will have to do with the ability to pass information accurately and appropriately to the right audience, while collaboration is about cooperating with one another, for instance, in group(s), for the purpose of achieving better outcomes. Other skills like entrepreneurship,

inquiry, as well as problem solving are also identified, with Emotional Intelligence (EI) as one of the crucial factors to successful work and relationships (Herold, 2016; Mayer et al, 1997). Therefore, education is expected to equip learners with skills needed for transformation of their societies rather than knowledge that has outlived their importance and relevance.

These domains cover a wide and multi-dimensional spectrum to approaching the knowledge needs of the 21st century education. Unlike the science paradigm which totally rejected the ancient spiritualistic-holistic paradigm, the newly emerging world view will not reject science. Science and mind will be integrated in the middle path, elevating mankind to a new level of wisdom while integration will be the new paradigm (David, 2003).

Competencies, Curriculum and Pedagogy in the 21st Century

Creativity, Critical thinking, Communication and Collaboration (4Cs) can be integrated into the curriculum, teacher's practice and pedagogy of the educational process. The need for the fourth industrial revolution and defining a role for research universities for a paradigm shift is a necessitated call for critique, reforming and restructuring the entire educational system particularly, in the aspects of the curriculum, communication, creativity and collaboration. This is needful since education plays its roles as knowledge transmitter and builder of new knowledge. The world is changing, and in order to prepare learners for this new world, there is a need to change the way they are being educated. In the 21st century, educators must create a curriculum that will help students connect with the world, understand and take actions to resolve the issues that the world faces.

The curriculum must be designed to incorporate multiple skills to improve intelligence levels using technology and multi-media. Contrary to the world where knowledge was primarily exchanged through talk and chalk as well as paper and pencil mode, the new technologies pose great challenges to education and its process at all levels. For example, the influence of computer globally poses questions on the directions of influence between theory and calculation that has ramifications for the science curriculum in schools and research training. The changes raise questions about the locality of knowledge and the various agents of knowledge (human and non-human). In relation to the study of history, the availability of new kinds of research capacities, new kinds of on-line archives, ability to search and work with visual texts as well as records are also potentially transformational in terms of what students might need to learn or be able to do. The knowledge needed to navigate this age cannot just (and only) be book based but rather it should include social reality and learners' competence through manipulation of learning materials and contents.

In the past, teacher-centred method of teaching like rote learning where contents are repeated, learners made to conform and memorise large quantity of information for the purpose of expanding their knowledge in accordance with the idealists' curriculum which characterised the process of education. This made the class a less interesting place for learning. At the end of the term, summative evaluation was done to assess the level of understanding by students. Curriculum designers have, however, realised the need for curriculum that will discard the old method of teaching and develop initiatives as well as creativity in learners (Kolawole, 2015). The knowledge economy requires that learners develop some basic competences, and as emphasised by Obanya (2016), the emergence of the knowledge economy has created the following specific challenges; a) education no longer prepares one for specific jobs in the conventional sense, b) the principal goal of education is no longer the certificate or diploma but the inculcation of learning-to-learn skills. Thus, memorisation (knowing that things happened) is no longer as important as analysts (apprehending how and why things happen), c) education now combines the inculcation of 'knowing yourself' or 'developing the best in you' (intra-personal skills) with 'knowing and getting along with others' skills (inter-personal skills), d) in addition to developing mental (or cognitive) intelligence or brain power, the knowledge economy has brought to the fore a complementary type of human power, emotional intelligence (the ability to manage emotions), e) creativity (lack of rigidity, a willingness to explore new paths and new ways) is now a major hallmark of the educated person, f) people who have benefitted from education are now expected to have acquired a combination of 'hard' and 'soft' skills (Obanya, 2016). Therefore, for education to really become relevant to nations and their changing needs there must be a synergy between curriculum and the world of work.

The 21st century learners have access to various sources of acquiring knowledge, with added advantage in the use and application of modern technology. Teachers should, therefore, assume the role of a guide or mentor and be equipped with skills in the required technology to live up to expectation (Gutierrez, Sanchez, Castaneda & Prendes, 2017) as nation builders. Teachers, going by the acronym facilitators, go together with the quantum of work and job descriptions of teachers around the world. In modern schools, the use of dynamic and exciting teaching methodologies is employed by teachers; learners are drawn into the world of self-actualisation and realisation of their aims, aspirations, dreams, goals and hopes.

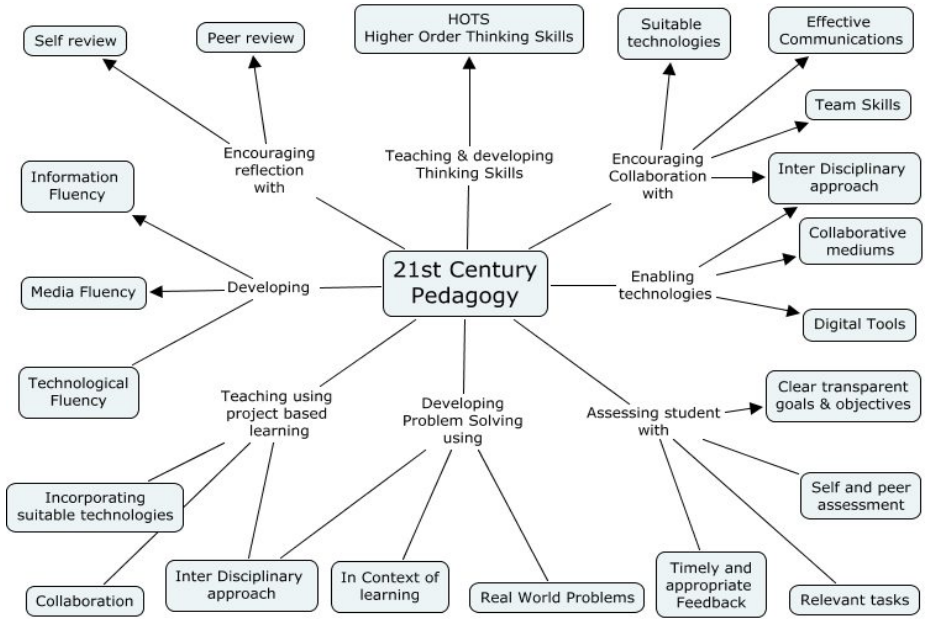
Collaboration, role-play, data sharing and, surfing the internet for research and reference, have become the norm. Experimental learning and a sense of connectivity through the internet has taken the world of education by storm. Therefore, the 21st century teacher is expected to go beyond the classroom and play the roles of a leader, a mentor, a role model, a counsellor, a coach, a therapist, a seeker, a knowledge base, a disciplinarian, a data collector, a curriculum planner, as event

manager as well as an entertainer among many more avatars (Gutierrez et al, 2017). It has become imperative that the new generation of teachers should endeavour to build learners that will be independent and autonomous through motivation of learners. This also means that teachers need to be forward-thinking, curious and flexible. Teachers must be learners who learn new ways of teaching, and they are learning alongside their students.

There is, therefore, no doubt that digital integration is fundamental to a thorough 21st century education. It should, however, be noted that it is not sufficient to simply add technology to existing teaching methods. Technology needs to be applied strategically to the benefit of the process of education. It has been ascertained that learners are increasingly advanced users of technology (Herold, 2016). Many learners have surpassed their teachers in the use of technology thus, embarrassed by the level of technology demonstrated/displayed. Therefore, it is imperative that modern learner must sift through a lot of information to be able to navigate the world in the 21st century. This means that higher-level thinking skills like analysis and evaluation are necessary to be innovative and establish the credibility of information (Herold, 2016).

The diagram below shows the various pedagogical components by the P21. Components include Higher-Order Thinking Skills, Peer Collaboration, and Media Fluency.

Figure 1: The P21 pedagogical components of Higher-Order Thinking Skills, Peer Collaboration, and Media Fluency.



Source: 21st century pedagogy. Churches, 2011.

Furthermore, the UNESCO recommended the following teaching strategies for the 21st century; experimental learning, storytelling, values education, enquiry learning, appropriate assessment, future problem solving, outside classroom learning, and community problem solving (UNESCO, 2010). The application of innovative teaching methods by teachers is imperative for education today. The greater the strategies and methods of teaching by the teachers, the more interesting and diverse the classes will be. This will motivate students' cognitive activity.

Conclusion

In conclusion, educational reforms are presently being made in the 21st century world to set an educational system that meets a global standard. Based on the above analysis, it becomes so clear that education has an increased role to play in the 21st century to mould learners who can at the different levels demonstrate multiple competencies of the 21st century. The most valid knowledge in the 21st century world should therefore be the development of these competencies to incorporate cognitive, social, and intrapersonal domains of learning. This suggests that a world-class education must consist of not solely mastery of core subjects such as Literacy, Numeracy, Scientific literacy, ICT literacy, financial literacy, Cultural and Civic Literacy, but also of training in higher order thinking skills. Such high level competencies are drives to self-reliance and economic development and security in a world where knowledge matters more than ever for the success of societies.

Recommendations

Based on the analysis above, the following are recommended for action and future research;

1. Research universities need to encourage collaboration among disciplines to get the best of research works. This can be done when lecturers and researchers in Educational Technology collaborate with their counterparts from other department(s) to design methods of disseminating knowledge through modern technology.
2. Universities should promote researches that are relevant to the nation. The idea of imitation and transfer of knowledge from other lands that do not have relevance should be discarded.
3. Researchers, educational practitioners and employers in the world of work must team up to see what works such that resources are appropriately devolved to research works. The curriculum adopted should also be in synergy with the world of work. This will enable graduates of schools to adapt to changing requirements of the labour market through transformational changes in both technological and technical capacities. This will make the products of schools to be employable and relevant in the world of works.
4. Since a large percentage of the 21st century teachers are digital immigrants, there is need to train and empower them on the use of the latest technology that will help to improve their research skills and pedagogical practices.

5. Finally, there is a call for holistic education. That is, emphasis of knowledge should be on the physical, mental, emotional and social skills as emphasised in the 21st century domain of learning. This would ensure an all-round development of each learner to meet the needs of the present generation.

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Reflecting on Six Decades of Graduate Educational Leaders' Preparation in Tanzania: Examining Ideologies, Policies, and Practices for Future Educational Policy Direction

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Abstract

This article examines ideologies, policies, and university practices of educational leaders' preparation in higher learning institutions in Tanzania and proposes an alternative model for educational leaders' preparation. It takes stock of the trajectory of graduate educational leaders' preparation development in Tanzania by situating relevant initiatives in the educational macro-policies and transformations spanning a period of about six decades for possible future educational policy direction. The paper adopted Narrative Literature Review (NLR) as its methodology. NLR method was deemed relevant for generating new knowledge by synthesising present knowledge on a particular topic in a specific setting. The paper proposes a model for the robust preparation of educational leaders in higher learning institutions. The model comprises the following variables: context, input, process, and product/output, which are considered as critical for the preparation of educational leaders.

Keywords: *educational leaders' preparation, higher learning institutions, education policies*

Introduction

The importance of educational leaders' preparation (ELP) need not be overstated. This is because the success of educational institutions depends partly on strong educational leadership which also depends on effective preparation of education leaders. Of recent, ELP in higher learning institutions (HLIs) has become an area of interest in the contemporary educational leadership discourse. Scholars have argued that effective ELP in HLIs depends on, among other things, clear state policies translated into plans and programmes (Pont et al., 2018; Wallace Foundation, 2016). Such policies are vital for determining directions for the design, development, delivery, curricula orientations, and pedagogic practices in the educational leaders' preparation programmes (ELPPs).

In the context of this article, ELP means the process of grooming potential candidates in terms of knowledge, skills, and attitudes required for sound educational leadership capacity. On the other hand, ELPPs involve educational management and administration courses integrated into an undergraduate education degree programme, or Bachelor of Education in educational management and administration streams specifically created by the university to prepare future educational leaders.

Although many studies on ELP in HLIs have been done, most of them have been limited to high-income countries (Johnson & James, 2019). A few extant studies that have focused on African countries and Tanzania, in particular, have mainly addressed comparative analysis of tertiary educational leadership preparation (Ndibalema, 2000), experiences influencing professional development for educational leaders (Moorosi & Bush, 2020), or efficiency models on supervisory roles of educational leaders (Abdalla et al., 2020). However, the contribution of ideology, education policies, and university practices in enhancing graduate ELP in Africa, and Tanzania in particular, has been less examined. This apparent research gap justifies the necessity for this study.

Moreover, available studies and literature on educational leadership conducted in Tanzania, from the 2000s through 2020, confirm that graduate educational leaders attest to a weak leadership capacity which, in part, is ascribable to their preparation (Abdalla et al., 2020; Ndibalema, 2000). The specific objective of this study was to examine ideologies, policies, and university practices of ELP in HLIs in Tanzania to propose an alternative model for ELP. The outcome of the review was to offer important insights into possible future educational policy direction in Tanzania. The article contributes to the higher education literature on the contribution of ideology, policy, and university practices in enhancing graduate ELP which has implications to the leadership capacity of graduate educational leaders. However, it is emphasised that the discourse on ELP in HLIs is debatable, and can be unravelled by situating it within its historical and social struggles.

After this brief introduction, the rest of the paper is organised as follows: a presentation of a theoretical framework underpinning the study; a description of research methods and procedures used in the study; a description of the contemporary global perspectives on ELP in HLIs; the evolution of ELP in HLIs globally; the African contexts for ELP in HLIs; the chronicle of ELP history in Tanzania, before and after independence, along with, an examination of ideologies, policies, and university practices of ELP as a basis for proposing an alternative model for ELP in HLIs in Tanzania; presentation of an alternative model for ELP in Tanzania's HLIs; limitations of the study, and conclusions and recommendations. However, the discussion is demarked to undergraduate ELPPs because it is where a good

number of educational leaders for basic education in Tanzania get their preparation. Moreover, the basic education level overshadows other levels of education in terms of access, government budgetary share, and students' social impact across the education sector in Tanzania (MoEST, 2016).

Theoretical framework

This study was guided by the Professional Socialisation Theory (PST) proposed by Simpson (1967). The central argument of this theory is that "professional socialisation happens in three phases, namely, anticipatory socialisation, formal socialisation, and organisational socialisation" (p. 15). This study focused on the second stage because of its relevance to the study. At this stage, potential educational leaders are socialised through institutional formal preparation and field training. These help them to acquire the specialised knowledge and skills of an intended occupation (educational leadership), necessary for professional development.

According to the PST, contextual factors such as national policies on education, benchmarks for preparation programmes, global best practices, current research, globalisation, and labour market demands may impact negatively or positively the formal socialisation with regard to programmes' content, curriculum design, pedagogy, and modes delivery employed for ELP (Hallinger, 2015). Therefore, analysing ELP in HLIs using the lens of PST as a theoretical framework is important. Variables in terms of context, input, process, and product are pertinent components for shaping the improvement of ELP ideology, policies, and university practices. As an outcome, the quality of preparation, knowledge, skills, experience, and capabilities developed through ELPPs, forms a unique sort of experiences important for sound leadership capacity among future educational leaders.

Research methodology

This article used a narrative literature review to inform its methodology, with a perspective of creating new knowledge through synthesising existent knowledge. A narrative review approach was considered an effective methodology for advancing knowledge because it has the potential of producing novel ideas for a specific research topic in a particular context. It enabled the researchers to discern theoretically relevant context, input, and process with implications for successful ELP in HLIs, and combine these via meta-narratives as an optional plan to study effect size (Snyder, 2019).

Secondary data were considered relevant to analyse and understand the problem of ELP in Tanzania's HLIs from a historical perspective. Truth value that included reflection on researchers' personal views to guarantee neutrality and consistency was ensured. The study employed an applicability strategy that enabled researchers

to reflect on a wider discourse of ELP and the applicability of the results to the Tanzanian context. This involved offering details of ELP contexts and the appraisal of literature conclusions and their context transferability.

The selection of relevant literature for review was informed by the following principles: searching for related literature using keywords like educational leaders' preparation, education policies, higher learning institutions, and evolution of educational leaders' preparation; sourcing information from trusted databases such as Google Scholar, EBSCO, SCOPUS, University of Dar es Salaam Library, BRILL, and Web of Science; delimiting the scope of the literature, this involved: (1) regional representation; in this dimension, literature was drawn from Europe, America, Asia, Australia, and Africa. (2) Language criterion; only literature written in English and Kiswahili were consulted, and (3) Quality aspect; the sampled literature involved peer-reviewed journal papers, books published by reputable publishers, and national educational policies published by governments (Bogdan & Biklen, 2003).

Contemporary global perspectives on educational leaders' preparation in HLIs

Globally, ELP in HLIs has become a topical issue in contemporary debates. Equally, in the global policy discourses, it is surfacing as an important educational policy issue aiming at strengthening the capacity of educational leaders (Wallace Foundation, 2016). The reason behind this predilection is the recognition that the development of educational leaders' knowledge, skills and attitudes is a fundamental component of ELPPs offered in HLIs. HLIs have the potential to grounding strong academic and professional foundations for graduates to develop knowledge of educational leadership theories, philosophies, practice, and propensity essential for sound educational leadership (Pont et al., 2018).

However, for more than a decade now, studies on ELP worldwide, have demonstrated that to attain excellence in ELP in HLIs, national reform efforts on education policies have to ensure that HLIs generate a cadre of graduate educational leaders who are sufficiently groomed to work in the challenging and dynamic educational contexts of the 21st century (Anderson & Reynolds, 2015; Siddiqi et al., 2018; Wallace Foundation, 2016). For example, Siddiqi et al. argue that:

> There is a growing need for education policy reform efforts to focus on ensuring improvement in university-based educational leadership preparation to ensure that education and training institutions have a steady supply of skilled and competent leaders who are adequately prepared for the demands of 21st-century educational institutions (p. 2).

Similarly, Anderson and Reynolds note that governments and states in high-income countries are presently revisiting their policies on education to see that HLIs produce graduate educational leaders who are well prepared to navigate those challenges. However, generally, the Wallace Foundation (2016) states that: "Governments, through their education policies, have the authority to play a role in improving ELP, but many are not using this power as effectively as they could" (p. 14). Thus, it is imperative to examine education policies in the context of Tanzania to improve the processes of ELP in HLIs.

Evolution of educational leaders' preparation globally

Globally, the evolution of ELP in HLIs can be ascertained through four chronological epochs, namely: the ideology epoch (pre-1900); the prescriptive epoch (1900-1945); the behavioural science epoch (1946-1985), and the current dialectical epoch (1985 – the present) (Normore & Lahera, 2018). Normore and Lahera note that during the ideology epoch there was no formal preparation of educational leaders globally. ELP was not regarded as an essential component for the successful administration of educational institutions because educational organisations were seen as simple institutions whose running was not considered a job that required specialised knowledge, skills and competencies. As such, teacher education and training that was offered to teacher trainees were regarded adequate for executing educational leadership functions. In this context, a subject teacher appointed to work in an educational institution could learn leadership and administration on the job through trial and error.

Notable development occurred in the prescriptive epoch because educational administration became an important aspect of university studies in education degree programmes. The behavioural science epoch was featured by debates concerning what knowledge base ought to be offered in the ELPPs. Calls were made for HLIs to design pertinent ELPPs to safeguard education systems against ill-prepared education leaders. In response, several educational leadership organisations were instituted to spearhead the improvement process. For example, in the United States, the National Conference of Professors of Educational Administration (NCPED), Cooperative Project in Educational Administration (CPEA), Committee for the Advancement of School Administrators (CASA), and the University Council for Educational Administration (UCEA) were introduced (Normore & Lahera, 2018).

In Europe, non-governmental organisations assembled researchers and educational leaders through the British Educational Leadership, Management, and Administration Society (BELMAS), the European Forum on Educational Administration (EFEA), and the Cyprus Educational Administration Society (CEAS). These organisations emphasised ELP in European HLIs (Thody et al., 2017). However, Thody et al.

further note that:

> The most centralised government systems in Europe adopted less preparation of educational leaders and more government involvement in the selection of teachers as educational leaders. The extent of preparation was perceived to matter less in successful educational leadership than the selection of the right people such that educational leaders were concerned about their lack of formal preparation (p. 1).

This implies that in Europe, emphasis was accorded to the appointment of educational leaders over their formal preparation. Similarly, in Asia, educational leaders began as classroom teachers and then they were required to work in two administrative positions before advancing to headship roles (NCEE, 2021). In Australia, Dinham et al. (2011) note that until the 1960s, there was an absence of mandatory ELP, even though aspirant educational leaders studied educational administration courses at the University of New England through distance education.

The current dialectical epoch which began in 1985 to the present, is characterised by several issues: first, critiques of the efficacy of ELPPs offered in HLIs; second, the concern about the leadership capacity of graduates of such programmes; third, debates about how the programmes ought to be redesigned and executed to produce competent educational leaders, and fourth, concerns about the role of national education policies in regulating ELPPs (Anderson & Reynolds, 2015). For example, regarding the fourth concern, Anderson and Reynolds argue that: "Prioritising educational leaders' preparation requires that states develop knowledge of effective leadership preparation, put in place high leverage policies that support such preparation, and support the evaluation and continuous improvement of preparation programmes" (p. 7).

The African contexts for educational leaders' preparation in HLIs

In Africa, graduate ELP surfaced when HLIs emerged on the continent. These included the University of Ghana and the University of Ibadan both in 1948, Makerere University in 1949, the Addis Ababa University in 1950, and the University of Zimbabwe in 1952. In East Africa, ELP in HLIs started at Makerere University College of East Africa in Uganda, when Makerere College attained University College status in 1949 under the tutelage of the University College of London. Makerere University College prepared graduate educational leaders for Central, East, and Southern African countries (Teferra, 2013).

Many African countries made concerted efforts to Africanise their universities in the 1960s, following their political independence. However, graduate ELP in

African HLIs, and Tanzania, in particular, continued to preserve the colonial model. Like many colonial education policies in Africa, a good number of governments in Africa have been espousing education policies accentuating the appointment of educational leaders based on teaching qualification and teaching experience rather than policies on their preparation (World Bank, 2019). For example, education policy provisions in South Africa are tardily embracing the notion that educational leadership is a specialised career that calls for specific preparation for sound leadership capacity. As a result, educational leaders are selected based on teaching qualifications and experience (Bush & Clover, 2016). Similarly, in Nigeria, the education policy of 2013 states that:

> Efforts towards improving the quality of education at all levels shall include the appointment and retention of academically and professionally qualified teachers as Heads of education institutions, and putting in place a coherent national framework for teacher preparation and professional teaching standards (NERDC, 2013, p. 29).

This implies that ELP has not been given attention in the Nigerian education policy and that a teaching qualification is regarded as an important and adequate requirement for posts in educational leadership. Yet, there is evidence that a teaching qualification is inadequate for successful educational leadership because the "skill set of the strong teacher and the strong educational leader is not necessarily the same" (Berry, 2018, p. 2). In other words, leadership and teaching are discrete knowledge sets.

Educational leaders' preparation in Tanzania

The history of the preparation of graduate educational leaders in Tanzania can be shadowed before independence, and in the course of ongoing educational policy reforms that transpired after independence to date.

Educational leaders' preparation during the colonial period (pre-1961)

The British regime (1919 to 1961) is considered as it just preceded sovereign Tanzania. In terms of policy, the British policy on education did not underscore formal ELP because the functions of educational leaders were regarded as "constituting primarily superintending school routine activities that were mainly non-professional and secretarial in nature". Thus, a qualification in teacher education was viewed as adequate for educational leadership posts (Tabetah, 1982, p. 32). However, to what extent was this thinking grounded? As mentioned elsewhere in this paper, graduate ELP in Tanganyika began at Makerere University College of East Africa in Uganda in 1949 because, before independence, Tanganyika did not have a higher learning institution. Explaining the way educational leaders were prepared

at Makerere, Mmari (1982) states that:

> At Makerere, prospective educational leaders pursued either Bachelor of Arts or Bachelor of Science degree programme for two years and then spent an extra year learning pedagogy that led to a Diploma in Education award in addition to a Bachelor of Arts or Bachelor of Science degree. In that Diploma in education course, future educational leaders studied two courses related to educational administration namely, School Organisation and Educational Administration, and went for two-month teaching practice (pp. 128-129).

The excerpt above shows that through this programme design, graduate educational leaders were for the most part prepared as classroom teachers.

Educational leaders' preparation after independence (1961-to date)

After independence, the ideology and practices of ELP in many Sub-Saharan African countries, of which Tanzania is among, were a reflection with little or no modification of the ideology, education policies, and practices of their former colonial hegemony. If there was to be any significant difference, this could have been boldly articulated in their national education policies expected to shape, reshape and guide practices in ELP in HLIs (UNESCO, 2016). For purpose of clarity, the trajectory of ELP after independence is divided into six periods that reflect six decades of graduate educational leaders' preparation development in Tanzania from 1961 to 2020 as follows:

From 1961 to 1970

In the 1960s, Tanzania's government introduced and passed various education policies, acts, and plans including the Education Ordinance of 1961; the Education Act of 1962 that annulled the Education Ordinance of 1927; the 1961-1963 First Three-Year Plan; the 1964-1969 First Five-Year Plan, and the 1969-1974 Second Five-Year Plan that was legalised by the Education for Self-Reliance Policy of 1967 and the Education Act of 1969 (Galabawa, 1990). Despite these commendable efforts, an analysis of these policies indicates that they did not address issues on ELP. This implies that ELP was not attended to, in the early national stages of education development and education policy reform efforts.

A critical shortage of skilled graduate manpower in the 1960s compelled the government to establish an affiliate College of the University of East Africa in Dar es Salaam. This college became an independent National University in 1970, known as the University of Dar es Salaam (UDSM). Later in 1964, the Department of Education (DoE) was established in the then Faculty of Arts and Social Sciences

(FASS) of the University College, Dar es Salaam (UCD). The Department was mandated to train graduate teachers for secondary and teacher training colleges; teachers who would also become leaders in various educational and training institutions in Tanzania (Mmari, 1982). The introduction of the DoE at the UCD marked the beginning of graduate ELP in Tanzania. However, Mmari observes that:

> The Department of Education adopted the replica for preparation of educational leaders used at the Makerere University College of East Africa, a model that was guided by an ideology that a person prepared as a classroom teacher, having studied one or a few courses in educational management and administration, would, as well, satisfy for educational leadership positions in the nation's education sector (p. 128).

Yet, in practice, this ideological design seemed inadequate for the successful leadership of educational institutions because evidence from available literature indicates that graduate teachers who were appointed directly to administrative posts as education officers, heads of school, and college principals immediately after graduation, "felt that they were not prepared for the job" (Mmari, 1982, p. 129).

Based on this colonial design, Mmari further notes that graduate ELP in the DoE was accomplished through one module titled: 'School organisation and educational administration' under a course called Education 4 (Contemporary problems of education in East Africa). This course was embedded in the education degree programmes that had teaching practice sessions in which candidates were deprived of practicum directly related to the core functions of an educational leader. This practice has dominated ELP in HLIs in Tanzania for more than 50 years since independence. Incremental changes were evident in the course titles, and the number of educational management and administration courses, many of which were designed as "electives" for the majority of education students. Regarding this colonial dogma, Nyerere (1967) debated that:

> The independent state of Tanzania inherited a system of education that was in many aspects both inadequate and inappropriate for the new state; it was, however, its inadequacy which was most immediately obvious after independence, the preparation of educational leaders in higher learning institutions being no exception (p. 19).

In this regard, one may argue that the education degree programmes, in which educational administration courses were embedded, were mainly designed to train classroom teachers, but not proficient future educational leaders.

From 1970 to 1980

In the 1970s, the Education for Self Reliance Policy of 1967, the 1969-1974 Second Five-Year Plan, the Decentralisation Policy of 1972, the Musoma Resolution Policy of 1974, and the Education Act No. 25 of 1978 which annulled the Education Act of 1969 proceeded to direct the planning of higher education (MoEC, 1995). Yet, regarding ELP, these policies remained quiet.

Another important initiative was the establishment of the Institute of Management Training for Educational Personnel (MANTEP) in 1978 to conduct regular and systematic training for different categories of educational administrators in the education sector. However, the institute was limited to providing in-service training to educational leaders to strengthen their leadership capacity (MoEVT, 2009).

In November 1980, the Makweta Commission was formed and tasked to review the system of education and provide recommendations toward the year 2000. The report recognised the need for providing a special preparation programme to teachers who would bear special occupations in the education sector, such as educational leadership. However, it culminated in recommending that "educational leaders and supervisors should be given leadership and management training according to the positions they are appointed to hold" (NMoE, 1982, p. 230). This implies that the Presidential Commission did not call the attention of the government to ELP as it only underscored their in-service training.

From 1980 to 1990

Moreover, the Western neoliberal thinking and the Structural Adjustment Programmes of the 1980s influenced the government to formulate the National Task Force (NTF) on Education in 1990. The NTF was tasked to re-examine the education system's problems acquired from the past and propose an education system appropriate for the 21st century (MoEC, 1995). The Task Force gave two pertinent recommendations:

> First, to formulate a new Education and Training Policy to repeal the Education for Self Reliance Policy of 1967, and second, to strengthen the preparation capacity of the then, Department of Educational Planning and Administration of the University of Dar es Salaam to enable the Department to initiate fully-fledged undergraduate degree programmes for educational leaders preparation (MoEC, 1993, p. 122).

Possibly, if these recommendations had been successfully implemented, they would have had important implications for ELP in HLIs.

From 1990 to 2000

In 1995, the government responded to the proposition of the NTF by issuing the Education and Training Policy of 1995 which was enforced by the 1995 Education (Amendment) Act No. 10 (MoEC, 1995). Regarding educational leaders, this policy declared that:

> All educational managers at national, regional, district and post-primary formal education and training institutions shall have a university degree, professional training in education and management from a recognised institution, as well as appropriate experience (p. 29).

Despite its commendable effort to discern the contribution of a university degree in heightening the capacity of educational leaders in the country, the policy emphasised more on the programme's outcome (a university degree). It failed to articulate important matters regarding ELP at the university level such as kinds of preparation contexts, inputs, and processes worth for effective and successful ELP in HLIs. Moreover, the policy also failed to ascertain the institution responsible for the provision of professional training in educational management, and whether such training was mandatory. Arguably, the policy lacked national aspirations on how educational leaders ought to be prepared in HLIs.

The Higher Education Accreditation Council (HEAC) was formulated in 1995 and was legalised by the 1995 Education (Amendment) Act No. 10 to govern the expansion of higher education (MoEC, 1995). Moreover, in 1999, the National Higher Education Policy was introduced to establish a comprehensive national policy context for the provision of higher education (MoSTHE, 1999). However, even though the Policy questioned the relevance and the inadequate skills base of various programmes offered in HLIs due to the absence of coordination, this policy and the HEAC failed to offer critical directions for ELP in HLIs.

Despite the call by the NTF for universities to introduce fully-fledged undergraduate degree programmes for ELP, a good number of universities established in the 2000s, adopted and duplicated programmes for ELP from the older UDSM (Ishumi, 2009). Mainly, this resulted in ELP in many universities being accomplished through one or a few educational management and administration courses embedded in the teacher education degree programmes.

In these programmes, a good number of educational management and administration courses were designated as 'options' for a large population of education students. Again, teaching practice was provided as the sole practical component given to future educational leaders. An exception was in the Bachelor of Education in Commerce

(B.Ed. Com) introduced at the UDSM and University of Dodoma (UDOM) in the 2000s. In the B.Ed. Com programme, students took a relatively reasonable number of educational management and administration courses. However, still, students in these programmes were denied practical training related to the key functions of an ideal educational leader (UDOM, 2007).

This implies that the majority of potential educational leaders produced from these programmes, not only had a limited knowledge base on educational leadership but also were deprived of practicum allied to the core functions of an educational leader.

From 2000 to 2010

Furthermore, the UDOM formally founded in March 2007, responded to the recommendation of the NTF by introducing two Bachelor of Education streams for ELP. These are Bachelor of Education in Policy Planning and Management (B.Ed. PPM) and Bachelor of Education in Administration and Management (B.Ed. ADMAN). Despite this commendable initiative, these programmes did not integrate a field training component allied to the core educational leadership business. Rather candidates in these programmes are exclusively engaged in teaching practice during their practicum (UDOM, 2021).

Another initiative was the founding of the Agency for the Development of Educational Management (ADEM) in 2001, formally known as MANTEP. ADEM was established under the Executive Agencies Act No. 30 of 1997, as revised in 2009 from the former MANTEP. ADEM is mandated to conduct, among other things, quality, competence-based demand-driven training in educational leadership and school quality assurance to different educational leadership stakeholders. However, as of current, ADEM does not have programmes for ELP at a degree level. Rather, it offers ELP at the certificate and diploma levels (ADEM, 2019).

Despite the belief that ADEM plays a role in bridging knowledge and skills gaps to in-service educational leaders in Tanzania, its services have been criticised for being ad-hoc, inequitably accessible, and unsustainable; therefore, limited in their positive impact on the professional development of practising educational leaders (MoEVT, 2014a).

In 2005, the Tanzania Commission for Universities (TCU) was established under the Universities Act No. 7 of 2005 to replace the former HEAC. TCU is granted legal powers to regulate the provision of higher education through advisory, supportive, and regulatory functions. However, in performing its regulatory role, available evidence shows that TCU has not established programme-level standards for ELP in universities, besides the general guidelines for university education provision in Tanzania (TCU, 2019).

This suggests that the lack of benchmarks established specifically for addressing matters on ELP seems to be a result of lack of national policy directions for effective ELP in HLIs. It can be argued that to have a positive impact on ELP in HLIs, the education and training policy should set directions for successful ELP. Such directions would be translated into programme-level standards by TCU as reference points for programme designers.

From 2010 to 2020

The current Education and Training Policy (ETP) was formulated in 2014, and officially annulled the ETP of 1995, the Vocational Education and Training policy (VETP) of 1996, the National Higher Education Policy of 1999, and the Information and Communication Technology (ICT) Policy for Basic Education of 2007. Under its goal: "To have productive and accountable leadership, supervision, and administration in the education and training sector", the 2014 ETP declares in its policy No. 3.5.2, that:

> The government shall set up a procedure for the appointment and recognition of supervisors for the implementation of the education and training policy at regional, district, ward, college, and school levels so that they acquire special status in the service (MoEVT, 2014b, p. 50).

This policy verdict seems to be based on the ideology that having a procedure for appointment, recognition, and giving educational leaders status in the service is adequate for productive leadership in the education sector. However, the extent to which this belief is supported by research is not clear. Studies have established that successful and productive leadership and supervision of education and training institutions depend, in part, on effective ELP (Pont et al., 2018). Thus, similar to the past education policies, the present ETP lacks directions for ELP, central to successful leadership in the education sector.

As a means of implementing the new ETP, the Ministry of Education, Science and Technology, released a policy decree in 2016, that when interpreted together with the 2014 Education Circular No. 3, states:

> All educational leaders at post-primary formal education and training institutions shall have at least a university degree in education. In particular, a teacher to be appointed as Head of school must have a Bachelor's degree in education and classroom teaching experience of not less than seven years and have enabled students to pass at a satisfactory level (MoEVT, 2014c, pp. 3-4; MoEST, 2016, p. 2).

This policy still reproduces the discourses of the 1970s, 1980s, 1990s, and 2000s, which emphasise that a university degree in education is sufficient in beefing up the leadership capacity of these leaders (MoEVT, 2014b). However, the extent to which a university degree in education is adequate for preparing proficient future educational leaders is questionable as argued by Bush (2008) who affirms that:

> Being prepared for a very different job of classroom teaching could not be appropriate for future educational leaders. If this model was followed in other careers; surgeons, for example, would be trained as nurses and pilots as flight attendants, while competence as a teacher is necessary for educational leaders, it is certainly not sufficient (p. 29).

The quote above suggests an urgent need to have an alternative model for ELP in Tanzania's HLIs from which a good number of potential educational leaders are anticipated to get their preparation. In the following section, we are proposing a model for guiding the designing and implementation of viable ELPPs in Tanzania's HLIs.

An alternative model for ELP in HLIs in Tanzania

Given the state of affairs, as highlighted in the preceding sections, an alternative model for ELP in HLIs in Tanzania is proposed based on the following: First, a critical review of literature from both global and local contexts; second, strengths and deficiencies of the current modality for graduate ELP in HLIs in Tanzania, and third, best practices from other countries. The model is created in four unified components embedded in the Context, Input, Process, and Product (CIPP) prototype by Stufflebeam (2000). The development of this model was informed by the works of Cosner (2018), Davis and Darling-Hammond (2012), and Stufflebeam (2000).

The proposed model aims to provide a rational and analytic basis for ELPPs design and evaluation. However, models created based on the CIPP prototype are criticised for their assumption that the most effective decisions are those based on punctual feedback because in real operational contexts, obtaining punctual feedback is challenging (Ghazali, 2015). Yet, they are considered useful for guiding systematically the design, implementation and evaluation of ELPPs. As such, the proposed model may assist decision-makers and programme designers to answer critical questions for the development and evaluation of ELPPs. Figure 1 presents the model.

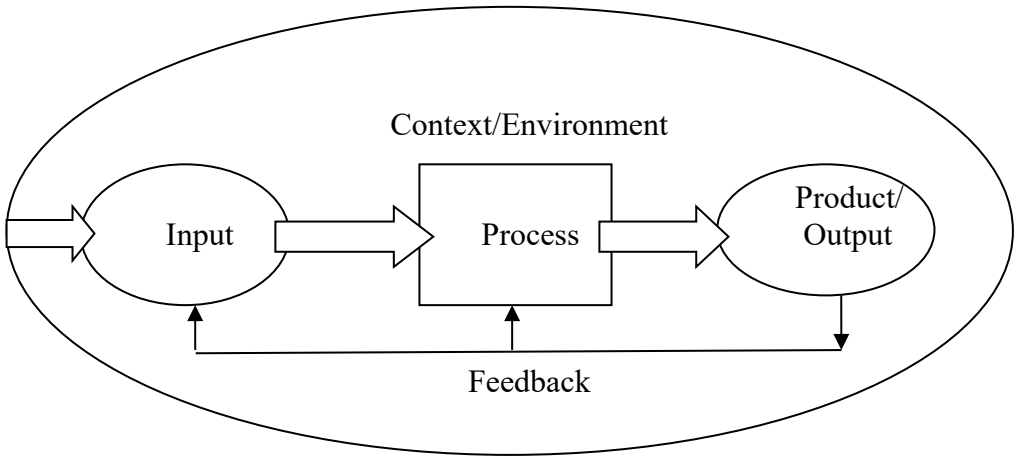

Figure 1: Alternative Model for Educational Leaders' Preparation in Tanzania's HLIs

Source: Adapted from Stufflebeam (2000), with insights from Cosner (2018) and Davis and Darling-Hammond (2012).

Drawing from Figure 1, we argue that successful ELP frameworks have to take a contextual view in generating sustainable solutions to ELP challenges. Based on contextual view, policy decision-makers and programme designers may pose the following question: What should we do in the present context? (Stufflebeam, 2000). The context aspect in the context of this paper involves gathering and analysing needs assessment information to capture more current global and local realities of ELP. This may include analysing global and national policies on ELPs; current research both international and local on ELP; global best practices on ELP, and current labour market needs (Hallinger, 2015). This context dimension enlightens decision-makers, educational policymakers, programme designers, and practitioners to realise the kind of support both at the national and university levels required to promote successfully ELP in Tanzania's universities.

The input component may trigger a question by decision-makers and programme designers as follows: How should we do it? Or in other words, how should it be done? This step involves deciding the nature and quality of programme design, strategy, and resources required to attain expected and desired programme goals (Stufflebeam, 2000). This step may involve the identification of successful global ELPPs and strategies employed in their execution. Input components cited by scholars as imperative for successful ELP at the undergraduate level include Bachelor's degree programmes designed specifically to prepare educational leaders; curricula content based on current research and labour market demands; strong partnerships between universities and the industry (employers); clinically rich field training (practicum) closely linked to the core educational leadership

functions; qualified lecturers/professors with educational leadership experience; quality candidates with leadership calibre, and sustainable financing machinery to support ELPPs (Johnson & James, 2019).

The process phase is the heart of the preparation endeavour because many resources and time are utilised. It enables decision-makers and programme designers to answer the third question: Is the programme well executed? The process stage allows programme designers and implementers to analyse the implementation of plans and strategies necessary for determining programmes' products. As such, it calls for continuous tracking, initiating changes, and making the necessary omissions and inclusions (Stufflebeam, 2000). Process components regarded as critical for successful ELPPs include the use of learner-centred pedagogy; adoption of mixed modes of programmes delivery such as face-to-face, out-reach, online, and by distance; using rigorous candidates' screening and admission criteria; employing coaches and mentors identified as exemplary and successful educational leaders during field training, and using students' cohorts to offer an enriched collegiate learning environment (Cosner, 2018).

The product phase triggers the following question by decision-makers and programme designers: Is the programme succeeding? The answer to this question is obtained by comparing actual outcomes to the expected outcomes, thus, enabling decision-makers and programme designers to decide whether the programme has to be rectified, continued, or declined. The product phase, thus, serves to provide feedback on well and poorly-accomplished plans and initiatives (Stufflebeam, 2000). The anticipated programme outcome of a well-executed ELPP includes quality, adequate, and successful ELP in HLIs; adequately and appropriately trained educational leaders; competent graduates with the requisite capability to lead more prosperous educational institutions, and improved management and leadership practices in education and training institutions.

Conclusions and recommendations

Through a trajectory of graduate ELP development in Tanzania spanning a period of about six decades, this article has examined ideologies, policies, and university practices of ELP in HLIs in Tanzania. Concerning ideology, the analysis has shown that the assumption in Tanzania education institutions seems to be that preparing an educational leader as a classroom teacher is enough for productive leadership of educational and training institutions. In terms of policy, it has been found that since independence to date, ELP has received less attention in Tanzania's national education policy discourses despite the fact that graduate educational leaders attest to a questionable leadership capacity. Practically, universities' ELP practices in Tanzania seem to have largely preserved a colonial model for ELP. A strong case has

been made that the present modality of preparing educational leaders in Tanzania's HLIs hinders HLIs from grooming competent future educational leaders. Thus, an alternative model has been advocated in this paper to redress the current modality. It is, therefore, recommended that the leadership of the Ministry responsible for education in Tanzania, and universities, should be willing to leverage ideologies, policies, and practices of ELP that have been inherited from the colonial education system, in favour of more current considerations as depicted in the proposed model. Furthermore, there is an urgent need for re-orienting the national education and training policy, the TCU guidelines and standards for university education in Tanzania to address ELP issues. Finally, there is a need for HLIs to retool their ELPPs to ensure that they are more responsive to their presumed role of preparing proficient prospective educational leaders.

Further research

This study focused on undergraduate degree programmes for ELP in Tanzania. Future studies focusing on other levels are recommended. Also, since the current study was based on a literature review, it recommends for future studies that employ empirical methodology to establish the influence of ideology, education policies, and practices on the adequacy of preparation of educational leaders in HLIs.

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Teachers' Inclusive Classroom Practices: The Role of Self-efficacy and Demographic Variables

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Abstract
The purpose of this quantitative, correlational study was to examine the role of teachers' self-efficacy and demographic variables during their inclusive practices. A structured questionnaire was used in data collection. The sample of the study consisted of 254 in-service teachers from 18 inclusive primary schools in Tanzania. The study found a statistically significant and positive relationship between teacher self-efficacy and their inclusive practices. Regression analysis indicated that teachers' self-efficacy, particularly in instructional practices, as well as teacher demographics (except gender, age, and education) were considered to be significant factors that predict their inclusive practices. Thus, the study recommends for educational interventions to promote teachers' competence, self-confidence, knowledge, and skills in order to promote inclusive practices in schools in Tanzania.

Keywords: *Teacher self-efficacy, inclusion, inclusive education, student with disabilities, and inclusive classroom practices*

Introduction

Teaching students with diverse characteristics, abilities, and capabilities in general classrooms has been advocated as a cornerstone of inclusive education (IE) (Woodcock & Jones, 2020; Specht et al., 2016). Given its benefits, IE focuses on enabling all learners to participate, collaborate, interact, and learn together despite their needs, differences, and abilities in general education settings (Dea & Negassa, 2019; Specht et al., 2016). In inclusive classrooms, students' potentials are realised and accommodated.

Implementation of IE as a philosophy and practice in many nations is consistent with the Salamanca Statement and Framework for Action on Special Needs Education (United Nations, 1994). It advocates for global commitments to promote equity, equality, and diversity across different educational systems and practices (Woodcock & Jones, 2020). As a growing educational movement, most countries have ideologically shifted from emphasising mainstreaming to IE (Tiwari et al.,

2015), which primarily focuses on the placement of students with disabilities (SWD) in ordinary classrooms. IE requires SWD to access and fully engage in regular education classrooms as opposed to fitting the learner to the needs of general education classrooms, as advocated by the mainstreaming model (Forlin, 2012). In response, various legislation and policy changes have been adopted to improve equitable access and the right to education for SWD. For instance, Tanzania formulated the National Disability Policy (2004), and the Education and Training Policy (1995; 2014). These policies seek to address the educational needs of SWD (Possi & Milinga, 2017).

This led to a significant increase in the number of SWD in regular primary schools in Tanzania, from 42783 pupils in 2017 to 55,758 in 2020 (PO-RALG, 2020). This means that the number of special and integration schools has declined, paving the way for more inclusive schools. However, as good as the policy agenda might sound, it does not necessarily guarantee good practice. Numerous obstacles still persist that thwart fully inclusion of SWD in general classrooms. Examples are variations in conceptual interpretations of inclusion (Forlin, 2012), inaccessible learning environments, and how teachers are prepared to teach SWD in inclusive settings (e.g., Sharma et al., 2017; Westbrook & Croft, 2015), as well as cultural beliefs and attitudes toward SWD (e.g., Possi & Milinga, 2017). These obstacles increase the chances of pedagogical exclusion of SWD in the regular classrooms. One of the possible factors for the continuing exclusivity of SWD could be the teacher factor.

Many teacher-related factors may impact the extent to which the teacher implements inclusive practices. The extant literature has overtly confirmed that teachers need relevant skills, knowledge, and understanding of inclusive practices, as well as attitudes, working values, and competence to be effective in inclusive settings (see Pit-ten Cate et al., 2018; Hofman & Kilimo, 2014). Heterogeneity of students in inclusive classes poses challenges to teachers because their roles and responsibilities do increase. Also, teachers continue to have concerns about their skills and feel unprepared to accommodate and teach SWD in general education classrooms. For example, they lament over classroom environments, nature of students, and school-related factors that impede their practice (Sharma et al., 2012). This suggests that inclusive practices are not always guaranteed by the placement of SWD in general education settings (Sharma et al., 2017). Implicitly, the success of IE depends on teachers' perceived beliefs about their abilities and demographic variables (Bandura, 1997). In line with past studies (e.g., Dea & Negassa, 2019; Hofman & Kilimo, 2014), teachers' self-efficacy (TSE) and demographic variables are seen as crucial elements for teachers' dispositions toward inclusive practices. Teachers' age, gender, professional training, and experience have been acknowledged as important teacher variables that determine the success of IE. Experience and continued participation in professional training and retraining enable teachers to become acquainted with the knowledge, skills, and values related to inclusive practices as well as competence and confidence needed for successful IE (Dea & Negassa, 2019; You et al., 2019). Furthermore, it is thought that

teachers with a high sense of efficacy perform relatively better than those with a low sense of efficacy, despite the characteristics of their students and the conditions of the classroom.

The complexities of achieving inclusive practices in the country has led to this study which investigated the role of TSE and specific demographic variables in predicting inclusive practices whereby IE is still in its nascent stage. The focus was on predicting the in-service teachers' inclusive practices from variables found to be significant in previous studies (see Sharma et al., 2017; You et al., 2019). The study sought to examine the extent to which predictor variables predict the criterion variable not as isolated variables but rather as interactive variables that predict each other. The study was guided by two research questions, namely: What is the relationship between in-service TSE, teachers' demographic variables, and their inclusive classroom practices? What is the effect of TSE and demographics in predicting inclusive classroom practices?

Theoretical Framework

The Social Cognitive Theory (SCT) as a motivational construct was used to examine the teacher's beliefs in their abilities and confidence in teaching SWD in inclusive classrooms. It also helped to provide better explanations of how human belief systems controlling confidence and perseverance can influence one's performance in a particular environment. In his reciprocal determinism, Bandura (1997) postulates that human performance results from reciprocal and dynamic relationships between personal factors (cognition, affects, and beliefs), behaviours (teaching behaviours, i.e., inclusive practices), and the environment (inclusive classroom). This triadic reciprocity of personal factors, behaviours, and environment provides a conceptual framework for understanding the role of self-efficacy (teachers' own beliefs, which are cognitive processes and other teacher demographics) in predicting inclusive practice (teaching behaviour) in an inclusive classroom (environment).

In the educational context, teacher self-efficacy is defined by Bandura (1977) as *teachers' beliefs about their capabilities in performing teaching tasks or having the influence of students' learning in various contexts, including those with special needs.* This means that self-efficacy determines one's efforts, goals, perseverance, and decision-making process. It stimulates a teacher's thought patterns, emotions, or feelings to take actions as per their intended goals and persist despite adversities (Bandura, 1997). This denotes the extent to which teachers' performance in various settings depends on their self-efficacy. In this regard, self-efficacy becomes an important predictor of teachers' practices despite external factors such as the nature and type of student disability, school as well as classroom environments. For example, teachers with high self-efficacy tend to apply more inclusive pedagogical practices compared to those with low self-efficacy (Woodcock & Jones, 2020). More specifically, teachers' demographic characteristics such as age, gender, training and experience are considered as the prerequisite for developing teachers' beliefs in their competence in teaching and accommodating SWD.

Teachers' knowledge, skills, attitudes, and values are facilitated through professional training and experience (Dea & Negassa, 2019; Specht et al., 2016). Teachers who value learner diversity, knowledgeable and experienced teachers are likely to support all learners despite their characteristics (Pit-ten Cate et al., 2018). Moreover, with appropriate skills and knowledge acquired through training, experience and dispositions with SWD, teachers are likely to deliver effective inclusive instructional practices. More specifically, dimensions of self-efficacy such as instructional practice efficacy, student engagement efficacy, and classroom management efficacy are also considered in inclusive practices (Park et al., 2016).

Literature Review

Teacher Self-efficacy and Inclusive Practices

Previous research has found that what teachers believe about their students in inclusive settings, their confidence in executing various actions, perseverance in the face of adversity, and the knowledge and skills required to complete such tasks all predict teacher performance or practice (Sharma et al., 2012). Teaching SWD in an inclusive setting, on the other hand, necessitates more resources as well as different teaching practices and support than teaching non-disabled peers (Sharma et al., 2017). This indicates that teachers' factors, such as beliefs and attitudes (You et al., 2019), are important indicators for successful physical and pedagogical inclusion in general education settings.

Teachers' frustrations, confidence, skills, and understandings of the roles and responsibilities of educating students with varying abilities are measured by self-efficacy (Kristiana, 2018; Sharma et al., 2012). Previous studies by Sharma and Sokal (2016) and Shaukat et al. (2019) show that the effectiveness of including SWDs in general classrooms and inclusive teaching practices seems to be influenced by teacher factors. Thus, self-efficacy is the construct that motivates and shapes teachers' thoughts, behaviours, and emotions (Bandura, 1997), just as it influences the implementation of IE (Kristiana, 2018).

Teacher Demographics and Inclusive Practices

Teacher Training

Pre-service teacher programmes are required to promote teachers' skills, knowledge, and values, as well as nurture positive beliefs. Teachers need to be effective in inclusive practices (Specht et al., 2016). For example, training in special education and inclusionary practices with SWD (e.g., Monteiro et al., 2019) have varying effects on TSE and inclusive practices. Empirical evidence from research has further confirmed that teachers' level of training has a greater influence on their instructional practices (Dea & Negassa, 2019; You et al., 2019). In particular, a study by Dea and Negassa (2019) in Ethiopia found that teachers with training in special needs education are more likely to apply inclusive practices such as

individualised instruction than teachers who have not attended training in special needs education. To this extent, previous studies have indicated that teacher training should not only include courses that foster the skills, knowledge, and understanding of students' special needs and diversities but also place a strong emphasis on changing teachers' attitudes to encourage teachers' willingness to include and teach all students in regular classrooms.

Professional Development

Past research has revealed that in a variety of situations, teachers' professional development enhances the quality of their inclusive practices and students' learning (Chao et al., 2016; Dixon et al., 2014). Chao et al. (2016) discovered that in Hong Kong, in-service teachers who participate in short training programmes on inclusive and special education improved inclusive practices. Findings from Chao et al'. (2016) study are noteworthy in that they suggest that strengthening TSE requires professional development. Results from Tanzania by Miles, Westbrook, and Croft (2018) are consistent with this. They found that teachers with pedagogical barriers in inclusive settings had insufficient professional training in special needs education. To this extent, the studies acknowledge that in-service training impacts TSE and teaching effectiveness in inclusive practices. In order to encourage positive beliefs regarding inclusive practices, the quality of the courses provided during in-service training should be context-specific coupled with personal experience. Similarly, Dixon et al. (2014) found that the time teachers spend on training, especially in differentiated instruction, positively promotes their commitment and confidence to teach SWD in general classrooms.

Teacher Experience

Bandura (1997) contends that mastery and vicarious experiences are key factors for the development of efficacy. The effectiveness of IE depends on teacher experience with SWD and inclusive practices. Numerous researchers have explored the extent to which teachers benefit from experience with SWD (e.g., Kristiana, 2018; Monteiro et al., 2019). More specifically, a study by Monteiro et al. (2019) in Macao showed that teachers with less teaching experience were facing more challenges in managing a classroom with students with special needs. In addition, Sharma et al. (2017) concluded that lengthy teaching experience in implementing IE reduces teachers' levels of concerns about teaching in general education classrooms. Teachers with previous direct contact with SWD had more positive attitudes toward IE than those who had not (Sharma et al., 2015). This corroborates Hoffman and Kilimo (2014) finding that experience with SWD determines teachers' attitudes and practices. Interactions with SWD may increase teachers' willingness to include SWD in general education classrooms (Pit-ten Cate et al., 2018). It also reduces prejudices as teachers develop positive attitudes towards SWD.

Teachers' Gender and Age

Gender is another teacher demographic variable associated with inclusive practices. Sarfo et al. (2015) found that gender may act as a predictive factor in determining teachers' inclusive practices. Their findings revealed that female teachers were more inclusive and supported inclusion more positively than the male ones. In other studies, male and female teachers were shown to have different instructional practices, with female teachers being more inclusive in instructional strategies than their male counterparts, despite the fact that there were no sex differences found in efficacy in classroom management or student engagement (Sarfo et al., 2015). Age was found to be another important factor predicting teachers' inclusive practices, though was not statistically significant. This finding is closely similar to that of Tiwari et al. (2015) who found no significant correlation between teachers' age and their perceptions of inclusive practices. This means younger teachers had more positive attitudes and efficacious towards inclusive practices than their older counterparts.

Although the aforementioned teacher demographic factors have an impact, none of them can be fully understood on their own when examining inclusive practices. TSE should be examined along these demographic variables to understand their interaction and predictive effect on successful inclusive practices.

Methodology

Research Approach and Design

The current study employed a quantitative research approach which was informed by a correlational research design to examine the extent of the predictive relationship between TSE and demographic variables on the teachers' inclusive practices. The design was deemed appropriate for predicting the variance of a dependent variable (teacher inclusive practices).

Participants

The study was conducted in two administrative regions of Tanzania, namely Dodoma and Mwanza. Six districts were sampled for the study, including Chamwino, Dodoma Urban, and Kondoa in Dodoma and Nyamagana, Ilemela, and Sengerema in Mwanza. In the districts, three inclusive primary schools with SWD were sampled for the study. The two regions had a total of 746 in-service teachers. Out of 746 teachers from 31 inclusive primary schools, Dodoma had 407 teachers, while Mwanza region had 342 teachers according to statistics by PO-RALG (2017). Out of 31 schools, 18 primary schools were randomly selected, targeting 3 schools from each district. The schools were selected because they enrol SWD, while teachers were involved due to their varied experiences with SWD. Thus, there were 254 in-service teachers working in 18 primary schools: Dodoma (n = 128) and Mwanza (n = 126).

Data Collection Instruments

The first part of the questionnaire comprised teacher demographic information. The Teachers' Sense of Efficacy Scale (TSES) as proposed by Tschannen-Moran and Hoy (2001) was employed to measure TSE. Teachers responded through a 9-point Likert scale ranging from "nothing" (1) to "a great deal" (9), which represents the degree of the

continuum of the TSES. However, to fit the study context, feedback from the pilot study, and accessibility and use of both data coding and analysis, the 9-point scale was adapted to a 5-point scale. Preston and Colman (2000) contend that the points of the scale can be reduced without threatening the validity, reliability, and factor structure. The TSES was factored into three sub-scale variables through principal components analysis and varimax rotation, including instructional practices (IP), student engagement (SE), and classroom management (CM). The reliability of TSES sub-scales in this study was as follows: instructional practice efficacy (α=.79); student engagement efficacy (α=.77), and classroom management efficacy (α=.77), while the overall TSES, was α=.94. This substantiates reliability of 0.94 established by Tschannen-Moran and Hoy (2001).

The Teacher Efficacy for Inclusive Classroom Practice Scale (TEICPS) was used to measure teachers' efficacy to teach in inclusive classrooms with pupils with disabilities. The 23-items of the TEIPCS were modified from the original TEIP scale (Sharma et al., 2012). The TEIP was further validated, modified, and used as applied by Park et al. (2016) in Bangladesh. The modified TEICPS did not include the "*efficacy in collaboration"* items, replacing it with items related to "*efficacy in student engagement* (see Sarfo et al., 2015) because the study did not investigate co-teaching in inclusive classrooms. Also, the omission and replacement of items enable the TEIPCS to concur with the SCT, TSES. In addition, due to the context in which IE is implemented, teaching assistants are rarely used in Tanzania's inclusive classrooms. Teachers responded using a 5-point Likert-type scale ranging from "*Very Often"* (1) to "*Almost Never"* (5). The reduction of the number of points from 6 in the original TEIP to a 5-point scale was done to have a neutral point. Previous validation studies showed good psychometric properties of TEICPS in measuring teacher efficacy in inclusive practices (e.g., Sharma et al., 2012; Park et al., 2016). The Cronbach's Alpha was 0.86.

Data Analysis

Demographic characteristics and total scores were subjected to descriptive statistics analysis. Then, Pearson correlation and partial correlation tests were performed to examine the existing interrelationships between TSE, teacher demographics, and inclusive practices. Hierarchical regression analysis was used to examine the extent to which inclusive practice (criterion variable) is explained by predictor variables (TSE and teacher demographics). Descriptive and inferential statistical analysis were performed using IBM SPSS (Version 21) software.

Results and Discussion

Demographic Characteristics of Respondents

Teacher demographic information such as gender, age, level of education, professional training, teaching experience, and experience with SWD were gathered to determine their role in inclusive practices. Table 1 summarizes the respondents' demographic characteristics.

Table 1: In-Service Teacher Demographic Characteristics

Variable	Category	f	%
Gender	Male	78	30.7
	Female	176	69.3
Age	25-30	44	17.3
	31-35	55	21.7
	36-40	59	23.2
	41-45	40	15.7
	46-50	31	12.2
	51-55	15	5.9
	56-60	10	3.9
Level of Education	Master	5	2
	Bachelor	29	11.4
	Diploma	48	18.9
	Certificate	172	67.7
Professional Training	Attended	103	40.6
	Not attended	151	59.4
	Missing	0	0.0
Teaching Experience	0-5 years	37	14.6
	6-10 years	62	24.4
	11-15 years	74	29.1
	16-20 years	32	12.6
	Over 20 years	49	19.3
Teaching Experience with SWD	0-5 years	151	59.4
	6-10 years	68	26.8
	11-15 years	11	4.3
	16-20 years	6	2.4
	Over 20 years	3	1.2
	None	15	5.9

As indicated in Table 1, about 176 (69.3%) were females, and78 (30.7%) were males, with ages ranging from 25 to 58 years, with a mean age of 38.92 years. More than two-third of the respondents (192 teachers, 67.7%) had a certificate in teacher education, with 18.9% holding a diploma (n = 18). A small number of them (11.4%) had a bachelor's degree (n = 29), while 2% had a master's degree ($n = 5$). When asked if they had attended professional training in special needs education, 151 teachers (59.4%) indicated they had not, compared to 103 teachers (40.6%) who had attended professional training in special needs education. On the other hand, the majority of teachers (66.1%) had between 6 and

20 years of teaching experience. Similarly, the majority of teachers (94.1%; n = 239) had a varied experience in teaching SWD, ranging from one to twenty years, with only 5.9 percent (n = 15) indicating they had never had such experience.

Relationship between Teacher Self-Efficacy, Demographic Variables and their Inclusive Practices

The study examined the relationship between in-service TSE, teachers' demographic variables, and their inclusive practices. Descriptive statistics indicated that teachers had a high sense of efficacy, with the *mean score of* 4.04 and 3.95 in overall TSE and TEICPS, respectively. Additionally, results indicated that teachers had high positive self-efficacy in IP (M = 4.09), SE (M = 4.02), and CM (M = 4.00). TSE has a significant contribution to teachers' inclusive practices because it predicts effectiveness of the teacher in the inclusive classrooms. Table 2 presents the summary results of the relationship between variables.

Table 2: *Pearson (r) Correlations between the TSES (Sub-scales), Teacher Demographic Characteristics, and Teacher Inclusive Practices*

		1	2	3	4	5	6	7	8	9	10	11
1	TEICPS	–										
2	TSES	.457***	–									
3	TSE (IP)	.435***	.921***	–								
4	TSE(SE)	.393***	.930***	.790***	–							
5	TSE(CM)	.438***	.915**	.757***	.780***	–						
6	Gender	-.052	.059	.066	.061	.036	–					
7	Age	.071	.152*	.106*	.138*	.176*	.096	–				
8	Education	-.110*	.012	.036	.034	-.038	.087	.037	–			
9	Professional Training	-.284***	-.240***	-.200**	-.225***	-.242***	.063	-.074	.188**	–		
10	Teaching experience	.123*	.148*	.098	.113*	.201**	.138*	.840***	.032	-.015	–	
11	Experience with SWD	-.019	-.077	-.046	-.084	-.085	.110*	.201**	-.051	.032	.188**	–

Note**:** Sig. (2-tailed) ***p < 0.001, **p < 0.01, *p < 0.05.

Table 2 indicated that there was a statistically significant relationship between the TSE and inclusive practice (p<0.01). Teachers' self-efficacy in the IP (r =.435), SE (r =.398), and CM (r =.438) sub-scales was moderately correlated with their inclusive practices. This shows that with such high efficacy beliefs, their inclusive practices would follow similar trends. This corroborates the findings of previous researchers (Park et al., 2016; Sharma

et al., 2012), who found that TSE is an important predictor of teachers' effectiveness in inclusive practices. However, mere high scores on efficacy scales for inclusive practices do not necessarily indicate strong teacher beliefs and quality in inclusive practices. There are contextual and teacher demographic variables that can predict TSE and inclusive practices (Bandura, 1977; Kristiana, 2018).

Table 2 indicates that teachers' gender, age, teaching experience with SWD, and efficacy for inclusive practices had low but no significant relationships ($p > 0.05$). Despite the fact that these teachers' factors are linked to inclusive practices, no statistical significance was found. For example, the finding suggests that being a male or female teacher does not necessarily predict a teacher's efficacy in inclusive practices. Similarly, age did not indicate statistical differences between older and younger teachers on inclusive practices. However, this does not mean that age has no effect on a teacher's inclusive practices. This echoed the finding by Tiwari et al. (2015), who found no age difference in teachers' inclusive practices. Further, there were small but statistically significant associations between teachers' educational level, professional training, and years of teaching experience and their inclusive practices ($p<0.05$). This means that the factors had a statistically significant effect on the teachers' inclusive practices. These findings are consistent with those of Dea and Negassa 2019; Kristiana (2018), who found a statistically significant effect of training and experience with SWD on teacher inclusive practices. The reason provided for this effect was that teachers' professional training exposes them to practical skills, knowledge, and values related to teaching and accommodating SWD.

It was assumed that the relationship between TSE and inclusive practices might be mediated by the effect of demographic variables. Partial correlation (*pr*) was used to explore the relationship between TSE and teacher inclusive practices, while controlling teacher demographic variables to examine the impact of the relationship between the main variables. Table 3 presents the summary results.

Table 2: *Partial Correlations Matrix between TSE and Teacher Inclusive Classroom Practices*

Correlations				
Control Variables			TSES	TEICPS
-none-[a]	TSES	R	1.000	.457***
		Sig.		.000
	TEICPS	R	.457***	1.000
		Sig.	.000	
	Gender	R	.061	-.052
		Sig.	.336	.411
	Age	R	.152*	.071
		Sig.	.015	.260
	Education	R	.012	-.110
		Sig.	.847	.079
	Professional Training	R	-.249***	-.279***
		Sig.	.000	.000
	Teaching experience with SWD	R	-.077	-.019
		Sig.	.219	.767
Gender & Age & Education & Professional Training & Teaching experience with SWD	TSES	R	1.000	.422***
		Sig.		.000
	TEICPS	R	.422***	1.000
		Sig.	.000	

Note**:** Sig. (2-tailed) ***, *p < 0.05.

As shown in Table 3, there was a moderate, positive, partial correlation between TSE and inclusive practices [r =.422, n= 254, *p*.001], with higher levels of teacher self-efficacy associated with higher levels of efficacy in inclusive practices. An examination of the zero-order correlation (r=.457) suggested that controlling teacher demographic variables had very little effect on the strength of the relationship between TSE and inclusive practices (i.e., a small decrease in the strength of the correlation from. 457 to .422). Demographic variables might have a moderating effect on the relationship between TSE and inclusive practices. However, the findings concluded that the existing relationship between TSE and inclusive practices is not merely due to the impact of teacher demographics responding.

The results showed that in-service teachers who participated in this study had a moderately positive, statistically significant correlation. This suggests that TSE, as a personal factor,

has an effect on determining teachers' inclusive practices. This finding can be perceived in several ways. First, it may imply that the higher the level of self-efficacy, the more frequent is in-service teachers' use of inclusive practices. This accounts for the confidence among in-service teachers about their abilities to engage students in learning, use appropriate instructional strategies, and organise and manage classrooms. Secondly, teachers with high sense of efficacy are believed to be comfortable and confident in inclusive classrooms because they do not doubt their abilities, even when there is a diversity of learners and challenges in the teaching environment. Another more interesting explanation is that teachers with high self-efficacy might be comfortable, accommodative, and inclusive enough because their personal beliefs match their teaching abilities, even when their classroom has SWD. These findings are consistent with previous studies on TSE and teacher inclusive practices (e.g., Chao et al., 206; Sharma & Sokal, 2016). Findings from the studies have suggested that TSE is necessary for success in inclusive practices.

Thus, a vicious cycle of correlations is seen in the extent to which teachers' self-conviction about their abilities to include SWD and the use of inclusive practices predict each other (Bandura, 1977). According to the findings, TSE is a personal factor in implementing IE if other teachers' variables are held constant. This suggests that teachers' competence is a significant predictor of teachers' inclusive practices. Although other demographics seem to be significant in determining inclusive practices such as teachers' experience and training (Dea & Negassa, 2019), TSE remains an important factor in predicting inclusive practices. It is promising to find that TSE and inclusive practices are related and, in fact, have a positive effect on teachers' effectiveness in inclusive settings. Such relationships may trigger teachers' effectiveness in applying appropriate instructional strategies, students' engagement in learning, and maintain and organise a classroom to accommodate students despite their abilities.

Predictive Effect of Teachers' Self-Efficacy and Demographic Variables on Teachers' Inclusive Classroom Practices

A hierarchical multiple regression analysis was performed to examine which teacher variable accounted for unique variance in teachers' inclusive practices. The predictor variables were the TSE and teacher demographic variables (gender, age, education level, professional training, teaching experience, and experience with SWD). In the model, the controlled variables were entered first, and the variable whose predicting effect had to be evaluated was entered afterwards. Table 4 summarizes the extent to which teachers' inclusive practices are explained by the predictor variables.

Table 4: *Regression Models Predicting Teacher Efficacy for Inclusive Classroom Practices*

		β	*t*-value	Sig.
Model 1	Gender	-0.075	-1.351	0.178
	Age	-0.187	-1.837	0.067
	Level of education	-0.075	-1.338	0.182

	Professional Training	0.167	2.872	0.004
	Years of teaching experience	0.225	2.211	0.028
	Years of teaching experience with SWD	0.016	0.29	0.772
	Model Statistics	*F*6, 247=4.951, *p*< 0.001.		
	R^2	0.107		
Model 2	TSE (IS)	0.240	2.415	0.016
	TSE(SE)	0.028	0.277	0.782
	TSE(CM)	0.176	1.786	0.075
	TSE	0.417	7.221	0.000
	Model Statistics	*F*7, 246=12.571, *p*< 0.001.		
	R^2	0.263		

In the first step as indicated in Table 4, the block of teacher demographics (gender, age, education, professional training, years of teaching experience, and experience with SWD) were entered and the strength of their prediction examined. The contribution of demographics to inclusive practices was examined. Results have shown that teaching experience and professional training were significant contributors, while gender, age, level of education, and experience in teaching SWD were not significant contributors. Results have shown that when teacher demographic variables were entered into the model as a block of variables, there was an increase in the variance in inclusive practices [R^2 = 0.107, F (6,247) = 4.951, p = 0.001]. This indicates that teachers' inclusive practices were explained by 10.7 percent of the total variance. Only teachers' professional training (β=.0.167, p<0.05) and teaching experience (β=0.211, p<0.05) had a slight significant effect on teachers' inclusive practice. For teacher training, the effect size was positive, implying that the teachers with professional training had slightly positive perceptions of inclusive practices. This implies that teachers who attended training in special education had higher levels of inclusive practices than those who had never attended or had no experience in teaching SWD. In addition, the results showed that teachers' gender, age, and level of education attained had no statistically significant predictive effects on the teachers' inclusive practices.

In the second step, TSE scores were entered into the model to determine their strength in predicting teacher inclusive practices (dependent variable). It was learned that teacher inclusive practices were significantly predicted by the TSE (β = 0.417; p<0.01). Results indicated that when TSE was entered into the equation, the effect size of the model increased. This means that the model explains 26.3 percent of the variance and accurately predicts inclusive practices [R^2 = 0.263, (F7, 246) =12.571, p<0.01]. This means that the first model explained less variance

in inclusive practice changes (10.7 %) compared to the second model, which improved the variance in inclusive practice (26.3%). Whereas self-efficacy in IP contributed significantly to the model (β= 0.240, p=0.016; $p < 0.05$), self-efficacy in SE (β= 0.028, p=0.782, >0.05), and self-efficacy in CM (β= 0.176, p=0.075, > 0.05), did not. The regression analysis shows that when three dimensions of teacher self-efficacy are regressed into the model, only instructional practices significantly predict teachers' inclusive practices. This could be expected because teachers' instructional practices might affect other dimensions of classroom practices because teachers engage and organise the classrooms while teaching. Other dimensions of the TSE such as SE and CM were not statistically significant. According to the findings, when these three TSE dimensions were entered together, they significantly contributed to the model. It further indicates the interrelationships between the three dimensions of TSE (IS, SE, CM) in predicting teacher inclusive practice.
Results suggest that TSE and teacher demographic variables played a significant role in the model. The interaction independent variables (TSE*Teacher demographics) are statistically significant (p< 0.001), and the R^2 value increased with the interaction effect between the variables rather than without it (0.107 versus 0.263). Consequently, it can be concluded from the findings that there is a meaningful interaction between TSE and teacher demographics because they had predictive power in the equation. Since there is an interaction effect between variables, both of them predict the outcome variable (the inclusive practices). This means it is sensible to interpret their main effects not in isolation but rather interactively, as they define the quality of the teacher in an inclusive setting. This finding confirmed the role of teacher personal factors in the well-known Bandura's triadic reciprocal relationship between environment and behaviour (Bandura, 1977).

The contribution of teacher demographics such as teaching experience and training in the model corroborates what was postulated by Bandura as *mastery experiences and vicarious experiences* in the development of self-efficacy (Bandura, 1997). This finding is consistent with previous studies by Dea and Negassa (2019); Sharma and Sokal (2016), and You et al. (2019), who found that training in special needs education and experience were significantly related to teacher's inclusive practices. The current study revealed that inclusive practice scores were not significantly related to age, gender, and level of education**.** This implies that the variables were not significant factors in determining TSE towards inclusive practices. It is worth noting that teachers, regardless of age, gender, and education show similar levels of self-efficacy towards inclusive practices. In addition, the increase in differences shown in age, gender, and level of education, did not relate to teachers' inclusive practices.

These findings have contrasted significantly with earlier research findings that established the significant contribution of teacher demographics to teacher performance in various settings. For example, research indicated that both pre-service and in-service teacher training is effective in preparing and equipping teachers with sufficient knowledge, and skills for special and general teachers (Shaukat et al., 2019; Specht et al., 2016). This inconsistent finding can be attributed to several factors such as sample size, research

design, or rather homogeneity of teachers' level of education, in which the majority of in-service teachers had certificates of teacher education. A question to be raised here is, Why *were the results on teachers' levels of education not reflecting their levels of inclusive practices?* The findings of this study established that teachers, regardless of their attained levels of education, felt uncomfortable or less efficacious in implementing inclusive practices. In this regard, results suggest the necessity of improving professional training for teachers to promote their inclusive practices. This indicates that increasing knowledge and professional training for both general and special education teachers will improve efficacy beliefs, attitudes, and practices (Pit-ten Cat et al., 2018).

Another factor could be the assertion by Bandura (2006:307) that the efficacy belief system is not a global quality but a differentiated set of beliefs tied to particular areas of functioning. When taken together, however, TSE and demographic characteristics significantly predict their inclusive practices. This study has shown that TSE and specific demographic variables are key factors to consider when making decisions to include SWD in general classrooms for effective inclusive practices.

Conclusion and Recommendations

Results have shown that TSE is an important construct that can negatively or positively alter the correlation between teacher demographics and inclusive practices. The study's findings show relationships between overall TSE and teacher inclusive classrooms practices. The three dimensions of the TSE form the basis of the teacher effectiveness in the inclusive setting. Teachers' high scores in inclusive practices, were also found to have a significant improvement as a result of high TSE. In addition, the results of this study underscore the importance of teachers' factors such as beliefs, knowledge, and skills needed as the catalysts for effective inclusive practices. This study assumed that teachers with high self-efficacy (personal beliefs) will incorporate the inclusive practices (behaviour) in general classrooms with SWD (environment). The finding corroborates Bandura's reciprocal and dynamic relationships between personal factors, behaviours and the environment (Bandura, 1977). The essential challenge is, "How can these insights be transformed into policy and practice that works?'' This is a gap between the theoretical foundation of IE and actual classroom practices, which is often evident among teachers' struggling to implement successful inclusive practice, regardless of demographic or school variables.

Any education reform or innovation that does not align with teachers' personal and teaching beliefs, as well as other contextual variables, is bound to fall short of its intended goals and principles. As previously stated in this study, IE is a policy issue and educational reform that aims to teach SWD alongside their peers in general classrooms. Tanzania is not exceptional in adopting this global education reform. For better implementation of IE, all available indicators and enabling conditions must be considered to ensure that IE

is a reality rather than a rhetorical policy agenda. As a practice, IE should strive to dispel myths about the nature of teaching, knowledge, and teachers, as well as student abilities.

With reference to the study results, the implementation of IE rests on the actions or practices of teachers [implementers] who hold various degrees of belief systems. The findings of this study are anticipated to inform policies on motivating teachers and providing an effective environment for inclusive practices for both teachers and students. Interventions should be used to improve teachers' proficiency in the form of professional development that is specifically geared toward motivating teachers to accept and willingly teach in inclusive classes. To achieve this, teacher training and retraining should be emphasised. Ideally, giving teachers the opportunity to attend in-service training would increase their competence, knowledge, and skills, specifically on inclusive classroom management, students' engagement, and instructional practices. This should also be applied to pre-service education training to bring significant changes in classroom and school environments. In achieving this, teachers will develop the necessary competence, attitudes, knowledge, and skills and, therefore, will feel more efficacious with SWD enrolled in inclusive classrooms.

Although this study confirmed that TSE and teacher demographics are crucial components in the understanding of inclusive practices, there are some limitations. First, the findings of this study can only be generalised to teachers with similar demographics and settings because the data were collected from teachers working in 18 inclusive primary schools. Further studies with a larger sample should be considered to expand the scope of the study and shed light on the contextual factors predicting teachers' inclusive practices. Secondly, the current study utilised a self-reported questionnaire, which could have led to some kind of response bias due to the teachers' social desirability. So, the accuracy of the information drawn from the use of the questionnaires might be limited because it depended on teachers' honesty. It is recommended a similar study be extended to other inclusive schools. Lastly, since the current study employed quantitative approach in data analysis, it recommends for a related study that employs a mixed method approach, to obtain more solid data related to teacher inclusive practices and the extent to which they are predicted by TSE, teacher demographics, and classroom variables. The data will help to uncover various contextual factors affecting the teacher's inclusive practice which were not accounted for in the present study.

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The Relationship between Self-Esteem and Sexual Risk-Taking Behaviours among Adolescent Students in Tanzania

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Abstract

This paper quantitatively assessed the relationship between self-esteem and sexual risk-taking behaviours among adolescents. The study employed a correlation design, using a questionnaire for data collection. A total of 511 students participated in this study. The data was analysed using Pearson's Correlation Coefficient. Results showed no significant relationship between self-esteem and sexual debut (r =.081, p > 0.05), self-esteem and safe sex (r =.081, p > 0.05) and a weak positive relationship between self-esteem and multiple partners (r =.033, p .470). This implies that self-esteem did not influence sexual risk-taking behaviours. The study recommends for a related study using a qualitative approach to explore the role of other socio-cultural aspects that can influence adolescents to be involved in sexual risk-taking behaviours.

***Keywords*:** *adolescents, multiple partners, safe sex, sex debut*

Introduction

Sexual risk-taking behaviours among adolescents can be described as behaviours involving unprotected vaginal, oral, or anal intercourse, inconsequent usage of condoms, having multiple sexual partners, and drug or alcohol use before or while having sexual activity (Chawla & Sarkar, 2019; O'chieng, 2013). Additionally, it has been specified that the key indicators of risk sexual behaviours for adolescents include: unprotected sex, early sexual activity before age 18, and multiple sex partners (Seff, Steiner, & Stark, (2021). Harris and Orth (2019) define self-esteem as a person's global sense of self, which includes perceptions of aptitude, self-worth, self-image, self-efficacy, and other aspects of self-concept. Harris and Orth (2019) added that high self-esteem increases an individual's ability to cope with stress and serves as a cushion against anxiety. Low self-esteem has a significant association with sexual risk-taking behaviours such as unprotected sex, early sexual debut, and multiple partners.

Various studies have shown that self-esteem is high during childhood and tends to slowly decrease during adolescence (Ogihara, 2020). Different reasons have

been given to explain the variation in self-esteem in terms of age. Literature shows that children have high self-esteem because it is artificially magnified and the subsequent decline reflects an increasing reliance on more realistic information about themselves (Ogihara, 2020). During adolescence, the decline in self-esteem has been attributed to maturational changes associated with puberty and cognitive changes associated with the emergence of formal operational thinking. Literature shows that there is a decline in self-esteem during the end of adolescence between 18–23 years. This is the period when young people are confronted with the doubting reality of independence and the feeling of being overwhelmed by the future. It is very disappointing to them because it is the time where their self-esteem starts to decline slowly (Karina, 2012)

Researchers worldwide have been working on the influence of adolescents' self-esteem on sexual risk-taking behaviours. Both correlation and longitudinal studies have been conducted and reported that there is a positive relationship between self-esteem and adolescents' involvement in sexual risk-taking behaviours (Currie et al., 2012: Hensel et al., 2011; Veselsk et al., 2019; Wang et al., 2018; Waston, 2017; This means that a low self-esteem has negative implications for an adolescent's life. The better and richer adolescents are in self-esteem, the less they are involved in sexual risk behaviours. Studies conducted in Europe, America, Sweden, Portugal, and Hong Kong on the relationship between self-esteem and sexual risk behaviours showed that self-esteem had a significant effect associated with sexual risk-taking behaviour among adolescents. In the same vein, they found that adolescents with low self-esteem were involved in particular sexual risk-taking behaviours (; Currie, Zanotti, Morgan, Currie, de Looze, Roberts, and Barnekow, 2012; Favara, 2013; Unis, Johansson, and Sallstrom, 2015; Wing et al., 2011;).

In developing countries such as Nigeria, Botswana, South Africa, and Kenya, the key argument has been that the low self-esteem of adolescents places them at a high risk of engaging in sexual risk-taking behaviours including unprotected sex (Chilisa, Tlhabano, Vista, Pheko, Losike, Mosime, Mpeta, & Balogun, 2013). A study conducted by Mercy and Peter (2014) in Nigeria showed that self-esteem helped to boost adolescents' confidence and reduced sexual risk-taking behaviours. In South Africa, a study by Macapagal (2019) found that self-esteem placed adolescents at high risk of engaging in sexual behaviours such as unsafe sex and multiple partners. In a similar way, the study conducted by O'chieng (2013) in Kenya showed that most adolescents started to have multiple partners at the age of 16 years, and there was a significant association between having multiple partners and their level of self-esteem (chi square=42.209; p=.000). In addition, adolescents with low self-esteem who engaged in drinking alcohol and drug abuse were at a greater chance of engaging in sexual risk-taking behaviours that were highly related to STDs (p=.003).

Considering the context of Tanzania, the study conducted by Karina (2012) showed the link between adolescents' involvement in sexual behaviours and their self-esteem (r=.045, *p* value=.001). This implied that young teenagers with low self-esteem were more likely to have multiple partners and have unsafe sex. In the same study, the findings showed that adolescents with low self-esteem engaged in sexual activities intentionally compared to those with high self-esteem. The implication of these findings is that the majority of adolescents in Tanzania engage in sexual risk behaviours. This argument is supported by the data provided by the Tanzania Demographic and Health Survey and Malaria Indicator Survey (TDHS-MIS) 2017-2018. (2018) which indicated that among adolescents, condom use is as low as 37% in adolescent girls and 35% in adolescent boys between the ages of 15–19. The report further revealed that condom use among adolescents is lower than expected. Less than one-third of adolescents reported using condoms at their first sexual intercourse. This implies that many adolescents engaged in sexual activity without using condoms. Thus, they remained at a high risk of contracting HIV and early unplanned pregnancies. Likewise, James, John, and Zacharia (2016) reported that a substantial proportion of adolescents in Tanzania engage in high-risk sexual behaviours and are therefore, at risk of getting STDs.

The previous review and empirical evidence from literature showed that adolescents engage in sexual and risky behaviours and that self-esteem plays a vital role in influencing sexual risk-taking behaviours among adolescent students. However, in the context of Tanzania, the extent to which self-esteem is associated to adolescents' sexual risk-taking behaviours is not well known. Although there are several studies conducted in Tanzania on adolescents' sexual risk behaviours, very little is known about the relationship between self-esteem and sexual risk-taking behaviours. It is against this backdrop that the current study has found to investigate the relationship between self-esteem and sexual risk behaviours among adolescent students in Tanzania.

Sexual risk-taking behaviours have become a problem to many adolescents. These behaviours normally leave long-lasting negative consequences to adolescent students such as, unwanted pregnancy, emotional harm and sexual transmitted diseases, which reduce their chances to accomplish their educational goals. Studies have shown that adolescents with high self-esteem tend to demonstrate higher academic achievement, health relationships, positive social and mental development, as well as self-confidence. Although several studies have been conducted in Tanzania on self-esteemit is unknown as to what extent self-esteem is associated with adolescents' involvement in sexual risk-taking behaviours. Given this limitation and knowledge gap, this study was set to investigate the relationship between self-esteem and sexual risk-taking behaviours among adolescent students in secondary schools in Tanzanian context.

1.1

1.2 Research Objectives

This study was guided by the following objectives:

1. To assess the level of self-esteem among adolescent students in private and public secondary schools.
2. To examine the relationship between self-esteem and sexual risk-taking behaviours among adolescent students in secondary schools.

1.3

1.4 Research Hypotheses

This study was guided by the following null hypotheses

1. Adolescent students do not have a reasonably high level of self-esteem.
2. There is no statistical significant relationship between self-esteem and sexual risk-taking behaviours among adolescent students in secondary schools.

Methodology

Research Approach and Design

This study employed a quantitative approach which sought to generate large amount of data on how one's self-esteem is associated with sexual risk-taking behaviours in the case being studied. The study employed a correlation research design to establish the relationship between self-esteem and sexual risk-taking behaviours among secondary school adolescent students. The study collected the respondents' background information from private and public secondary schools.

Population, sample and sampling techniques

The target population of this study included all secondary school adolescent students from form one to form four classes of both private and public secondary schools in Kinondoni Municipality in Dar es Salaam. The overall number of participants was 8,133, which included 5,888 students from public secondary schools and 2,245 students from private secondary schools.

To get the sample size for this study, the researchers applied a formula by Cohen, Cohen (2018). in their sample size statistical table, which suggests that, for a population size ranging from 5,000 to 10,000 with a sampling error of 5% and a confidence level of 95%, the sample size should be 520. So, using Cohen's formula, the number of respondents involved in this study was 511, with 324 students from public high schools and 187 students from private high schools. The sample size of the study was selected from Kinondoni Municipality. The selection of Kinondoni Municipality was based on the following reason. First, Kinondoni municipality is the smallest in square kilometer (about 531 km^2) compared to other districts in

Dar es Salaam and country wide in general, but it is the most densely populated and a business center which attracts many people from different angles of Tanzania including adolescents in secondary schools. Its population makes a total number of 1,083,913 people (NBS, 2017). The population comprises heterogeneous characteristics in terms of socio-economic background, education level and culture which represent people from all regions of Tanzania. These heterogeneous features of the population have a significant effect on adolescents' self-esteem development and their involvement on sexual behaviours. That allowed wider and in-depth collection of information from the adolescent students from secondary schools.

The key respondents were selected through, stratified sampling and simple random techniques. Therefore, researchers formulated three strata from the target population. The first stratum was based on sex. The second stratum was based on the class level. The participants ranged from form one to form four and the third stratum was based on category of secondary schools (i.e private and public secondary schools). Then from each stratum the required number of participants was randomly selected. Simple random sampling was used to select secondary school adolescent students from form one to form four classes. The key focus was to collect information on the relationship between self-esteem and sexual risk-taking behaviours among secondary school adolescent students. Therefore, simple random sampling was conducted by assigning numbers on special cards; the cards had numbers ranging from 30 to 40. To select the respondents, the researchers asked the respondents to pick the cards randomly. Students whose cards had even numbers were selected for the study. Thus, a total of 511 respondents, including 324 students from public secondary schools and 187 students from private secondary schools were selected to participate in this study.

Data collection Instruments

Structured questionnaire was employed in this study as the main data collection tool. There were three main sections of the questionnaire. Section A of the questionnaire assessed participants' demographic information; section B consisted of scale measuring initiation of sex before 18 years, while section C consisted of scale measuring information on safe sex. Section D consisted of scale measuring information on multiple partners and section E consisted of scale measuring levels of self-esteem.

In measuring levels of self-esteem, a self-esteem scale developed by Dr. Morris Rosenberg in 1965 was used. The Rosenberg Self-esteem scale, the scale consisted of ten items with four response options: Strongly Agree (SA), Agree (A), Strongly Disagree (SD), and Disagree (D). Participants were asked to tick the statements according to how they felt at the time of completing the questionnaire. The researchers

opted to use such scale because other researchers had used it successfully with diverse population (Kessy, 2010; Adams, 2010). Sexual risk-taking behaviours were measured by using sexual risk survey scale adapted and modified from Turchik and Garske (2010). The researcher decided to use this scale because it is commonly believed that it is a taboo to talk about sexual matters when you are a student. Thus, other methods like interview and focus group discussion would reduce authenticity of the respondents in providing information.

1.5 Validity and Reliability of the Instruments

Validity at the early stage of instruments construction, construct and content validity was taken into consideration. The questionnaires were pre-tested during a pilot study which involved two selected public and private secondary schools using 40 students from Ilala Municipality. A total number of 20 students from private schools and 20 students from public schools were selected. To make the sample to be representative, five students from each class (from Forms I-IV) were selected from public and private secondary schools respectively. The pilot was conducted so as to determine the major and minor issues of content and feasibility and to test validity and reliability of the questionnaires. This enabled the researcher to make some changes, edit, and format the questionnaires with regard to structure and vocabularies as was used in the questionnaires.

Peer review was also used as a mechanism and principle for evaluating and assuring the quality of research instruments before. The researchers distributed the questionnaires to his peers who have got experiences and knowledge on the construction and use of questionnaires. Peers reviewed the questionnaires and collected all mistakes and unnecessary information contained in the questionnaires and returned them to the researcher. Furthermore, the tools were originally written in to English. To ensure their validity, the tools were translated in to Kiswahili because majority of the respondents in the targeted population were more likely to respond easily and comfortably in Kiswahili rather than English. The translated tools were given again to experts to translate them back to English so as to maintain the original intended meaning.

Internal and overall reliabilities of each component of the questionnaires which are sexual risk survey scale and self-esteem questionnaires were tested by Cronbach's Alpa Coefficient scale. In this study, the Rosenberg self-esteem scale reliability was 0.75 while that of scale of initiation sex before 18 years was 0.8; scale on safe sex was 0.75 and scale on multiple partners was 0.8.

1.6 Administration of the Questionnaire and Tests

After getting consent of both school authorities and students, the questionnaires were administered to the students. A total number of 511 questionnaires were administered to students. Generally, 324 questionnaires were administered to public secondary schools and 187 to private secondary schools. The researcher managed to get back all questionnaires administered to the students. Each classroom had a research assistant who was clarifying issues which were not clear in the questionnaires. All students managed to fill in the questionnaires and all questionnaires were collected by the researcher afterward. The questionnaires were administered during regular class time. The total time for filling and complete questionnaires ranged from 20-30 minutes. During that time, the researcher and his two assistants remained in the respective classes so as to provide an opportunity to respondents for more clarifications. All the responses were entered into SPSS computer software and the answers were put into different categories so as to simplify the process of data analysis.

Data analysis Procedures

The quantitative raw data were systematically analysed by using statistical package for social sciences (SPSS) version 20. The data were cleaned, checked and rechecked to ensure all values for all questions were correctly entered into software. To measure the level of self-esteem, researchers used Rosenberg self-esteem Scale. All negative items (2, 5, 6, 8, and 9) in this scale were reversed during coding process. The average score was computed for all 10 items, the items were answered using a 4-point Likert scale format ranging from strongly agree to strongly disagree. The interpretation of scores ranged from 1-2.5 (low self-esteem) 2.6-3.5 (moderate self-esteem) and 3.6-4 (high self-esteem). Frequencies were run for all 10 items for the self-esteem scale to determine the level of self-esteem among adolescent students in private and public secondary schools. Moreover, Pearson's Correlation Coefficient was used to determine the degree to which a relationship between self-esteem and sexual risk-taking behaviours is linear.

Ethical Considerations

The researchers followed the required ethical procedures by first requesting and obtaining a letter of permission from the University Vice Chancellor's office which introduced him to Dar es Salaam Regional Administrative Secretary (RAS) and from there to District Administrative Secretary (DAS). Then the DAS introduced the researchers to Municipal Executive Director who forwarded the permission letter to the heads of secondary school where the study was conducted. Informed consent was obtained from the heads of school, students and academic masters after the researchers had introduced themselves and explained the objectives of the study, importance of the information the study would generate and how respondents

would participate in the study.

Some of the participants were less than 18 years old. Since sex is a sensitive topic, the researchers asked consent from the heads of school who work on behalf of the parents. Privacy and confidentiality were adhered to throughout data collection, analysis and writing of the research report for this study. The questionnaire instrument did not require respondents to indicate their names or other details about their personal identities. To ensure anonymity, the schools were given special codes such as SCO1, SCO2, SCO3, SCO4, SCO5, SCO6, SCO7 and SCO8. In addition, the participants were informed about their right to participate in the study and withdraw from the study at any point if they so wished without explaining to the researcher and without any consequences. The sample size of this study comprised 511 respondents, 324 students from public secondary schools and 187 students from private secondary schools

Findings

1.7 Background Characteristics of the Respondents

The study collected respondents' information about class level, age and sex. A total of 511 questionnaires were returned whereby 324 questionnaires were from public secondary schools and 187 questionnaires from private secondary schools. The results revealed that majority 324 (63.4%) of respondents were from public secondary school students, and 178 (36.6%) students were from private schools. Based on sex factor, from public schools140 (60.6%) were male students and 184 (65.7%) were female. From private schools, 91 (48.7%) were male and 96 (51.3%) were female. Furthermore, based on the class level, the majority of respondents were from form one 157 students, whereby 120 (76.4%) were from public and 37 (23.6%) from Private schools. About 151 were Form two students, whereby 90 (59.6%) were from public schools and 61 (40.4%) from private schools. Form three were 120 whereby 69 (57.5%) were from public schools and 51 (42.5%) from private schools. Form four students were 83 of which 45 (54.2%) were from public schools and 38 were (45.8%) from private schools. Table 1.1 summarizes the background characteristics of the respondents.

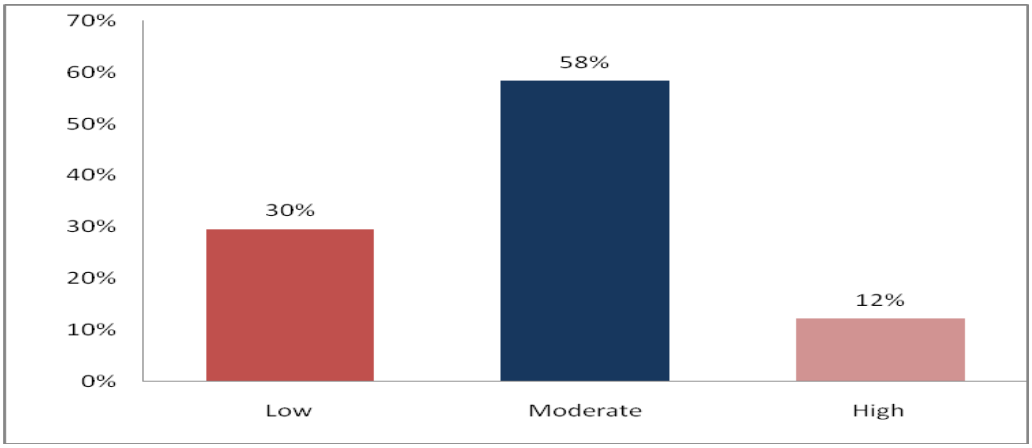
1.8 Level of Self-esteem among Adolescent Students in Secondary Schools

The first objective of the study was to determine the level of self-esteem among secondary school adolescents. The level of self-esteem was measured using the Rosenberg self-esteem scale. The average scores were computed for all 10 items, which were answered by using a 4-point Likert scale format, ranging from strongly agree to strongly disagree. To determine the level of self-esteem, frequencies were

run for all 10 items on the self-esteem scale among adolescent students in private and public secondary schools. The interpretation of the score ranged from 1–2.5 (Low self-esteem), 2.6–3.5 (Moderate self-esteem), and 3.6-4 (High self-esteem). Figure 1.1 summarises the results.

Figure 1:1

Respondents' Level of Self-Esteem in Percentages.



The results from Figure 1.1 indicate that the majority of the respondents were found to have a moderate level of self-esteem, followed by adolescents with low self-esteem, while only 12% of adolescent students were reported to have a high level of self-esteem. These results imply that the majority of secondary school adolescent students had a reasonably moderate level of self-esteem.

1.9 Relationship between Self-esteem and Sexual Risk-taking Behaviours among Adolescent in Secondary Schools

The second objective investigated the relationship between self-esteem and sexual risk-taking behaviours. In exploring the relationship between self-esteem and sexual risk-taking behaviours, self-esteem was treated as an independent variable while sexual risk-taking behaviours were treated as dependent variables under three categories, sex before 18 years, safe sex, and multiple partners. Table 1.1 presents the correlation coefficient of self-esteem and sexual risk-taking behaviours.

1.9.1 Table 1.1:

1.9.2 Correlation between Self-esteem and Sexual risk-taking Behaviours among Public and Private Schools

Sexual risk-taking behaviours	Correlation (r) Self esteem	Level of Significance	M	SD
Sex Debut (Initiation of sex <18 years)	0.081	0.066	1.368	0.429
Multiple Partners	0.033	0.470	1.529	0.614
Safe Sex	0.081	0.066	1.860	0.624

The results from Table 1.1 showed that there was a weak positive and non-significant relationship between self-esteem and initiation of sex before 18 years (r =.081, *p* value > 0.05) and between self-esteem and safe sex (r =.081, *p* value > 0.05). Lastly, the results revealed that there was a weak positive relationship between self-esteem and multiple partners (r =.033, *p* value .470). This result implies that an increase in adolescents' self-esteem was not associated with a decrease in adolescents' engagement in sexual and risk behaviours. However, the results reveal that an increase in self-esteem was to some degree associated with adolescents' less engaging in sexual and risk behaviours. In this case, the hypothesis that there is a statistically significant relationship between self-esteem and secondary school adolescents' sexual risk-taking behaviours was rejected and the null hypothesis was accepted.

Discussion

The results of the first objective indicate that the majority of the respondents were found to have a moderate level of self-esteem, followed by adolescents with low self-esteem, while only 12% of adolescent students were reported to have a high level of self-esteem. These results implied that the majority of secondary school adolescent students had a reasonably moderate level of self-esteem. The results of this study are similar to those of Kirangu and Chepchieng (2013) who found that the majority of the studied students had a moderate level of self-esteem of about 60%, students with moderate self-esteem formed (20%), and the last group was that of adolescents with low self-esteem of about 20%. In addition, they reported that students with high and moderate levels of self-esteem had good family care compared to those with low self-esteem who came from dysfunctional families. These results imply that family separation, parental divorce, and family quarrels contribute to the development of low self-esteem among adolescent students.

The results are also similar to those of Sharma and Jagdev (2012), who found that

the majority of adolescents had a moderate level of self-esteem. They reported that students with low self-esteem had a high academic stress leading to failure to perform well in their examinations compared to their counterparts. In the same vein, in a correlation study by Nikitha, Jose, and Valsaraj (2014) on academic stress and self-esteem among secondary students, it was found that the majority of the students' self-esteem had a moderate level of self-esteem. But 6.2% had low self-esteem, while 11.5% of students had high self-esteem. They concluded that the majority of students in secondary schools suffer from academic stress, and there is a strong relationship between self-esteem and academic performance ((r=.60, *p* value= .001). The implications of these results mean that if students perform poorly in class compared to others, their level of confidence is reduced, which, in turn, leads to a negative self-image that makes them feel like failures and losers. Consequently, it leads to low self-esteem.

On the other hand, some studies reported results that contradicted the results of the current study. For example, Chinawa et al. (2015) conducted a study on self-esteem among adolescents in Nigerian secondary schools and found that adolescent students in secondary schools had high self-esteem. They reported that the high level of self-esteem was attributed to factors such as a lower parental divorce rate and expressed feelings of higher competence by adolescents. Thus, adolescents' family relationships, either positive or negative, have an impact on their self-esteem development. Similarly, Singh and Bhatia (2012) found that 71% of the respondents had high self-esteem and 29% of them had low self-esteem. The results form Singh and Bhatia (2012) also showed that students with a high level of self-esteem (71%) belong to families with positive relations. The results indicated that family environment highly contributes to adolescents' self-esteem.

The discrepancies in the results between the current study and those of Chinawa et al. (2015) and Singh and Bhatia (2012) can be attributed to the fact that, public and private secondary schools involved in this study might have had students with similar levels of development in the area of self-esteem. In addition, it can also be attributed to the fact that the schools sampled for this study were from the same municipality. Another reason for discrepancies might be explained by the ecological factors where the child grew up which include children's early relationships with caregivers, peers, teachers at schools, friends, and family, whereby friends may help adolescents to develop positive self-image or bring them down (Santrock, 2010 Tynelius & Rasmussein, 2010; Walsh, 2015). Similarly, when the adolescents receive support and care, which is in line with feelings of adequacy in the family that works together and tries to boost each other up, it has a significant contribution to the healthy development of self-esteem. In addition, cognitive, biological, and physical development played a significant role in determining adolescents' self-esteem (Shaffer & Kipp, 2010).

1.10 Relationship between Self-esteem and Sexual Risk-taking Behaviours among Adolescent in Secondary Schools

The results from the second objective showed that there was a weak positive and non-significant relationship between self-esteem and initiation of sex before 18 years (r =.081, *p* value > 0.05) and between self-esteem and safe sex (r =.081, *p* value > 0.05). Lastly, the results revealed that there was a weak positive relationship between self-esteem and multiple partners (r =.033, *p* value .470). The results of this study are similar to the study conducted by Udoh et al. (2019) on the influence of self-esteem on sexual behaviours among adolescent students. The study revealed that there was no statistically significant relationship between self-esteem and adolescent students' sexual risk-taking behaviours, and that adolescents' involvement in sexual risk-taking behaviours is heavily influenced by poverty and family separation, which cause adolescents to feel emotional and social loneliness, leading to behaviours such as sex debut, having multiple partners, and engaging in unprotected sex. This is in line with the cross-sectional study conducted by Park, Young-Ho, Seon-Joo, Sooyeon, and HaeJeung (2016) on the relationship between self-esteem and overall health behaviours in Korean adolescents, which consistently found that self-esteem, had no statistically significant relationship with sexual risk-taking behaviours. The results from Park, et al. (2016) also revealed that the majority of adolescents who were found to have a moderate level of self-esteem were able to slightly adjust to personal challenges and school life and hence reduced their level of involvement in sexual risk-taking behaviours.

Moreover, a correlation study conducted by Chilisa et al. (2013) revealed that there was a weak statistically significant relationship between self-esteem and sexual risk-taking behaviours. The study pointed out that self-efficacy as opposed to self-esteem had the greatest contribution in helping adolescents not to get involved in sexual risk – taking behaviours. This implies that the change in student behaviour in schools is largely attributed to a sense of strong self-control, which results in better health and higher academic achievement for the students. Furthermore, the study conducted by Savi and Tagay (2017) found out that there was no relationship between self-esteem and adolescents' involvement in risk-taking sexual behaviours. It is also suggested that peer influence played a significant role in predicting sexual risk-taking behaviours in adolescents because they are valued and admired by their peer groups for engaging in those behaviours.

However, the results of this study are inconsistent with previous studies on the relationship between self-esteem and sexual risk-taking behaviours among secondary school adolescent students, which revealed a significant relationship between self – esteem and sexual risk-taking behaviours. (Jodon & Tripath, 2017; Kilonzo, 2012; O'chieng, 2013; O'Sullivan & Orr, 2011; Unis et al., 2015). The reason for the

inconsistency of results was due to the differences in methodological approaches used in different studies. For example, in the present study, the researchers used one scale to measure self-esteem and one scale to measure sexual risk-taking behaviours contrary to some previous studies such as Unis et al. (2015), which used basic self-esteem and an earning self-esteem scale to measure the level of self-esteem in adolescents. On the other hand, the current study used sexual risk-taking behaviours and a self-efficacy scale to measure risk taking behaviours to adolescent students. Again, the current study used correlation research design as opposed to previous studies such as (O'Chieng, 2013; Unis et al., 2015), which used cross sectional design to collect information. Perhaps these are the reasons for the disparities in results.

The inconsistency was attributed to the fact that self-esteem becomes high when parents and children sit together and discuss issues related to sexual risk-taking behaviours. This helps to boost adolescents' self-esteem, hence minimising the chance of students to engage in sexual risk-taking behaviours (Mercy 2014). When parents and teachers work together as a team, they help students to develop awareness of their purpose in life and reduce their involvement in sexual risk-taking behaviours. This is contrary to the Tanzanian context, where it is commonly believed that it is taboo to talk about sexual matters when you are a student (Jarome et al., 2017). This reason was assumed to influence the inconsistency of results from this study. Another reason for inconsistency may be due to the tools used for data collection.

The current study was based on a questionnaire exclusively administered to students. The questionnaire was self-completed by students as some of the questions focused on sensitive personal issues. It is probable that some of the respondents intentionally misreported due to feelings of shame about being honest to respond to sensitive issues like sexual behaviours which are culturally prohibited at a young age in the Tanzanian context. Also, the results could be attributed to the fact that the scales that have been used may not entirely capture the wide range of sexual risk-taking behaviours in the context of Tanzania. So, differences in the methodology used can be a major factor associated with inconsistencies in results between the current study and some previous studies.

Conclusion and Recommendation

Based on the results of this study, the following conclusions were made. Firstly, secondary schools' adolescent students aged 12-19 had moderate level of self-esteem. These results imply that something should be done so as to improve the level of self-esteem among adolescent students in secondary schools. For example, personal development programmes should be introduced in secondary schools based on how students can boost their self-esteem. Again, parents, caregivers and teachers should be informed on how they can increase the levels of self-esteem

among adolescents. This can be done by parents spending quality time with their adolescents and openly sharing issues related to sexuality. Secondly, the results of the present study revealed that there was no statistically significant relationship between self-esteem and sexual risk-taking behaviours among adolescent students in secondary schools. Thus, adolescent students' involvement in sexual risk-taking behaviours is determined by other factors such as peer pressure, poverty and attitude towards sex.

However, adolescence stage is a stage where majority of youth are sexually active and some of them engage in sexual risk behaviours. Thus, this study recommends the need for educational stake holders in Tanzania, including curriculum developers and policy makers to introduce self-esteem and moral development programmes and incorporate them in the school curriculum. These programmes should focus on cultivating students' awareness of avoidance of health risk behaviours, increasing students' self-esteem and self-confidence and helping them develop appropriate healthy behaviours in schools and home environments. The programmes should also focus on creating awareness on other factors associated with sexual risk-taking behaviours. This is significant because when students have high self-esteem and practise appropriate behaviours will not only help them not to engage in sexual risk-taking behaviours, but also increase academic performance in schools. This goes in line with the assessment of self-esteem and their influence on sexual risk-taking behaviours and how they affect students' academic performance.

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Academic Self-Efficacy as a Determinant of the Need for Cognition, Parental Involvement, and Extraversion among Secondary School Students in Oyo State, Nigeria

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Abstract

This study investigated the need for cognition, parental involvement, and extraversion as factors determining academic self-efficacy among secondary school students in Oyo State, Nigeria. It adopted a correlational type of the descriptive research design. The study used a total sample of 300 secondary school students who were chosen based on a multistage sampling technique. Data were collected by means of a questionnaire focusing on the following variables (Need for Cognition r=0.84; Parental Involvement r=0.83; Extraversion r=0.86; and Self-Efficacy r=0.87). Data were analysed using Pearson Product Moment Correlation Coefficient and Multiple Regression. The results revealed that the need for cognition (r=.804), and parental involvement (r=.788) had a strong positive correlation with academic self-efficacy while extraversion had a weak correlation with academic self-efficacy (r=-.203). Parental involvement was the most potent out of the predictor variables (β=.478), followed by the need for cognition (β=.365). Extraversion made a negative contribution to the predictor of academic self-efficacy (β=-.245). Regression analysis revealed that the three independent variables (need for cognition, parental involvement, and extraversion) jointly accounted for 55.2% (Adjusted R^2=.552) variation in the prediction of self-efficacy. The study recommends that school counsellors should counsel students on the need to develop higher academic self-efficacy in order to bring about excellent results in their academics.

Keywords: need for cognition, parental involvement, extraversion, academic self-efficacy

Introduction

Self-efficacy refers to one's belief in one's ability to succeed, particularly in certain situations or in the completion of specific activities. Self-efficacy is the most important determinant of academic performance at all levels of school. It is a learner's belief in his or her ability to carry out the behaviours required to achieve certain performance goals (Bandura, 1997). Bandura (1997) defines self-

efficacy as a person's belief in his or her capacity to perform properly in a given situation. This belief may or may not correctly reflect a person's ability. We judge achievement in educational settings in terms of academic success, such as when students pass a course. A gifted student with the ability to excel academically may have poor self-efficacy lowering his or her chances of academic success (Bandura, 1997Bahmanabadi & Baluchzade (2013) define self-efficacy as a person's belief in their ability to influence their behaviour, motivation, and social environment Through its influence on cognitive, emotional, and motivational intervening processes, self-efficacy can increase or degrade performance. As a result, the importance of self-efficacy in learning should not be overlooked. Bouffard-Bouchard et al. (1991) found that self-efficacy and cognitive abilities are independent of one another, and that self-efficacy influenced the learning environment for school-aged students and more self-efficacious students were able to perform at higher levels than those who were less self-efficacious, regardless of cognitive abilities.

The inclination for an individual to engage in and enjoy effortful cognitive endeavours is known as the need for cognition (NFC) (Cacioppo et al. 1996). Individuals with high NFC are more likely to try to make sense of (difficult) information on their own, actively acquire information, and think about and reflect on things, whereas those with low NFC are more likely to rely on others or external cues to provide information and the structure to make sense of it. The level of organisation provided in the secondary school and university learning environments is a significant difference. Students at university are supposed to be self-directed learners who manage their studies and tackle tough material. As a result, high NFC students may be more confident in their abilities to work independently and in their capacity to succeed in studies. Students' academic self-efficacy beliefs improve as a result of NFC (Elias & Loomis, 2002).). Academic self-efficacy can be defined as a student's confidence that he or she can succeed at specific tasks, such as memorizing pieces of knowledge from academic textbooks for a test or composing an essay to respond to a research question. This notion is generalised, in the sense that it is not tied to any particular field of study, and it can be used in a variety of school programmes. As a result, we used NFC as a personality trait that has a direct impact on academic self-efficacy.

Another key component that promotes students' academic self-efficacy is parental involvement. The home is the primary point of contact for students who want to improve their grades. Parents and other critical family members provide the student with early education and socialisation. Any student's first teacher is his or her parent (Adeyemo, 2007). The family provides the educational environment, and it is important to consider how the home and school interact to help students acquire academic self-efficacy and success. Students who have their parents involved in their schooling perform better academically and are less likely to drop

out (Adeyemo, 2007; Ajadi & Ademola, 2021).

Extraversion is the final variable in this study. Extraversion has long been considered one of the most important aspects of human nature. The Big five personality traits assessed by McCrae & Costa (1997) include Conscientiousness (C), Openness (O), Extraversion (E), Neuroticism (N), and Agreeableness (A). Extraversion has long been recognized as one of the highest order of human personality. Recently, educational psychologists, counselors and educational researchers alike have begun to show keen interest in the relationship between personality traits and students' academic self-efficacy, mostly to explain the level of students' academic self-efficacy based on the personality traits they possess (Oshokoya, & Omoteso, 2018). Rothpaut & Young (2007) also reported personality trait of extraversion having a more positive influence on intimacy self-efficacy than introversion personality trait.

Theoretical Framework

This study is guided by Bandura's Psychological Model of Behaviour, the Social Cognitive Theory (1977). Thetheory emphasizes that learning occurs in a social environment and mostly through observation. It was first established with an emphasis on the acquisition of social behaviours (Bandura, 1977). The idea has been used extensively by individuals interested in understanding classroom motivation, learning, and achievement in a variety of topics, including mental and physical health, career choice, athletics, organisational behaviour, and so on (Pajares, 1996). The on-going functioning of a person is the result of the constant interaction of cognitive, behavioural, and contextual elements. Factors in the academic environment, particularly reinforcements experienced by oneself and others, impact classroom learning (Bandura, 1977). Learning is mostly influenced by students' thoughts and self-perception, as well as their interactions with the classroom environment (Bandura, 2012).

Review of Related Literature

Various internal and external interacting factors influence self-efficacy beliefs, which are reflected in career-related outcome expectations and performance. Brown et al (1991) investigated ways of channelling self-efficacy beliefs toward good results that lead to the establishment and extension of career development studies that use contextual, problem-based, and community-based learning practices and encourage self-monitoring and assessment. Self-efficacy, on the other hand, has no bearing on students' professional ambitions. Brown et al. (1991) discovered that while both men and women tend to be overconfident when judging their level of confidence in their talents, undergraduate men were more overconfident, even when they were wrong. In his study, Adeyemi (2008) discovered a link between parental participation and academic self-efficacy, stating that a large impact of parental involvement on academic self-efficacy is best understood when it is

recognised that most parents have higher expectations for their children. Most parents want their children to succeed in life, and they will go to great lengths to ensure that they receive the necessary support that will give them the confidence to pursue their academic goals (Ajadi & Ademola, 2021). Academic self-efficacy was significantly positively correlated with authoritative parenting style, and it was a significant predictor of academic performance, according to Adeyemo & Adetona (2007), who studied the influence of parental involvement on academic self-efficacy of 264 undergraduates in Oyo State. Parents and caregivers provided experiences that have a varied impact on children's self-efficacy beginning in infancy. Self-efficacy is favourably influenced by home influences that help youngsters engage well with their environment (Bandura, 1977). The family is the primary source of self-efficacy, but the influences are reciprocal. Student's self-efficacy is aided by parents who provide an environment that encourages their curiosity and allows for mastery experiences. Children who engage in more exploratory activities as a result of their curiosity boost parental response.

Motlagh et al. (2011) thought that all students are equal, which is incorrect because different students should be recognised as having unique interests. Motivational orientations, cognitive-meta-cognitive skills, and resource management were investigated by Komarraju and Nadler (2013) to predict students' academic performance. Chowdhury & Shahabuddin (2011) explored how self-efficacy, motivation, and academic performance interact among students enrolled in an introductory marketing course in a private school in Bangladesh. The study demonstrated that there were statistically positive associations between self-efficacy and performance ($r = .289$), suggesting students with strong self-efficacy abilities did better than those with low self-efficacy. Academic self-efficacy, academic motivation, and academic self-concept are factors that influence secondary school student's academic achievement (Ogunmakin & Akomolafe, 2013). Neuroticism hurts academic performance and academic self-efficacy (Chamorro & Furnham, 2003). Extraversion is a personality attribute that has a positive impact on intimate self-efficacy compared to introversion (Rothpaut & Young, 2007). Honicke and Broadbent (2016) conducted a comprehensive review of the impact of self-efficacy on academic performance, incorporating research articles over the previous 12 years that focused on the relationship between academic self-efficacy and the academic performance of university students. Several researchers have found a positive association between the two primary characteristics of self-efficacy and academic success, according to the study.

Statement of the Problem

The appalling failure of students in public examinations is a serious concern in Nigeria's educational system. The West African Senior School Certificate Examination (WASSCE) results of the November/December over years were

recently termed as unsatisfactory and worrying by the Nigerian National Officer of the West African Examinations Council (WAEC). Many scholars have conducted various types of studies on factors that influence student achievement in senior secondary schools.. Based on previous research, little research has been done on the association between various characteristics, such as parental involvement, need for cognition, and extraversion, and students' academic self-efficacy. On this basis, the researcher intends to determine the impact of parental involvement, need for cognition, and extraversion on secondary school students' academic self-efficacy in Oyo State, Nigeria.

Purpose of the Study

The main purpose of this study was to examine the need for cognition, parental involvement and extraversion as determinants of students' academic self-efficacy among senior secondary schools in Oyo State, Nigeria. The objectives were to:

i. investigate the relationship between the need for cognition, parental involvement, and extraversion on students' self-efficacy in senior secondary schools in Oyo State, Nigeria
ii. determine the joint contribution of need for cognition, parental involvement, and extraversion on students' self-efficacy in senior secondary schools in Oyo State, Nigeria
iii. examine the relative contribution of need for cognition, parental involvement, and extraversion on students' self-efficacy in senior secondary schools in Oyo State, Nigeria.

Research Questions

i. What is the relationship between the independent variables (need for cognition, parental involvement, and extraversion) and the dependent variable (academic self-efficacy) among secondary school students?
ii. What is the joint contribution of the independent variable (need for cognition, parental involvement, and extraversion) and the dependent variable (academic self-efficacy) among secondary school students?
iii. What is the relative contribution of the independent variable (need for cognition, parental involvement, and extraversion) and the dependent variable (academic self-efficacy) among secondary school students?

Methodology

Research Design

To establish the relationship between the research variables and the prediction weights of the independent factors on the fluctuation of the dependent variable, this study used a correlational design. This design was chosen it fits the present study which focuses on the relationships between variables.

The population and Sample

Sample and Sampling Techniques

The population of this study comprised all public secondary school students in Oyo State, Nigeria. A stratified sampling strategy was used to select thirty (30) students from each of the ten (10) secondary schools. A total of 300 students were chosen as part of the sample for this study.

Research Instruments

The study's participants were asked to fill out a questionnaire with pertinent information. The questionnaire was divided into five sections, each of which tapped information based on the variables of interest identified. It was divided into five sections: Section A: Respondent demographics; Section B: Need for Cognition Questionnaire (r = 0.84); Section C: Parental Involvement Questionnaire (r = 0.83); Section D: Extraversion Questionnaire (r = 0.86); and Section E: Self-Efficacy Questionnaire (r = 0.87). Data were analysed using Pearson Product Moment Correlation Coefficient and Multiple Linear Regression in the Statistical Package for Social Science (SPSS) to answer the three research questions.

Findings

Research Question 1: What is the relationship between the independent variables (need for cognition, parental involvement, and extraversion) and the dependent variable (academic self-efficacy) among secondary school students? Data analysis employed a matrix of Pearson product-moment correlation coefficients, presented in Table 1 among the independent and dependent variables scores were calculated.

Table 1: *Descriptive Statistics and Inter-correlations among independent Variables and Students' Academic Self-Efficacy*

Variables	1	2	3	4
1.Academic Self-Efficacy	1.00			
2.Need for Cognition	.804**	1.00		
3.Parental Involvement	.788**	.658**	1.00	
4.Extraversion	– .203**	.022	.126*	1.00
Mean	44.35	40.55	56.32	27.43
SD	4.32	5.22	4.51	6.71

**Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (1-tailed)

Table 1 reveals the inter-correlation matrix between the independent variables (need for cognition, parental involvement, and extraversion) and the dependent variable (academic self-efficacy) among secondary school students. Need for

cognitive (r = .804, p<0.01) and parental involvement (r = .788, p<0.01) positively and significantly correlated with academic self-efficacy, while extraversion was negatively correlated with academic self-efficacy (r = – .203, p<0.01) among secondary school students. This implies that as independent variables (need for cognition, parental involvement, and extraversion) increase, the dependent variable (academic self-efficacy) also increases among the secondary school students.

Research Question 2: What is the joint contribution of independent variables (need for cognition, parental involvement, and extraversion) and the dependent variable (academic self-efficacy) among secondary school students? Data for this question were analysed using regression analysis. The results are presented in Table 2.

Table 2: *Regression Analysis showing Joint Contribution of the Variables on Students' Self-Efficacy*

R = .754

R Square R^2 = .560

Adjusted R Square = .552

Standard Error of the Estimate = 2.877

Model	Sum of Square	Df	Mean Square	F	Sig.
1 Regression	2962.009	3	981.227	130.358	.000[b]
Residual	2523.677	294	8.318		
Total	5485.686	297			

Table 2 reveals that the independent variables (need for cognition, parental involvement, and extraversion) together have a significant contribution to academic self-efficacy. The result yielded a coefficient regressions R = .754, multiple R^2 = .560 and Adjusted R^2 = .552. This implies that the need for cognition, parental involvement, and extraversion jointly accounted for 55.2% (Adjusted R^2 = .552). Table 2 also reveals that the need for cognition, parental involvement, and extraversion had a significant joint influence on academic self-efficacy among the secondary school students in Oyo State, Nigeria ($F_{(3,294)}$ = 130.358; P<.05).

Research Question 3: What is the relative contribution of the independent variables (need for cognition, parental involvement, and extraversion) and the dependent variable (academic self-efficacy) among secondary school students? Data for this question were analysed using multiple regression analysis. The results are presented in Table 3.

Table 3: *Multiple Regression showing the Relative Contribution of each of the Variables*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta (β)		
1 (Constant)	28.445	3.112		3.866	.000
Need for Cognition	.121	.027	.365	4.455	.000
Parental Involvement	.389	.058	.478	7.851	.000
Extraversion	– .123	.022	-.245	– 5.866	.000

Table 3 reveals the relative contribution of extraversion, need for cognition, and extraversion to academic self-efficacy among secondary school students in Oyo State, Nigeria. The table also shows that 2 out of the 3 predictor variables (parental involvement and need for cognition) are potent predictors of academic self-efficacy. The most potent among the factors was parental involvement ($\beta = .478$; $t = 7.851$; $p<.05$), followed by need for cognition ($\beta = .365$; $t = 4.455$; $p<.05$). Extraversion ($\beta = – .245$; $t = – 5.866$; $p<.05$) made negative contribution to the prediction of academic self-efficacy. This implies high academic self-efficacy is evidence of parental involvement and need for cognition.

Discussion of Findings

The association between the dependent variable (academic self-efficacy) and the independent variables (need for cognition, parental participation, and extraversion) among secondary school students has been examined. Academic self-efficacy has a significant relationship with the need for cognition and parental participation while extraversion has no relationship with academic self-efficacy, according to the findings. This means that as students' academic self-efficacy grows, so does their demand for cognition and parental participation. This finding also shows that parental involvement in a student's development helps the student's academic self-efficacy. This agrees with Omoteso (2010), who found that parental participation boosts students' academic self-efficacy, which is critical for academic achievement.

The findings demonstrated that independent variables (need for cognition, parental involvement, and extraversion) all have an impact on the dependent variable (academic self-efficacy). It demonstrates that when the independent variables (need for cognition, parental participation, and extraversion) are combined, they account for 55.2% of the variance in secondary school students' academic self-efficacy. This finding supports the necessity for students' academic self-efficacy to be predicted

by cognition toward school and learning, parental participation in their academics, and extraversion. The data also show that parents have an impact on their student's academic self-efficacy. The results support the findings of Akinfe, Olofinniyi, and Fashiku (2012), who observed that parental participation boosts academic self-efficacy. According to Carr (2013), parental participation has a considerable impact on students' academic self-efficacy. The findings of this study revealed that there was no link between extraversion and academic efficacy in students. This means that whether a student is an extrovert or an introvert has no bearing on their academic self-efficacy; also, the level of academic self-efficacy cannot be described only based on a student's personality attribute. Students who fall into the extraversion domain of personality may be more enthusiastic about their studies than students who fall into the introversion type. This is in keeping with Aremu (2009), who found no link between extraversion and academic self-efficacy in students.

The proportional impact of the independent factors (need for cognition, parental involvement, and extraversion) on the dependent variable (academic self-efficacy) has also been revealed, confirming that parental involvement and need for cognition predict academic self-efficacy better than extraversion. Parental involvement was the most powerful effect, followed by the demand for cognition, and finally, extraversion had only a negative impact on students' academic self-efficacy. This means that parental involvement and the desire for cognition are signs of academic self-efficacy. Academic self-efficacy is higher among students whose parents are involved in their education.

Conclusion

The impact of the need for cognition, parental involvement, and extraversion on students' academic self-efficacy in Oyo State was explored in this study. The results have revealed that academic self-efficacy has a positive relationship with the need for cognition, according to the data, and parental participation increased students' academic self-efficacy. Similarly, the combination of the demand for cognition, parental involvement, and extraversion was found to be relevant in the prediction of secondary school students' academic self-efficacy. Parental involvement was the most powerful predictor, followed by the demand for cognition, and finally, extraversion contributed only negatively to the prediction of students' academic self-efficacy.

Recommendations

Based on the findings of the study, the following are recommended:

i. Teachers and school counsellors should endeavour to incorporate moral talks into classroom teaching in order to promote good behaviour in the students that might go a long way in developing positive attitude in students.

ii. Teachers should avoid passing wrong comments and undue criticisms on students' academic performance openly, as this can kill the morale of the students and eventually lead to lack of confidence in students' abilities.

iii. School counsellors should counsel students (during extra-curricular activities) on the needs to develop higher academic self-efficacy other than just stopping at the moderate level, to bring about academic excellent results and help them in life time.

iv. Parents should ensure their children are given adequate support to enhance their academic achievement and not academic failure.

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Challenges of Inclusion of Primary School Pupils with Hearing Impairment in Physical Activities in Tanzania

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Abstract

Pupils with hearing impairment are not adequately included in physical activities in primary school globally but more so in the global South. This study was conducted in a selected primary school in Tanzania. It is a qualitative study that employed an embedded single case design to gain in-depth understanding of the study. The study was guided by Bronfenbrenner system theory (1979). The sample comprised thirty eight purposively selected participants. Data were collected through interview, documentary review, and observation schedule methods. The data were thematically analysed. Findings revealed specific and general challenges such as lack of sign language skills used during physical activity, poor aesthetic attributes, inaccessible physical activity facilities and equipment, stigmatization, unsafe play facilities and lack of physical activity programme. The results revealed that the school was insufficiently equipped for inclusion. Based on the findings of this study, it is recommended that to solve the revealed challenges schools should provide a conducive environment for inclusion of pupils with hearing impairment in physical activities.

***Keywords*:** *deaf, hearing impairment, inclusion, school environment*

Introduction

Inclusion of pupils with disability in physical activity refers to a range of modifications in content, approaches, structures and strategies to cover all children (UNESCO, 2005). The most common type of disability reported in Tanzania was difficulty in seeing, walking, hearing, remembering, self-care, and albinism (National Bureau of Statistics, 2014). The severity of a hearing impairment is measured using decibels (dB) categorized into *mild* hearing impairment with minimum sound that can be heard between 25 and 40 dB, *moderate* (40 and 70 dB), *severe* (70 and 95 dB) and *profound* hearing impairment where the minimum sound heard is 95 dB and over (World Health Organization, 2012). Hearing loss can be caused by a number of factors including; heredity (genetics), ageing, loud sound exposure, diseases

and infections, trauma (accidents), or ototoxic drugs (drugs and chemicals that are poisonous to auditory structures (Sohal, Moshy, Owibingire & Shuaibu, 2020). In this study the profound hearing impairment / Deaf pupils was investigated.

The World Health Organization (2018) declared that all pupils regardless of ability are supposed to be involved in physical activities 60 minutes or more on daily basis. Regular involvement in physical activities improves pupils' physiological and physical health (Ness, et al., 2007). Participation in physical activities also increases self-esteem, and reduces anxiety and stress (Barboza, Ramos, Abreu & Castro, 2019). According to the USA Center for Disease Control and Prevention (CDC, 2011) developing an overall physically active lifestyle at an early age may decrease one's chances of developing health-related problems.

In case of pupils with hearing impairment, physical activity also has other benefits, on social inclusion such as building friendships and enhancing social skills (Barboza et al., 2019). The inclusion of pupils with hearing impairment could address their balance deficit (Ebrahimi, Movallali, Jamshidi, Rahgozar & Haghgoo, 2017) with modified strategies for instruction of the activities and communication (Barboza et al., 2019) to make every pupil with hearing impairment enjoy the benefits associated with physical activity.

Schools are an important environment for promoting quality physical activities (Hills, Dengel & Lubans, 2015). Inclusion of pupils with hearing impairment in physical activity was affected by everything in their surrounding environment through interactions in each system as Bronfenbrenner's (1979) theory stipulated. The school has the potential to influence the physical activity behaviours of pupils through various opportunities that occur during recess periods and classroom physical activity breaks (Beets et al., 2016). Baquet, Aucouturier, Gamelin, and Berthoin (2018) study demonstrated that playground markings intervention had a positive effect on moderate and vigorous physical activity (MVPA).

Schools can help pupils with hearing impairment (Asogwa et al., 2020) meet health recommendations by creating an inclusive culture for physical activity health behaviour. Asogwa et al. ascertain that through sustained school engagement, hearing impaired students could overcome their postural deficiencies as they would have a greater opportunity to participate in healthy and planned physical activities during physical education classes. Therefore, school is essential for providing opportunity for physical activities for primary school pupils to be physically active throughout the school day. Studies have shown factors such as accessibility of facilities, opportunity for activity, weather, safety, and aesthetic attributes influence physical activity behaviour (Maddison et al., 2009). These factors require modification to fit the needs of pupils with hearing impairment.

Despite the importance of schools in providing the avenues for pupils to participate in physical activities, in Tanzania, there has been paucity of studies concerning challenges that hinder the inclusion of pupils with hearing impairment in physical activities. Schools may pose challenges that hinder the inclusion of pupils with hearing impairment. This raised the question, what challenges hinder the inclusion of pupils with hearing impairment in primary school? Why is the sign language skill insufficient? Why are the teachers and fellow pupils unable to communicate in sign language? What has the school done or will do to improve the situation? This study aimed at exploring the challenges that hinder the inclusion of pupils with hearing impairment in physical activities.

Research Methodology

This study was guided by interpretivism paradigm due to the nature of inclusion in physical activity as both implicit knowledge and a personal construct. The study utilised qualitative research approach informed by embedded single case study design (Yin, 2018). The data were collected from multiple sources of instruments such as interview, observation schedule and documentary review. The researcher collected in-depth and detailed information on challenges that hindered pupils with hearing impairment to participate in physical activities.

Study Area

The study was carried out in one inclusive primary school located in Dar es Salaam region, Tanzania. This school was established in 1992, later on a hearing impairment unit was started in 2004 with 38(15 boys, 23 girls) pupils with hearing impairment after being shifted from Lutherani Evangelical Church; handled with two special education teachers employed by the Comprehensive Community Based Rehabilitation Tanzania (CCBRT). During data collection the school had 71(33 boys, 38 girls) pupils with hearing impairment, 710(353 boys, 357 girls) hearing pupils. The school had 13(4 Males, 9 Female) teachers trained in Tanzania Sign Language with the following qualifications; 4(1 Male, 3 Female) certificates, 3(2 Male, 1 Female) diploma, and 6(1 Male, 5 Female) bachelor degree from Special Education Colleges in Tanzania. The school had one football court and limited physical activity equipment.

Participants

The participants were 38. They comprised 22 (9 girls & 13 boys) pupils with hearing impairment, the head teacher, the head of special education unit; the district special education officer, the district culture and sports education officer, 4 physical education teachers and 8 parents of pupils with hearing impairment. The selected pupils with hearing impairment were in grade five and six. They were selected because they had acquired Tanzania Sign Language for communication during

physical activity in primary school. The participants filled a consent form and the pupils with hearing impairment assented to participate in the study because they were minors. The participants were represented by a combination of English alphabet capital letters as follows; head teacher (HT), head of special needs education unit (HSNET), physical education teachers (PET1, PET2, PET3, & PET4), district special education officer (DSEO), district culture and sports education officer (DCSEO), parents (P1, P2 ... P8), and pupils with hearing impairment (PP1, PP2...PP22).

Data Collection

Data were collected through face-to-face interviews, document analysis, and observation schedule. Face-to-face interviews were conducted to all participants. Two sign language interpreters with a profession in hearing impairment used to sign and interpret the conversations between the researcher and pupils with hearing impairment. The time for each interview session lasted between 20 minutes to 60 minutes. The researcher audio and video taped the interviewed to capture sign language of the pupils with hearing impairment and the sign language interpreter at the same time to capture the challenges facing the inclusion of pupils with hearing impairment in physical activity in primary schools.

Observation schedule was based on physical activity outdoor facilities, physical activity equipment, and physical activity practice in school. During physical activity practices, the researcher identified the main features in the playing session in relation to the research questions. The researcher also observed the kind of instructional strategies that the teachers used, how the pupils with hearing impairment were included and determined the teacher's knowledge of the particular physical activity. After the recording process, the recorded video clips were stored in a compact disk. Interview with the teacher and the pupils with hearing impairment were conducted by the help of an interview guide.

> Furthermore, documents such as education policy, disability policy, and physical education school timetable, were analysed to examine the aspect of the inclusion of pupils with hearing impairment in physical activities.

Data Analysis

This study used thematic analysis procedures to analyse data that allowed for identifying, analysing and reporting patterns (themes) within data as they emerged (Yin, 2018) from the participants' perspectives during investigation through six steps of thematic analysis strategies (Creswell, 2009). Thematic analysis also allowed cross-case analysis and comparison of data from different case studies. Themes and sub-themes were extracted from participants' responses during the interview sessions, observation, and documents analysis. The emerging themes

were grouped into general and specific challenges that faced the inclusion of the pupils with hearing impairment in physical activities in schools.

First, the researcher transcribed raw data, read and re-read the raw data to obtain meaning or the initial idea from the participants. The collected data in the form of field notes were coded and organized into themes according to the sources (interviews, observation, and documents analysis). The second step involved conceptualising the required responses to the main question of the study to remain focused on the main themes. The third step involved creating codes by assigning those features that were used to identify and categorise the themes from the raw data into chunks or segments of text before bringing meaning to information. In the fourth step, the researcher established patterns among themes. The fifth step focused on descriptions and representation of themes, and in the sixth step the researcher extracted meaning driven from the themes based on her interpretations.

The two main themes emerged were specific and general challenges of inclusion in physical activities. The sub-themes were communication barrier to sign language used during physical activity, stigmatization, and poor aesthetics attributes, inaccessible physical activity and equipment for inclusion in physical activity, unsafe play facilities, and lack of physical activity programmes for inclusion of pupils with hearing impairment.

Findings and Discussion

The studied primary school revealed the significant challenges that hindered the inclusion of pupils with hearing impairment in physical activities. The identified challenges were specific and general barriers to pupils with hearing impairment. The specific barriers were physical education, teachers' lack of communication skills on instruction for curriculum modification or accommodation for inclusion, and stigmatization of the pupils with hearing impairment in physical activity. These findings are presented and discussed in relation to the previous studies in the area of inclusion of pupils with hearing impairment in physical activity in primary schools.

Specific Barriers for Inclusion of Pupils with Hearing Impairment in Physical Activity

Interviews with pupils with hearing impairment and physical education teachers revealed communication barriers and stigmatization of pupils with hearing impairment during physical activities. The two specific barriers can be explored as follows:

Communication Barrier: Sign Language used during Physical Activity

The title suggests that sign language is used during the physical activity, and sign language is the communication barrier. Findings from an interview with one of the pupils with hearing impairment revealed that there was sign language barrier between pupils with hearing impairment and other pupils and teachers without disabilities. The finding implies that during participation in physical activity there was communication break down due to lack of sign language skills. The findings suggest that without sign language skills amongst hearing pupils, the inclusion of pupils with hearing impairment could be difficult due to communication barriers. The interviewed pupil said that:

> I like to play with hearing pupils, but we fail to communicate. Other pupils, who have no hearing impairment do not understand sign language. So, when I use sign language to them they cannot get the message. Likewise, when they tell me about anything, I cannot understand them (PP_1).

The physical education teacher (PE) confirmed the communication barrier, due to insufficient sign language skills for physical activity tactics, which posed communication barriers with pupils with hearing impairment during physical activity. The PE teacher had this to say:

> At this school, majority of teachers and pupils lack sign language skills. This makes it hard to communicate between pupils and teachers and among pupils themselves. So, during Physical Education classes, pupils with hearing impairment do not actively participate, they just remain passive observers. (PET_1).

Also, the physical education (PE) teacher revealed the strategy that could help to ensure the inclusion of pupils with hearing impairment in physical activity in primary school. The physical education teacher had this to suggest:

> I think sign language for sports skills must be taught in this school. This will help to ensure that all pupils interact during physical activity and even during classroom instruction (PET_1).

The claim above indicates that there was a lack of sign language skills among hearing pupils and teachers in school. The findings suggest insufficient sign language skill limited communication during in physical activities. Consequently, physical education (PE) teachers failed to find solutions to the problem and to include the pupils with hearing impairment in a physical activity at school.

In the same vein, parents of the pupils with hearing impairment revealed that they were unable to communicate with pupils with hearing impairment because they had no knowledge of sign language to support their children. The finding indicated that parents of pupils with hearing impairment depended on the use of sign language interpreters to communicate with children with hearing impairment. Furthermore, the finding implies that communication barriers hindered the parents of pupils with hearing impairment to support the pupils with hearing impairment to participate in physical activities. One of the parents of pupils with hearing impairment commented:

> I am the mother of one of the pupils with hearing impairment. But, up to this time, I don't know the sign language exactly in order to support my child even during her participation in plays. I only depend on the assistance of sign language teacher and interpreter (P_2).

Furthermore, parents of pupils with hearing impairment revealed that pupils with hearing impairment were separated from hearing pupils in small groups among themselves and communicated using sign language during playing football. This implies that communication barrier led pupils with hearing impairment to be separated from pupils without hearing impairment. Such division was contrary to the aims of inclusion, which requires that all children regardless of their ability or disability participate together in physical activities. One of the parents of pupils with hearing impairment claimed:

> Pupils with hearing impairment understand each other when they communicate amongst themselves. But, they cannot understand instructions or explanation from hearing pupils, unless sign language is used so, what we do is to divide pupils; those with hearing impairment are grouped among themselves and those without hearing impairment also form their own groups. (P_1).

Also, the findings revealed the approach they used to include some of the pupils with hearing impairment in physical activities in a particular primary school. This implies that pupils with hearing impairment were taught and trained separate from the hearing pupils, then in some sessions they included some of the pupils in physical activities. One of the participants explained:

> To include the pupils with hearing impairment, first they require their physical activity lessons separately because of sign language issues; even though, later we included some of them. For instance, in football game we selected some pupils with hearing impairment and some hearing pupils to play together at the football pitch. This is how we included them. (HT).

These findings suggest that teachers and other hearing pupils should be trained for sign language skills to acquire knowledge on how to include pupils with hearing impairment in physical activity in primary school. One of the participants responded:

> The challenge for schools with pupils with hearing impairment is that there are few pupils with hearing impairment, therefore, in team games they are included with hearing pupils; to manage them becomes a problem during physical activities unless there are people with sign language knowledge to communicate…Sign language because if you are sports professional and you don't know the sign language it is a problem (HT).

The findings mean that when the communication barrier is solved, inclusion of pupils with hearing disability in physical activities will be real and every pupil will enjoy their rights to play and will have equal opportunity to physical activities (UNESCO, 1994). One of the participants suggested that:

> It's better for the school to introduce a programme for sign language to all teachers first, then all pupils and parents, because we usually lose instructions and support for these pupils with hearing impairment when at home or out from us teachers. The programme will be conducted for two hours within two working days. I think this will help (HT).

Generally, this study shows that insufficient sign language skills caused communication barrier to be one of the big challenges for inclusion of pupils with hearing impairment in physical activities. Teachers and fellow pupils were unable to communicate with pupils with hearing impairment because of lack of sign language skills. The sign language skills for proper communication require physical activity teachers to create sign language training programmes for others, like pupils with hearing impairment, other teachers, parents, head teachers, developers of physical activity instructional materials and educational policy makers to interact within and between the schools for its success for inclusion in physical activity.

These findings are in line with those of Barboza et al (2019) who declared the challenges need to be overcome by adapting physical education for deaf students. Lieberman (2011) described that communication between hearing and deaf people remains a major problem until more hearing people learn sign language. Martin, Shapiro, and Prokesova (2013) noted that children with hearing impairment may experience less time outside as a result of few friends who know sign language. Also, proper inclusion of pupils with hearing impairment relies on training on sign language to all (Remmel & Peters, 2009). Kurková, Válková and Scheetz (2011) suggested that if adaptations to communication (especially sign language) are made in these integrated settings, the ability of deaf athletes to participate in

physical activities settings will increase. This calls for the need to train parents, teachers and pupils on sign language.

Stigmatization of the Pupils with Disability in Physical Education

Findings from observation indicated that pupils with hearing impairment were playing amongst themselves in small groups without interacting with other pupils. Also, the respondents commented that pupils with hearing impairment struggled to interact with hearing peers during physical activities. One of the participants claimed:

> Pupils with hearing impairment experience a lot of stigmatization from their fellow students, who have no disability. Other pupils (without hearing impairment) perceive pupils with hearing impairment negatively. Some label them as stubborn pupils and as such they avoid interacting with them (PET_2).

Findings from physical education teachers imply that pupils with hearing impairment faced hard time from their counterparts, who had no disability. This indicates that pupils with hearing impairment were stigmatised, thus hindering their inclusion in physical activity with their fellow students, who had no disability. This was further illustrated with another PE teacher, who said:

> Usually pupils with hearing impairment are offensive and rude towards other pupils (without hearing impairment) during physical activities. This leads them to be avoided with hearing peers. That's why deaf pupils play alone (PET_1).

This study revealed that some teachers and pupils without hearing impairment had negative perception of pupils with hearing impairment. They perceived them as stubborn, rude and arrogant. The study from Kurková (2009) described the fears felt by pupils with hearing loss regarding misunderstanding in communication, delayed reactions when beginning a new activity and the fears surrounding the potential for breaking hearing aids when participating in contact sports in physical education classes. Also, Tsou, Li, Eichengreen, Frijns and Rieffe (2021) cautioned that deaf and hard of hearing children in less linguistically accessible environments may not have adequate knowledge for appropriately expressing negative emotions socially. The schools should address and avoid stigmatizing the pupils with hearing impairment through including them in physical activities.

General Barriers for Inclusion in Physical Activity

Interview and observation data provided detailed information on the challenges that hindered the inclusion of pupils in physical activity in schools. The participants

and physical activity playground explored four general barriers to inclusion in physical activity in schools. These are poor aesthetic attributes, inaccessible physical activity facilities and equipment, unsafe play facilities, and lack of physical activity programmes.

Poor Aesthetic Attributes for Inclusion in Physical Activity

The school environment includes the physical environment, instructional environment, student well-being, and discipline practices. Aesthetic attributes provide the school environment with appropriate design; play facilities and equipment for inclusion of pupils with hearing impairment. Observations of the sports facilities, equipment and supplies revealed the damaged balls. Also, the pupils with hearing impairment revealed the physical activity facilities and equipment used in school were not suitable for physical activities sessions. One of the participants claimed:

> The school lacks sport equipment and supplies such as balls and shoes. The balls are few and those few available are damaged. So, this makes it difficult for us to participate in physical activities during recess (PP_{11}).

Also, it was observed the presence of the damaged balls limited the opportunity for inclusion in football games. The schools should ensure availability of sport facilities, equipment and supplies. Furthermore, pupils were observed playing with their school uniforms. One of the pupils said:

> The school has neither balls nor jerseys, but the teacher teaches us while wearing school uniforms. So, at times we fail to participate in physical activities because we fear we may make our uniforms dirty (PP_{9}).

This study disclosed that the school lacked aesthetic attributes, it was observed that the football court was accessible but not clearly marked and signed for inclusion of pupils with hearing impairment to visually alert users. The finding implies that the physical activity environment was not aesthetic for the pupils to develop interests to participate in physical activities. The findings suggest that lack of aesthetic attributes discouraged pupils with hearing impairment to participate in physical activities. The playground provides a unique setting for children to engage in the play process; whether be it a traditional, an adventure or creative playground. The previous study realized that aesthetic attributes can be connected with all the aspects that make physical activity attractive, interesting and worthwhile (Tainio, 2019) including the sports equipment, facilities and attires. WHO (2018) dictates school environment to ensure physical activity design is consistent with the principles of safe, universal, age-friendly and equitable access with a priority being to reduce inequalities. Designed playgrounds are significantly safer because the

notorious unsafe features are excluded and full attention is paid to the installation of adequate safety surfaces. In some aspects of school buildings, their layout and furniture may influence children's physical activity and pedagogical approaches (Tainio, 2019). The physical activity environment in schools was not promising specifically and generally for inclusion due to a number of explored challenges (Kazungu, 2016). Bantham, Ross, Sebastião and Hall (2021) argued that access to facilities attractiveness of one's neighborhood plays an important role in whether or not people engage in physical activity.

Inaccessible Physical Activity Facilities & Equipment for Inclusion

Physical activity facilities and equipment are important in facilitating pupils' participation in physical activity in school. The findings indicated that there was one football court, which was destroyed with rain erosion and consisted of heaps of soil scattered. Therefore, it was not only unsuitable for pupils with hearing impairment but also to other pupils. This limited the pupils to participate in physical activity at school. In case of pupils with hearing impairment, the pitch had no marking, signs, posters, and other relevant graphic instructions for their inclusion in physical activities. This finding calls for the renovation of the physical activity facility and necessary design for pupils with hearing impairment. The above finding was supported by one parent, who reported the same that the football ground was not used for sports because it was damaged and full of holes:

> It has taken a long time without renovating the only pitch the school has. For more than three years now, the school football ground was destroyed by rain and measures to maintain it have not been taken. So, we advised the school management not to allow pupils with special needs to use that pitch as it can endanger them (P_3).

The findings portray that the physical activity environment was inaccessible and unsafe for conducting any physical activities. Because of this, it limited pupils with hearing impairment to participate in sports. The presence of holes and ditches in the playground could cause injury to pupils.

Another participant also lamented on the quality of sports facilities as he claimed:

> There is a serious problem regarding the quality of playgrounds and equipment. The pitches are always full of mud and holes during rainy season and during dry season the holes remain unturned. Moreover, there is no specific equipment to help pupils with disabilities such as those with hearing impairment. So, in most cases, pupils with hearing impairment just watch their fellow pupils with no disability playing (P_8).

The interview quotes above imply that there is a need to renovate the physical activity facilities and equipment. The available facilities in school are not user friendly for pupils with hearing impairment, other hearing pupils, and physical education (PE) teaching in general. The sports supplies such as flags, and playground sound proof were not designed to carter for the needs of pupils with hearing impairment. These findings are in agreement with the study conducted in Tanzania by Kazungu (2016) who disclosed that lack of enough and quality facilities and equipment in schools hamper the implementation of physical activity programmes in schools. With emphasis, Park, Zachary, Gittelsohn, Quinn, and Surkan (2020) revealed that levels of physical activity were strongly limited by a lack of recreational facilities in the neighborhood. Bantham et al (2021) argued that access to facilities (e.g., recreation/ fitness centres, parks) of one's neighborhood plays an important role in whether or not people use such spaces to engage in physical activity. Barboza et al (2019) concluded that the challenges facing pupils with hearing impairment need to be overcome. The finding calls for the school management to ensure that the playgrounds are marked, warning signs are indicated, and sign language symbols, pictures and posters are posted. This study suggests the school management to develop construction, renovation, and maintenance plan for physical activity facility and equipment that carter for inclusion of all pupils in school.

Unsafe Play Facilities for Inclusion in Physical Activity

Physical activity facilities are supposed to be secure to avoid interruptions from people in the community, which can likely endanger the pupils during physical activity session. However, it was observed that the physical activity facility was neither marked nor fenced. The findings imply that pupils with hearing impairment were prone to be injured as the sports facilities were unsafe for them to participate in physical activities. The sports facilities were not protected and there were no warning signs to prevent unwanted people from crossing. This gave opportunity for public use such as motor cyclists. Therefore, unsafe sports facility hindered the inclusion of pupils with hearing impairment in physical activities. The motor cyclists known as *boda-boda* were observed crossing in the sports facility that alert to endanger pupils with hearing impairment and damage the sports facility.

Unsafe play facilities limited inclusion in physical activities for both pupils with hearing impairment and other pupils in the studied primary school. Mabagala (2016) recommended on parents, the community, primary schools and society as a whole to create a conducive and safe environment for children to play in, which will help to develop their full potential in the context of Tanzania. Park et al (2020) revealed that levels of physical activity were strongly limited by neighborhood insecurity; they suggested that in an underserved neighborhood, individual barriers to physical activity were amplified by neighborhood-level factors like crime, socio-

economic inequalities. Bantham et al (2021) argued that access to facilities safety in one's neighborhood plays an important role in whether or not people engage in physical activity. Mabagala (2016) contended that an inclusive school should be safe and be built with collaborations of parents. The barriers that rose from interview, observation and documents analysis should be addressed to improve physical activity facilities and equipment management and its complications.

Lack of Physical Activity Programmes for Inclusion

In order for the pupils with hearing impairment to participate effectively in physical activities, the school management should have programmes that carter for the needs of all pupils. However, this study revealed that the surveyed school lacked a comprehensive programme of physical activity for inclusion of pupils with hearing impairment. This was reported by a physical education teacher, who had this to say:

> Inclusion is still a challenge. The school programmes are not inclusive. Although the school is inclusive, in practice the needs of pupils with disability including those with hearing impairment are not cared for. So, in many school activities children with hearing impairment remain observers, they don't get involved because the school programmes are not user friendly for them (PET_4).

Also, the primary school education curriculum revealed having two physical activity lessons to be conducted in the classroom; as well as outdoor activities which involved physical activity. This study implies that the school programme did not entail specific activities for pupils with hearing impairment. One of the documents indicated:

> The division of lessons in the classroom involved optional lessons, and out-of-class activities, which involve... sports and games. (Tanzania Institute of Education, 2019, pp. 19 & 20; DR-STT)

The study revealed that pupils with hearing impairment were participating in physical activities, despite having some challenges of having the proper football pitch used for football games and other sports activities at the selected primary school. One of the participants responded:

> Classes I and II, and III, and IV have a play time on Fridays. Teachers used to take them to the field; they compete with themselves and others. Some of them may be running, who is the first, the second; but there are also those playing football games although we are having challenges with the field (HT).

The findings call for supports from parents and teachers to empower the pupils with hearing impairment in physical activities. One of the participants suggested that:

> Teachers and parent should be front line to support and empower the pupils with hearing impairment in physical activities the same as how they support these pupils in other subjects, hence collaborations are needed for empowering these pupils with hearing impairment in the issues of physical activities (P1).

The study revealed the poor collaborations amongst parents, physical education teachers and the school physical activity programmes. This kept a boundary and restrictions of the inclusion during UMITASHUMTA competition seasons. The study calls for the school management to develop physical activities programme in order to carter for the needs of all children including those with hearing impairment. One of the participants claimed that:

> That's why pupils with hearing impairment lost their participation during UMITASHUMTA at the district level because the physical education teacher had no funding to accommodate to the rest of the competitions. Since the physical education teacher from the school was unable to be with our pupils with hearing impairment, they failed to communicate with other hearing physical education teachers in the camps because of lack of sign language skills. As a result, they ended at the district level back home (HT)

Bronfenbrenner's ecological system (1979) theory emphasizes the importance of interactions and interconnection between the system levels. The requirements for inclusion depend on the school management in collaboration with education policy directives (macrosystem) to allow physical activity programmes in schools through fulfilment of adapted physical activity teachers programmes to be effective (exosystem), and to upgrade physical education teachers for inclusive physical activities. This study revealed the lack of clear interaction between pupils with hearing impairment and others without hearing impairment.

Insufficient physical activity program in the studied primary school was identified. In this study, it was observed that the studied inclusive school had no specific programme designed to help pupils with hearing impairment to participate in physical activities. The findings concur with Chakraborty (2018) who opined that regular physical education programme cannot be sufficient to ensure that hearing impaired students are physically fit and have the fundamental motor skills required in participation in and enjoying various sports activities. Park et al (2020) realised that despite socio-economic inequalities within neighborhoods, participants showed resilience and made efforts to overcome social-environmental barriers to physical

activities. They also applied various coping strategies and received social support.

Conclusions and Recommendations

Based on the findings of this study, it can be concluded that in the context of Tanzania, inclusion in physical activity encounters general and specific challenges that hinder pupils with hearing impairment to participate and enjoy the benefits of inclusion. The findings revealed that challenges that existed at the studied school limited the inclusion of pupils with hearing impairment in physical activity. It is crucial to consider the accessibility of inclusion of pupils with hearing impairment in physical activity in primary schools.

To improve the inclusion of pupils with hearing impairment in physical activity in primary school, interactions amongst pupils with hearing impairment, physical education teachers, school management leaders and their parents is of paramount importance. Curriculum and education policy makers should realize the presence of specific and general physical activity challenges explored and consider them when improving the policies. This paper suggests that schools should allow open interaction between pupils with hearing impairment and different people in and outside the school environment. Also, a similar study should be conducted with a focus on physical activity intervention for pupils with hearing impairment in early childhood.

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Moderating Effect of Mental Health on the Association between Teachers' Stress and their Professional Attitude in Tanzania

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Abstract

Various reports show that there is an increase in teachers' stress and a decline in teachers' professional attitude in Tanzania. Few studies have examined the reasons for such situation. *This study examined the moderating effect of mental health on the association between teachers' level of stress and their professional attitude. The study used a selected sample of teachers from 12 randomly selected public primary schools of Tanzania (N = 173, Mean Age = 38.10 years, SD = 10.0). Using hierarchical regression moderation model, a significant association was found between teachers' professional attitude and their level of stress (β = – .21, p < .001), which was moderated by mental health (β = – .12, p < .029). The findings call for interventions to enhance teachers' wellbeing including the wellbeing of their mental health in order to improve their organizational and life performance in the country.*

Keywords: *mental health, professional attitude, teachers' stress, Tanzania*

Introduction

Numerous studies indicate that teachers in Sub-Sahara Africa work in stressful working environments (Moses et al., 2017; Sumra, 2005) characterized with motivation crisis (Bennell & Akyeampong, 2007) which poses a risk not only to their mental health and wellbeing but also to their organizations. Amongst the possible stressors are the attitudes that teachers hold and the commitment they have to the profession (Anangisye, 2009; Moses et al., 2017). Arguably, an increase in the negative attitude towards the job is associated with an increase in stress, which, in turn, affects their wellbeing in different aspects (including mental health), reduces their job efficiency and influences short lasting in the profession, turnover and attrition as well as job dissatisfaction (Hammen, 2005).

Teacher stress, professional attitude, and mental health in Tanzania

Researches indicate that teachers' attitude and commitment to their profession are at stake in Tanzania (Anangisye, 2009; Moses et al., 2017). For instance, in a

study by Sumra (2005), 51% of teachers in Tanzania said that they would leave the teaching job if they found another job, and 40% said that they would not advise their children to become teachers (Sumra, 2005). In the same vein, lack of positive professional attitude among teachers is reported by Moses *et al.* (2017) who found that pre-service teachers indicated that they had less commitment to the teaching profession. Amongst those with less commitment, the majority have entered the teaching profession because of lack of alternative career paths/choices or they found themselves compelled to pursue degree programmes in education just in order to get financial support (Moses et al., 2017). Apart from the low professional attitude indicated in studies, teachers in Tanzania face a motivation crisis (Bennell & Akyeampong, 2007; Sumra, 2005) and are reported to work in stressful working environments (Hecker et al., 2018). The effect of such conditions on teaching and quality of education is a topic worth investigating. However, a review of related literature shows that there is no study that has focused on the state and effect(s) of teachers' mental health in Tanzania. This is partly because of poor understanding of mental health and mental illness in African countries including Tanzania, and lack of recognition of mental health (Crabb et al., 2012; Hugo et al., 2003).

The association between mental health, attitude, and stress

Theoretically, individuals' attitudes affect and/or are associated with their behaviour and/or actions in different ways. For instance, negative attitudes may lead to heightened stress, anxiety, fear, dislike, and anger (Maio & Haddock, 2009). To the contrary, positive attitudes are associated with lower stress, satisfaction, creativity, and improved health and wellbeing. Positive attitudes lower stress and, in turn, improve one's wellbeing. It is argued that attitudes alone can predict a certain behaviour but the strength of its association with behaviour depends on a number of other factors (Maio & Haddock, 2009). The same case is found in the association between attitude and work-related behaviours such as work stress. It is anticipated that one's personal judgment of the working environment and the job may lead to job stress and burnout (Cooper et al., 2001). There is evidence indicating that individuals with positive attitudes not only take career challenges and stressors lightly but also are flexible and can easily adjust to challenging situations. As per the P-E fit model of stress, a lack of fit between personal characteristics (e.g., abilities, values) and the environment (e.g., demands, supplies) can lead to unmet individual needs or unmet job demands. These unmet needs or demands can result in strain (Cooper et al., 2001) which, in turn, may lead to depression and mental health problems in general (Hammen, 2005; Harvey et al., 2017). While the bidirectional association of attitude and mental health is still a debate, research shows that negative perception of an object leads to depression, and a depressed person may develop negative perception of objects in turn (Harvey et al., 2017).

Work stress, if experienced for a prolonged period of time, can result in a variety of mental and physical health issues that affect both the individual and the organization (Joyce et al., 2016; Knezevic et al., 2011). For instance, having an overwhelming workload with lack of time to rest can lead to physical exhaustion and stress-related illnesses (Chandola et al., 2006). Harvey et al. (2017) show that role ambiguity (when an employee lacks information about their role's responsibilities and objectives) and role conflict (when there are two or more opposing expectations about an employee's role) were significantly associated with increased depression symptoms and mental illness among employees. The effects of such mental health problems enhance the wellbeing of individual employees and organizations. For instance, Wittchen and Jacobi (2005) establish that the quality of an individual's life is about one standard deviation unit lower when they experience mental health disorders. In a study conducted on prospective teachers in India, mental health was found to have a significant impact on individuals' study habits, teaching attitudes and academic stress (Chandra & Reddy, 2014).

While there exist some research reports on (professional) attitude and stress, literature is silent about the association between teachers' professional attitude and their stress, the state of teachers' mental health in Tanzania and its effects on their professional life, including their attitude to the job and stress. Based on the P-E model of stress (Cooper et al., 2001), mental health is associated with both individuals' attitudes (Cooper et al., 2001; Hammen, 2005) and stress (Chandra & Reddy, 2014; Joyce et al., 2016). Such an association suggests that there is a moderating effect of mental health on the association between stress and attitude. As such, investigating the state and moderating effect of teachers' mental health on the association of their professional attitude and stress is important. The current study not only fills the gap in literature but also informs about the state of teachers' mental health in Tanzania and its effect on teachers' professional life, including their attitude to the job and stress. Furthermore, the moderating effect of mental health on the association between teachers' professional attitude and their stress opens up another area of intervention amidst the existing systemic and structural strategies to reduce teachers' stressful working environment in the country such as provision of in-service training provision, and reduction of the teacher-student ratio (United Republic of Tanzania, 2019). According to Sumra's (2005; 2014) argument, shortage of resources and lack of training are not the sole areas to be addressed in an attempt to improve education and the working and living conditions of teachers. Rather, there are other areas including teachers' working attitude and well-being, especially their mental health. Thus, this study fills the existing gaps in the literature on teachers' professional attitude, stress, and mental health, particularly in Tanzania. Specifically, this study examined the level of teacher's stress, professional attitude, and mental health, the association between teachers' professional attitude and their level of stress, and the state of mental health and its

effects on the association between teachers' professional attitude and their level of stress. This study was guided by one research question and two hypotheses which are presented below:

Research question

What is the level of teachers' stress, professional attitude, and mental health?

Hypotheses

1. There are significant associations between teachers' level of stress and their professional attitude, mental health and stress, as well as mental health and professional attitude.
2. Mental health significantly moderates the association between teachers' professional attitude and their level of stress.

Methodology

This study was part of a cluster randomized controlled design trial project to reduce violent disciplining of students in primary schools of Tanzania. The project was conducted from March to November 2019 in six regions randomly selected out of the 26 administrative regions of the country. In each region, two districts were randomly selected. One co-educational public primary day school with more than 40 students in the fifth and sixth grades from each selected district (and the municipalities in Dar es Salaam) were later randomly selected. A total of 12 public primary schools were therefore randomly selected. Later, all teachers working in the selected schools were introduced to the study in a brief meeting and invited to participate in the study. The selected schools had a total of 178 teachers. Out of that number, only 173 teachers (97% enrolment rate, mean age: 38.05 years, school range: 8-20) assented in writing, appeared for interviews, and their responses were used for analysis. Further details of the project design are presented elsewhere (Masath et al., 2020). Table **1** provides descriptive demographic information of the participants**.**

Structured interviews were used to collect information from the teachers in a one-on-one setting under supervision and guidance of an interviewer who had attended a four-day training on data assessment. Teachers' stress and burnout symptoms were measured using Copenhagen Burnout Inventory (CBI: Kristensen et al., 2005) and the scale had good reliability with Cronbach's alpha value of 89. Teachers' professional attitude was measured using the modified items of the Attitude towards Teaching Profession scale developed by Tezci and Terzi (2010) and the scale had Cronbach's alpha value of 87. Teachers' mental health was assessed using the Brief Symptom Inventory (BSI-18: Derogatis & Savitz, 2000) and the scale had Cronbach's alpha value of 86. All measures were piloted at one of the public

primary schools (not included in the study) prior to the actual collection of data for the study. Descriptive (frequency, percentages, mean, standard deviations, and range) and inferential (bivariate correlations and regression analysis) statistics were used in the analysis, which was done with IBM SPSS 27. Standardized coefficients of the regression model with *p*-value ≤.05 were considered significant. Following Cohen's (1992) effect size estimates, associations of ≥0.10, ≥0.30, and ≥0.50 were considered small, medium, and large effect sizes, respectively. The study was approved by the ethical committee of Bielefeld University and a research clearance was obtained from the University of Dar es Salaam, as well as regional and district authorities in Tanzania. All other ethical considerations were observed throughout the whole course of undertaking the study.

Table 1. *Descriptive Statistics of the Participants' Demographic Information (N = 173)*

Variable	
Age in years, *M* (*SD*)	38.05 (9.96)
Sex (% female)	53.71
Marital status, *n* (%)	
Single	35 (20.0)
Married and living together	113 (64.6)
Married but not living together	12 (6.9)
In a permanent relationship but not married	5 (2.9)
Separated/divorced	3 (1.7)
Widowed	5 (2.9)
Highest educational level [a], *n* (%)	
No teaching qualification	21 (12.0)
Teaching certificate	102 (58.3)
Diploma in teaching	33 (18.9)
Bachelor	17 (9.7)
Working experience in years, *M* (*SD*)	13.9 (9.8)
Working hours per week, *M* (*SD*)	45.46 (9.70)
Number of students per class, *M* (*SD*)	87.66 (36.41)
Additional employment, *n* (%)	
No	92 (52.6)

Another informal job	4 (2.3)
Own business	76 (43.4)
Household income in TSH per month, *n* (%)	
Below 500,000	91 (52.0)
500,000 – 950,000	54 (30.9)
More than 1,000,000	28 (16.1)
No. of people living in the household, *M* (*SD*)	4.30 (1.99)
Religious affiliation, *n* (%)	
Catholic	58 (33.1)
Protestant / Anglican	50 (28.6)
Muslim	47 (26.9)
Born again	15 (8.6)
Other	2 (1.1)
Ethnic groups, amount (range) [b]	41 (1-23)

Note. **[a] Teaching certificate: 11 years of formal schooling plus 2 years of teacher training, qualifies someone to teach in primary schools; Diploma in teaching: 13 years of primary and secondary education plus 2 years of teacher training, allows one to teach in primary and secondary (ordinary level) schools; Bachelor: 3 years at university or university college, allows one to teach in primary and secondary (ordinary and advanced levels) schools; [b] Ethnic groups, amount (range): total amount of ethnic groups in the sample, range of number of people per group.**

Findings and Discussion

The state of teachers' stress, professional attitude, and mental health

Teachers' total score on the attitude towards their teaching profession scale ranged from 98-164 (M = 136.52, SD = 14.609). The scores of <136.52 on the total professional attitude scale were considered to indicate negative attitudes among teachers, while scores of ≥136.52 on the total professional attitude scale were considered to indicate positive attitudes towards the teaching profession. Thus, 47.4% (n = 82/173) of the teachers were found having negative attitudes, and 52.6% (n = 91/173) had positive attitudes towards the profession. Specifically, teachers scored high on item 27 "I think I am a learned and qualified teacher" (M = 4.67, SD = .495) and scored low on item 20 "It makes me happy to think that I am a teacher" (M = 1.71, SD = .928). Table 2 presents descriptive results of teachers'

scores on items of the professional attitude scale. Teachers' total CBI scores were categorized into three groups: normal level of stress (group 1) with a total score <475; an elevated level of stress (group 2) with a total score ≥ 475; and a high level of stress (group 3) with a total score ≥950). The descriptive findings indicated that 3.0% (n = 5) of the teachers had a high level of stress, 29.0% (n = 49/173) had an elevated level of stress, and 68% (n = 119/173) had a normal level of stress. The descriptive results on teachers' scores for the items of the CBI are presented in Table 3. The findings of the global severity index (GSI) indicated that 61% (n = 95/173) of the teachers scored <average and 39% (n = 67/173) scored ≥ average (M = 8.56, SD = 7.333; Range 0-31). The higher scores of GSI represent the sum across the three subscales of the scale (depression, somatization, and anxiety) and indicate higher levels of psychological distress (Derogatis & Savitz, 2000). Specifically, teachers' mean scores for each of the subscales were (M = 2.99, SD = 3.073; range 0-16) for depression, (M = 3.56, SD = 3.310; range 0-14) for anxiety, and (M = 2.02, SD = 2.098; range 0-11) for somatization. Table 4 presents descriptive details of teachers' scores on the scale's items.

The study findings are in line with previous studies which report that there has been an increase in teachers' negative professional attitude (Anangisye, 2009; Moses et al., 2016, 2017; Sumra, 2005; Sumra & Katabaro, 2014) and a heightened level of stress among them (Sumra & Katabaro, 2014). Also, this study's findings indicated that there exist mental health problems among teachers. Teachers scored higher on the depression subscale of mental health. This is an indication that teachers working in a stressful environment are prone to mental health problems including depression. Implicitly, there is an alarming indicator that teachers' mental health is at stake in Tanzania, which may call for intervention. The reports of heightened stress and mental health challenges, as well as lower professional attitudes imply that despite the various systemic and structural efforts made in order to improve teachers' professional life and the quality of education, teachers are still stressed (Hecker et al., 2018; Sumra, 2005), demotivated, and their professional attitude is problematic (Anangisye, 2009; Bennell & Akyeampong, 2007). Teachers' low professional attitude and heightened stress can also be attributed to the fact that some of them entered the teaching profession out of their free will, not because it was their choice (Moses et al., 2017). The present study's findings are in line with the assumption of the P-E model of stress that there needs to be a balance between stress, attitude, and wellbeing (Cooper et al., 2001). Arguably, a stressed teacher with unmet professional and individual demands cannot be expected to have a positive attitude towards his/her profession and her/his wellbeing is compromised by challenges, including mental health challenges. This is supported by the bivariate correlation findings as presented in the next paragraph.

Table 2. *Descriptive Statistics of Teachers' Mean Attitude Score on the Teaching Profession Items*

Items		*M*	*SD*
1	The idea of becoming a teacher attracted me.	4.29	0.848
2	The teaching profession is boring for me. *	4.00	1.276
3	The teaching profession is appropriate for me.	4.37	0.815
4	If I had to choose a profession again, I would prefer becoming a teacher.	3.84	1.296
5	I think teaching is a suitable profession for me. *	1.76	0.950
6	I think teaching does not suit my lifestyle. *	3.71	1.298
7	I think teaching does not suit my personality. *	3.90	1.243
8	I regret to have chosen the teaching profession. *	4.21	1.090
9	I believe I am successful in the teaching profession.	3.92	1.118
10	I am pleased with having chosen the teaching profession.	4.17	0.973
11	I believe I can overcome the difficulties I have in the teaching profession.	4.12	0.916
12	I like to work as a teacher even under difficult conditions.	3.65	1.261
13	I feel sure of the requirements of the teaching profession.	4.34	0.575
14	I believe I have a special talent for teaching.	4.53	0.634
15	I think teaching is not a suitable profession for me. *	4.15	1.062
16	I think teaching provides me with opportunities to be productive and creative.	4.29	0.875
17	I believe I am a professional teacher.	4.51	0.652
18	The idea of teaching people things they do not know pleases me.	4.54	0.735
19	I feel attracted to people working as teachers.	4.53	0.624
20	It makes me happy to think that I am a teacher. *	1.71	0.928
21	I would not recommend teaching to those who are to choose a profession. *	3.91	1.202
22	I think I have much to do as a teacher.	4.35	0.680
23	The working conditions of the teaching profession attract me.	2.71	1.367
24	I consider professional development courses in teaching as important.	4.49	0.833
25	I like conversing with people working as teachers.	4.30	0.794

26	I talk about and discuss the issues of education, learning, teaching, and the teaching profession.	4.46	0.555
27	I think I am a learned and qualified teacher.	4.67	0.495
28	I believe teaching brings me a prestigious status in society.	4.47	0.751
29	I voluntarily chose the teaching profession.	4.08	1.115
30	I fear I have troubles in the teaching profession. *	3.80	1.196
31	I find it honourable to guide people's lives by working as a teacher.	4.30	0.794
32	I do not like talking about and discussing the issues of education, learning, teaching, and the teaching profession. *	4.27	1.018
33	I believe I am sufficiently esteemed by society for being a teacher.	4.15	1.084
34	The continuous nature of the teaching profession makes me feel secure.	4.01	1.056

Note. Items marked with asterisk (*) are reverse rated

Table 3. *Teachers' Report of Personal, Work – and Student-related Stress and Burnout Symptoms in the Past Month, n (%).*

In the past month, how often…	Never	Seldom	Sometimes	Often	Always
Personal stress					
…have you felt tired?	23 (13.3)	62 (35.8)	72 (41.6)	13 (7.5)	3 (1.7)
…have you been physically exhausted?	78 (45.1)	57 (32.9)	33 (19.1)	4 (2.3)	1 (0.6)
…have you been emotionally exhausted?	73 (42.2)	66 (38.2)	31 (17.9)	3 (1.7)	0 (0.0)
…have you thought "I can't take it anymore?"	118 (68.2)	37 (21.4)	14 (8.1)	4 (2.3)	0 (0.0)
…have you felt worn out?	113 (65.3)	42 (24.3)	16 (9.3)	2 (1.2)	0 (0.0)
…have you felt weak and susceptible to illness?	67 (38.7)	63 (36.4)	40 (23.1)	3 (1.7)	0 (0.0)
Work-related stress					
…have you felt worn out at the end of a working day?	54 (31.2)	71 (41.0)	36 (20.8)	12 (6.9)	0 (0.0)
…have you been exhausted in the morning at the thought of another day at work?	98 (56.6)	42 (24.3)	24 (13.9)	9 (5.2)	0 (0.0)

…have you felt that every working hour is tiring for you?	135 (78.0)	26 (15.0)	9 (5.2)	3 (1.7)	0 (0.0)
…have you had enough energy for family and friends during leisure time?	27 (15.6)	41 (23.7)	50 (28.9)	39 (22.5)	15 (8.7)
…has your work been emotionally exhausting?	75 (43.4)	60 (34.7)	27 (15.6)	7 (4.1)	4 (2.3)
…has your work frustrated you?	108 (62.4)	41 (23.7)	17 (9.8)	4 (2.3)	3 (1.7)
…have you felt burnt out because of your work?	52 (30.1)	65 (37.6)	42 (24.3)	13 (7.5)	1 (0.6)
Student-related stress					
…have you found it hard to work with students?	134 (77.5)	23 (13.3)	13 (7.5)	3 (1.7)	0 (0.0)
…has it drained your energy to work with students?	143 (82.7)	19 (11.0)	9 (5.2)	2 (1.2)	0 (0.0)
…have you found it frustrating to work with students?	142 (82.1)	21 (12.1)	6 (3.5)	2 (1.2)	2 (1.2)
…have you felt that you give more than you get back when you work with students?	61 (35.3)	43 (24.9)	33 (19.1)	23 (13.3)	13 (7.5)
…have you been tired of working with students?	85 (49.1)	54 (31.2)	25 (14.5)	8 (4.6)	1 (0.6)
…have you wondered how long you will be able to continue working with students?	62 (35.8)	42 (24.3)	35 (20.2)	22 (12.7)	12 (6.9)

Note. *n* = number of individuals report on each of the item response. Percentages may not total 100 due to rounding.

The association between teachers' stress, professional attitude, and mental health

Results from the bivariate correlation analysis indicated that teachers' professional attitude is significantly correlated with their level of stress ($r = -.264$, $p < .001$)

and mental health ($r = – .169$, $p < .027$), both indicating a small effect size. Similarly, a significant correlation was found between teachers' level of stress and their mental health ($r = .561$, $p < .001$), indicating a moderate effect size. The study findings suggest that a reduction in the level of teachers' professional attitude would lead to an increase in their level of stress and mental health, while an increase in teachers' level of stress would lead to an increase in mental health challenges. These findings were again confirmed using the hierarchical regression analysis model as presented in Table 5.

The study's findings on the associations between teachers' professional attitude, their level of stress, and mental health corroborate with those of other studies conducted elsewhere (e.g., Cooper et al., 2001; Hammen, 2005; Harvey et al., 2017). In Tanzania, the findings indicate that teachers' lower professional attitude significantly affects their professional life, may lead to stress and compromising their wellbeing, especially in terms of mental health. This is consistent with Hammen's (2005) argument that an individual with a positive attitude towards his/her job has less professional stress and good wellbeing, including mental health (Hammen, 2005). With 48% of teachers exhibiting negative professional attitudes, the likelihood that they have stress, and their wellbeing is at stake is high. In addition, this study's findings on the association between stress and mental health imply that the stressful working environment in Tanzania and elsewhere threatens teachers' professional and individual wellbeing, including the wellbeing of their mental health. This way, teachers' professional and organizational performance and life are at risk as other studies conducted elsewhere have also shown (Joyce et al., 2016; Knezevic et al., 2011). The findings further suggest that a stressed teacher with mental health problems is likely to be less functional, characterized with disciplinary issues, dissatisfied with his/her job, and short-lived in in the profession (Hammen, 2005). This is reflected in Sumra's (2005) report in which 51% of in-service teachers in Tanzania revealed that they would quit the teaching job if they found another job, and 40% affirmed that they would not advise their children to pursue a teaching career.

Table 4. *Teachers' Report of Mental Health in the Past Month, n (%).*

	How much has … bothered/affected you during the past month?	Not at all	A little bit (Once in a while)	Moderately (Sometimes)	Quite a bit (Often)	Extremely (Most of the time)
	Somatization					
1.	Faintness or dizziness	154(89.0)	16(9.2)	3(1.7)	-	-
4.	Pains in heart or chest	124(71.7)	30(17.3)	18(10.4)	1(.6)	-
7.	Nausea or upset stomach	100(57.8)	58(33.5)	11(6.4)	3(1.7)	1(.6)
10.	Trouble getting your breath	165(95.4)	8(4.6)	-	-	-
13.	Numbness or tingling in parts of your body	137(79.2)	28(16.2)	7(4.0)	1(.6)	-
16.	Feeling weak in parts of your body	91(52.6)	54(31.2)	27(15.6)	-	1(.6)
	Depression					
2.	Feeling no interest in things	91(52.6)	63(36.4)	15(8.7)	3(1.7)	1(.6)
5.	Feeling lonely	104(60.5)	37(21.5)	20(11.6)	9(5.2)	2(1.2)
8.	Feeling blue	79(45.7)	63(36.4)	26(15.0)	4(2.3)	1(.6)
11.	Feelings of worthlessness	137(79.2)	22(12.7)	13(7.5)	1(.6)	-
14.	Feeling hopeless about the future	109(63.0)	41(23.7)	18(10.4)	4(2.3)	1(.6)
17.	Thoughts of ending your life	158(91.3)	10(5.8)	2(1.2)	3(1.7)	-
	Anxiety					
3.	Nervousness or shakiness inside	105(60.7)	44(25.4)	19(11.0)	4(2.3)	1(.6)
6.	Feeling tense or keyed up	55(31.8)	57(32.9)	37(21.4)	19(11.0)	5(2.9)
9.	Suddenly feeling scared for no reason	132(76.3)	25(14.5)	14(8.1)	1(.6)	1(.6)
12.	Spells of terror or panic	116(67.1)	51(29.5)	5(2.9)	1(.6)	-
15.	Feeling so restless you couldn't sit still	101(58.4)	42(24.3)	22(12.7)	8(4.6)	-
18.	Feeling fearful	116(67.1)	43(24.9)	10(5.8)	3(1.7)	1(.6)

Note. *n* = number of individuals report on each of the item response. Percentages may not total 100 due to rounding.

The association and moderating effect of mental health on the association between teachers' stress and their professional attitude

Results from the hierarchical regression analysis (see Table 5) indicated that the model fit was not good (adj. $R^2 = .000$, F (4, 167) = 1.016, $p = .401$; $f^2 = .024$) in the first step as none of the covariates (location, age, sex, and working experience) was significantly associated with the dependent variable (stress). The model's independent variables explained 2% of the variability in teachers' stress. In the second step, teachers' professional attitude and mental health were added as independent and moderator variables respectively. The model got improved in terms of model fit (adj. $R^2 = .462$, F (6, 165) = 25.446, $\Delta R^2 = .457$, $p < .001$; $f^2 = .694$) and explained 48% of the variability in teachers' stress. Teachers' professional attitude and mental health were found to be associated with their level of stress. In the third step, the interaction variable (teachers' professional attitude **X** mental health) was added in the model. A slightly significant change in the model fit was found (adj. $R^2 = .474$, F (7, 164) = 23.016, $\Delta R^2 = .015$, $p < .001$; $f^2 = .984$) with 50% contribution of the variability in teachers' stress.

The findings confirm the study's second hypothesis in relation to the moderating effect of mental health on the association between teachers' stress and their professional attitude. The findings are also in line with the P-E fit model of stress (Cooper et al., 2001). The findings imply that teachers' mental health is important for healthy professional life. This is in line with the argument that the future of work depends on employees' wellbeing, including the wellbeing of their mental health (Meister, 2021). Thus, unless teachers' wellbeing (including the wellbeing of their mental health) is improved in Tanzania, their level of stress and professional attitude will constantly remain at risk. The study findings have implications for health policies to ensure mental health services are offered to teachers in Tanzania and other places where the teaching profession is characterised with stressful working environment and teachers hold negative professional attitude (Anangisye, 2009; Bennell & Akyeampong, 2007).

Table 5. *Hierarchical Linear Regression Analysis Moderating the Association of Teachers' Stress Level with their Professional Attitude and Mental Health*

Predictor	**Stress**				
	B	SE	*β*	*t*	*p*
Step 1[a]					
Location	-0.012	0.023	-0.042	-0.516	0.606
Sex	-0.167	0.164	-0.083	-1.018	0.310
Age	-0.019	0.025	-0.192	-0.787	0.432

Job experience	0.007	0.025	0.064	0.260	0.795
Step 2[b]					
Location	0.006	0.017	0.021	0.354	0.724
Sex	0.036	0.122	0.018	0.295	0.768
Age	-0.021	0.018	-0.214	-1.189	0.236
Job experience	0.018	0.018	0.180	0.990	0.324
Professional attitude (IV)	**-0.226**	**0.058**	**-0.226***	**-3.880**	**0.000**
Mental health (MV)	**0.612**	**0.059**	**0.611***	**10.332**	**0.000**
Step 3[c]					
Location	0.001	0.017	0.003	0.051	0.959
Sex	0.015	0.121	0.008	0.128	0.898
Age	-0.020	0.018	-0.195	-1.098	0.274
Job experience	0.016	0.018	0.160	0.889	0.375
IV	**-0.214**	**0.058**	**-0.214**	**-3.701**	**0.000**
MV	**0.601**	**0.059**	**0.600**	**10.229**	**0.000**
Interaction (IV x MV)	**-0.123**	**0.056**	**-0.125**	**-2.205**	**0.029**

Note. N = 173, *B* = unstandardized regression weight, SE = standard error, β = standardized regression weight, t test statistics, IV = independent variable, MV = moderator variable, *$p < .05$

[a]Test statistics: $\Delta R^2 = .024$, F (4, 167) = 1.016, $p = .401$, $f^2 = .024$
[b]Test statistics: $\Delta R^2 = .457$, F (6, 165) = 25.446, $p < .001$, $f^2 = .926$
[c]Test statistics: $\Delta R^2 = .015$, F (7, 164) = 23.016, $p < .001$, $f^2 = .984$

Conclusions and Recommendations

The findings of this study indicate that teachers have a high level of stress, a high level of mental health challenges, and an alarmingly low professional attitude in Tanzania. Furthermore, the study findings confirm the hypothesis that teachers' professional attitude is significantly associated with stress and mental health, while mental health is significantly associated with stress. Also, the study findings confirmed the hypothesis that mental health moderates the association between teachers' stress and their professional attitude. The study findings not only expound our understanding of the state of teacher's stress and professional attitude in Tanzania, but also make a unique contribution to the existing research-based knowledge about the association between stress, attitude, and mental health.

It also uncovers the existing gap in literature on teachers' mental health and its implications on their professional life in Tanzania. Generally, the study findings unfold the existing association between stress, attitude, and mental health in a country where teachers have low professional attitude and heightened stress. As such, the findings imply that unless teachers' mental health is improved, their professional life and organizational performance will remain at risk (Knezevic et al., 2011). Thus, the existing intervention strategies to eliminate systemic and structural stressors for promoting quality education in Tanzania should also be aimed at enhancing teachers' wellbeing (including their mental wellbeing) in order to improve teachers' life as individuals and the performance of the organizations (schools) they work for. Ultimately, this will help to attain the envisaged quality of education in the country. In addition, mental health services should be made readily available for teachers since teaching is one of the most stressing professions.

This study has some strengths that are worth noting here. First, this study is the first of its kind as it links teachers' stress, their professional attitude, and mental health. Second, the study drew its findings on the state of teachers' mental health and on the moderating effects of mental health on the association of teachers' professional attitude and stress in Tanzania from a sample of teachers selected from six regions representing different administrative zones, as well as social, economic, and ethnic backgrounds. However, it has some limitations since its findings on the associations between stress, professional attitude and mental health were drawn from cross-sectional data. As such, it is hard to draw a generalizable conclusion on the cause-effect relationship between its variables. So, longitudinal studies investigating such associations are recommended. Also, the study findings cannot rule out the possible existence of bidirectional associations between variables. Future studies may need to eliminate this knowledge controversy.

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Career Preparation of Primary School Pupils in Tanzania

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Abstract

This study employed a survey design under quantitative research approach, to explore subject preferences, career aspirations, and sources of career information of 287 primary school pupils. A questionnaire with open-ended and closed questions was employed to collect data. The study found that out of ten taught subjects, pupils ranked Kiswahili as their most preferred subject and English as the least preferred subject. In terms of career paths, a total of nine careers were listed for pupils to select the most preferred one. It was revealed that most of the pupils aspired to become medical doctors, teachers, soldiers, and engineers. These pupils' career aspirations emerged to be gender-stereotyped, with only a few girls showing a keen interest in science and engineering fields. Moreover, the pupils identified their parents as the most trusted sources of information on careers. Based on these findings, career preferences appear to unfold during childhood with a range of factors such as parents, teachers and the quality of career information received through socialisation nurturing and shaping these choices.

Keywords: *career aspirations, primary pupils subject preferences, sources of career information.*

Introduction

Preparing for one's career is one of momentous life events that begin in the early years of people's lives (Azean, 2013; Chambers et al., 2018; Maree, 2018). This life lifelong process involves career exploration, career awareness, vocational expectations and aspirations, and vocational interests (Hartung et al., 2008). Empirical literature affirms that students globally usually contend with a career choice dilemma (Amani, 2016; Chambers et al., 2018). In particular, the choice of careers, subjects and associated fields of study tend to pose challenge to students both in school and college due to lack of career education and orientation (Amani, 2016; Amani, 2018 Mabula, 2012). Moreover, factors such as educational

attainment, aptitude, self-concept, context in which they live, significant others such as parents and relatives, career knowledge, economic factors, and attitudes tend to influence individuals preparing for their future careers (Chambers et al., 2018 ;Wang & Degoll, 2017;).

In fact, research consistently shows that the formation and development of children's attitudes emerge during their early years (Chambers et al., 2018; Hughes, Mann, Barnes, Baldauf & Mc Keown, 2016). Consequently, these formative experiences shape their future behaviour and intentions in diverse contexts (Ajzein, 1991). Specifically, studies have shown that children's interest and ability to study either arts or science-based subjects in the early schooling years might impact their choice of majors in higher education (Su et al., 2009; Wang & Degol. 2017). Impliedly, young children with unfavourable attitude towards either arts or science subjects tend to be less inclined to pursue one or the other when they grow up. Su et al. (2009) and Wang and Degol (2017) further contended that when individuals are keen on and confident in studying maths and science, they can pursue science, technology, engineering and mathematics (STEM) occupations.

The formation of career-orienting attitudes also depends on information and/or support and approval one receives from significant others and knowledge gained from experiencing objects, products or behaviours (Ajzein, 1991). According to Baloch and Shah (2014), most information students use in deciding on a career path stems from their childhood socialising with their parents or guardians, friends and teachers, and from the mass media in their later life stages. In other words, children's positive or negative evaluation of jobs available also depend on the value their parents, significant others and the community attach to particular jobs. In essence, young people's evaluation of a reasonable career to pursue (or not for 'people like me') is based on perceived rewards such as salary and prestige (Chambers et al., 2018.*p*.3). Implicitly, the decisions young people make at school are informed by the occupational information arising from social interactions, which impact significantly not only on their lives but also on their further education and training.

In Tanzania, the current formal education and training comprises pre-primary, primary, secondary, and tertiary education (Ministry of Education and Vocational Training [MoEVT], 2014). The first two years of pre-primary education usually requires no promotion examination. Thereafter, pupils progress to the primary education cycle (Standard I-VII) where they sit for the terminal national examinations. At the end of this cycle, they can qualify to secondary education, vocational training or the world of work depending on their performance in these examinations. As such, primary school pupils ought to be aware of their interests and abilities for informed career preparations to materialise. In fact, primary education cultivates foundational skills that prepare children for a smooth transition from basic to higher education

for them to acquire life-skills and, eventually, move into a desired career. Attaining this goal requires a relevant curriculum that gives children an opportunity to assess their ability in addition to identifying and developing their talents and interests. In this regard, Schultheiss and Stead (2004) argue that elementary school covers developmental tasks associated with career development. At this level, children develop concepts regarding occupations and gain a meaningful understanding of potential career paths (Schultheiss & Stead, 2004).

When children go to school, they develop some assumptions about themselves and the world of work, which emerge through their day-to-day experiences and socialisation. Some assumptions about jobs are stereotypically along gender lines (Fabes et al., 2014). Thus, the school should expose any biased beliefs and stereotypes to help students evaluate their educational strengths and weaknesses and make informed choices regarding what the world of work can offer them. Since the perceived assumptions are usually transitional, students' self-awareness in their early years matters as it can enable them to define and focus on a career they want to pursue. After all, the motivation for students to learn is usually when they are confident and have a clear understanding of how their education might help them in their post-school lives (Chambers et al., 2018). On the other hand, helping young children to develop a keen interest in certain jobs does not necessarily mean they must choose a specific career; what such cultivated interest does is give them an understanding of what type of opportunities are available in the world of work.

In 1997, the Tanzania government through the then Ministry of Education and Culture (MoEC) issued guidelines that integrated both career guidance and counselling services for schools through counselling units. These directives came into being because exploring career opportunities depends on getting valid and relevant career information, which requires emphasis on counselling and career development in schools. These guidelines made it mandatory for all secondary schools and colleges to establish counselling units as essential components of their education provision (MoEC, 1997). The goal was to help students in solving both psychological and educational related issues, including subject choice and career aspirations (MoEC, 1997). Paradoxically, the government directive was silent on a similar arrangement for primary schools. This gap in career guidance and counselling at lower levels of Tanzania's education deprived children of opportunities for building a foundation for their aspirations on subject and career choice for future career development. In fact, primary school pupils also need guidance, for example, on career choice to develop their self-knowledge, attitudes, decision-making skills, self-confidence and lifelong learning, and help them identify a suitable career (Schultheiss & Stead, 2004). This study which focuses on career preparation among primary school pupils was conducted with a view to recommending practical and policy actions that could foster career awareness from childhood.

Theoretical Framework

This study draws on Linda Gottfredson's (1981) Theory of Circumscription and Compromise. The theory posits that the process of occupational aspirations begins at the pre-school and continues through college level. It outlines career development process from childhood and emphasises how children narrow their career exploratory behaviour through perceived internal and external factors and cultural expectations related to gender roles. The theory also describes the process through which occupational aspirations get sacrificed when they are unimplementable as desired. According to Gottfredson's theory, individuals build a mental map of different occupations through stereotypes, especially with significant others around them. Although people manage to form a detailed image of occupations, they tend to consider their similarities and differences based on three main dimensions: gender, level of work, and field of work (Gottfredson, 1981). These dimensions help to organise and unify people's image of various occupations. Gottfredson (1981) asserts that occupational choice starts when children at early ages eliminate some occupations that conflict with their self-concept. Children assess how compatible these occupations are with their image of whom they would like to be and how much effort they can invest in entering them. Usually, they will highly value occupations that are compatible with their sense of self and dislike those failing such a fit. As such, career exploration entails both elimination and retention of occupational choices. This circumscription process suggests four developmental stages for explaining career choice: Orientation to size and power; orientation to gender roles; orientation to social roles; and orientation to internal, unique self.

The first stage of *orientation to size and power* occurs at ages 3 – 5 (Gottfredson, 1981). Children become aware that adults have roles in the world. They realise that eventually they would become adults and assume the adult roles. What shapes choices at this stage are magical and egocentric thinking with little distinction between the past, present and future (Gottfredson, 1981, p. 588). The second stage of *Orientation to gender roles* occurs at ages 6-8 when children become concerned about fitting into the existing career-related gender stereotypes (Gottfredson, 1981). They become aware of job roles and begin to assign them to particular gender. At this stage, children believe that men and women are different based on their socialisation and begin differentiating occupations along gender lines—either male or female occupational roles (Gottfredson, 1981). As such, they would start treating jobs not matching with their gender identity as unacceptable.

The third stage of *orientation to social values* occurs at ages 9-13 when children are increasingly concerned about external expectations and the definition of the self (Gottfredson, 1981). At this stage, they pay greater attention to societal valuation and judgment as well as the prestige attached to a career. Having already encountered a wide range of job roles and having developed a capacity capable of making more abstract distinctions, the children can classify jobs based on social

status (income, education level, lifestyle and gender). At this stage, they will have begun to identify their place in the social world, which helps them narrow down their career preference relative to their perceived status (Gottfredson, 1981).

The definitive stage of *orientation to internal, unique self* occurs at age 14+. At this stage, young people have recourse to more complex factors, such as personality, interests, values, ability and gender, which also allow them to exclude career options failing to fit their self-image and identify an appropriate field of work (Gottfredson, 1981). In fact, children can evaluate accurately the extent to which their mental abilities can constrain or support their occupational aspirations and ambitions. Ideally, this theory presumes that the elimination of occupations occurs when a career choice is incongruent with one's gender, ability, interests and values. As explained earlier, the *circumscription* process describes the images people develop of certain occupations and themselves, and how they combine them to determine acceptable occupational alternatives through the four stages. In reality, however, the jobs people desire might sometimes differ significantly from those jobs readily available to them. The theory presents a mechanism through which people can sacrifice roles they find to be more compatible with their self-concept in favour of jobs that are easily accessible based on their reality and prevailing circumstances. This *compromise* or *changing of one's goals to accommodate uncontrollable circumstances* is a crucial process (Gottfredson, 1981). Indeed, this process allows people to adjust accordingly their career aspirations or preferences based on job accessibility (Gottfredson, 1981). As a result, people can sacrifice occupational compatibility based on interests, job level, or the femininity/masculinity of the job (Gottfredson, 1981). Gottfredson (1981, p.549) further contends that the typical pattern of compromise can entail sacrificing vocational interests first, job level second, and gender third and last because the latter is central to one's self-concept and constitutes an important cue regarding one's social identity. These compromises continue until most people end up in careers they wanted. This theory is relevant to this study since pupils' career aspirations at the primary school level tend to be determined by how interested they are in a career, what values they attach to it based on societal evaluation of the career (how significant others appraise various occupations), and what gender beliefs pupils hold regarding occupational roles. These factors can shape pupils' career preferences. However, the application of the compromise process was not relevant to this study, as it only explains the change in career preference based on the three dimensions of interests, job level and gender, which was not the focus of this inquiry and is not particularly relevant at the primary education.

Justification for this Study

Apparently, literature affirms that career choice is a crucial but complex process

whose seeds start germinating from childhood and matures and stabilises as a person grows up. Indeed, for pupils to make informed career decisions they need proper career guidance, education and information from their early schooling years. Even though this was evident in literature, not much research has been conducted in the context of Tanzania on what careers pupils at the primary school are keen on pursuing and what influences their choices. Part of this neglect appears to be attributable to the society generally being dismissive of this education level as inconsequential in determining one's career choice. This oversight could also partly explain why in 1997, the country issued guidelines that integrated both career guidance and counselling services for schools through counselling units but at the secondary and higher level. Paradoxically, for many Tanzanian children primary education was the terminal level. Even empirical studies surveyed are more informative about career development in secondary and higher education than about the lower levels. Studies by Amani and Mkumbo (2014) and Amani (2016, 2018) dealt with factors such as parental expectations, occupation, education and socio-economic status, self-interest, attitude, career knowledge, and career self-efficacy that influence the career preferences and intentions of university students. Other studies have been on the influence of gender stereotype on career choice (Lugumira, 2010); personality and career choice (Cosmas, 2012); effect of gender and parental education on career choice (Matoo, 2013); and on self-efficacy and contextual factors affecting the selection of Arts and Science streams (Kinyota, 2013). Thus, a paucity of knowledge on what primary school pupils want to do in the future, how their gender might influence their career aspirations, and what constitutes their sources of career information in the context of Tanzania inspired the design of this study. The study was guided by three objectives, which were to:

i. identify subject preference and career aspirations of Standard VII pupils,
ii. examine the differences in career aspirations between girls and boys, and
iii. determine the most trusted source of career information for Standard VII pupils.

Methodology

The study adopted a survey design to investigate the career aspirations of primary school children in Tanzania and sources of occupation information for them. The survey provided an opportunity to establish the degree of confidence obtained from generalising the findings due to randomisation of the sample (Cohen, Manion, & Morison, 2011). The sample of this research constituted Standard VII pupils drawn from 10 surveyed primary schools which were randomly selected from five districts in the urban settings of Kibaha (Coast Zone), Moshi Urban (North Zone), Lindi (South Zone), Dodoma (Central Zone), and Kigoma Ujiji (West Zone). The districts were purposively selected from five administrative zones to

ensure representativeness. The urban setting provided greater socialisation for the pupils' knowledge of various careers than in rural settings, hence their selection over the rural areas. Standard VII pupils were selected because they were in the final year of primary education in Tanzania. Based on their terminal examination performance, pupils would progress to either secondary or vocational education. As pupils move from primary school to the next level of education, they need to be aware of the careers available for them to explore suitable ones and make an informed decision.

Super's (1957) career development theory stipulates that the growth stage (0-14 years) is characterised by the development of children's self-concept, interests and attitudes towards the world of work. Moreover, according to Schultheiss and Stead (2004), elementary school years encompass tasks associated with career development as pupils gain a greater understanding of occupations and what career to pursue. Both Super (1957) and Schultheiss and Stead (2004) provide a basis and justification for studying the career aspirations of primary school children in the context of Tanzania.

Prior to conducting the study, research clearance was sought from the Vice Chancellor of the University of Dar es Salaam, who is legally mandated to provide research permits for members of academic staff and students. The research clearance letter introduced the researcher to the Regional Administrative Secretary (RAS) who permitted the researcher to proceed to the District Administrative Secretary who further permitted the researcher to access primary schools which were sampled for the study. After establishing the sample size, a written informed consent was sought from the parents of pupils who participated in the study. The pupils whose parents gave such consent were further orally requested to participate in the study. Subsequently, 287 out of 300 pupils participated in the study by filling out the questionnaire. Prior to administering the questionnaire, the respondents were informed of the purpose of the study. The questionnaire was written in Kiswahili language and contained both open-ended and closed-ended questions. The research tool was developed based on the existing literature and career development theories. The questionnaire gathered background information such as age and gender of the respondents, district and school where the respondent attended. It also collected data on subject preferences, future career aspirations, and justifications, sources of career information and the most trusted source of career information. Data were analysed descriptively using the Statistical Package for Social Sciences (SPSS Version 21), with frequencies and percentages presented in charts and tables. The answers in the completed questionnaire were entered into SPSS, coded using numbers, which ensured that no-one would know the identity of a respondent. Prior to data analysis, the questions were translated into English by the researcher.

Anonymity and confidentiality were maintained throughout the data collection and writing up process.

Findings and Discussion

Subject Preferences of Primary School Pupils

About 287 out of 300 Standard VII pupils (Male=133; Female =154) participated in the survey by filling out the questionnaire with both closed – and open-ended questions. Thirteen incomplete questionnaires were omitted during data cleaning, which still resulted in a high response rate of 95.7 percent. Their age range was 11-16 years. The first objective of the study was to identify pupils' most favourite subject from among a list of subjects taught in their class. Out of 10 listed subjects taught in Standard VII, the pupils showed interest in eight subjects in the following order: Kiswahili, Geography, Civics, Sports and Personality, Science, Mathematics, Vocational skills, and English. Science emerged as the 5th most popular subject whereas Mathematics was ranked 6th and English ranked last. The low rating for English as a subject could be attributable to the study having conducted in Kiswahili medium schools that teach English language just as a subject from Standard III onwards. Less than 25 percent of the pupils liked History, ICT and Vocational skills. In other words, the pupils were not motivated enough to learn these subjects despite their being part of the primary education curriculum.

Regarding gender, the results indicate that the number of girls who rated Kiswahili as their most favourite subject was nine times more than that of boys. The results in Figure 1 show that three-quarters of the boys liked studying Science, Vocational skills and Mathematics as opposed to only half the number of girls. The results further show that both girls (66%) and boys (65.3%) almost equally liked Civics and English. These results have three major implications. First, most of the pupils preferred Arts subjects to Science subjects. Second, most of them were less interested in the English Language than other subjects. Third, pupils' interest in subjects varied in terms of gender, with more boys being more interested in studying Science, Mathematics and Vocational skills than girls. Open-ended questions indicated five related reasons which account for the pupils' preferences for Kiswahili, Civics, and Sports and Personality. These reasons included*: "Because it is my national language;" Kiswahili is simple."* Other two extracts from open questions read: "*Because I want to play soccer;" "My teacher teaches well."* Another extract read*: Because I like Civics.* Based on the circumscription theory which guided this study, pupils appeared to attach their preferences to different subjects because of what they strongly believed they would become in future (career goals), perceived simplicity of the subject, interest in the subject matter and the level of their understanding

in that subject (ability to learn). Specifically, based on the *orientation to internal, unique self* (age 14+) stage, children develop the ability to not only define their personality, interests and ability but also exclude options that do not fit their self-image and interest and identify an appropriate field of work (Gottfredson, 1981). In this regard, it emerged that pupils' preference for certain subjects has been associated with various internal and external factors.

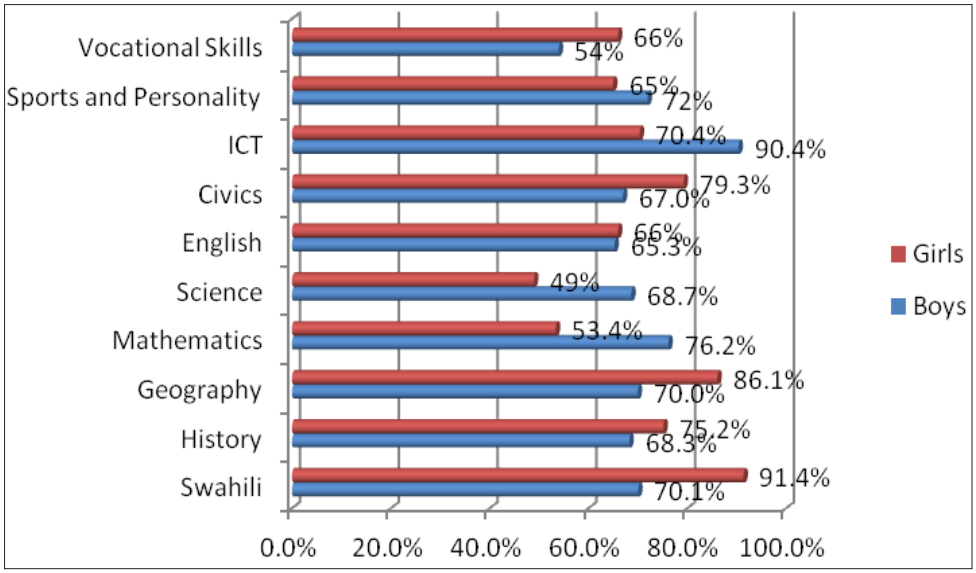

Figure 1: Pupils' Interest in School Subject

The findings show further that pupils ranked Kiswahili as their most preferred subject. Particular interest in the Kiswahili subject could partly be explained by its being the medium of instruction and the national language in Tanzania. Yet, Kihwele (2014) also found that secondary school students enjoyed studying Kiswahili compared to other subjects even though at this level the language of instruction shifts to English across the board. In the Kihwele's study, the students ranked Mathematics as the most difficult subject, followed by Physics and Chemistry whereas arts subjects were the least in terms of level of difficulty. Other studies demonstrated that individual and school-based factors can significantly influence students to develop an interest in studying a certain subject. For example, Kinyota (2013) reported that pupils' self-efficacy, their career knowledge, academic performance, gender and school contextual factors affect the selection of subjects in Tanzania's secondary schools. Evidence from empirical literature shows that students strive to learn different subjects, which are taught differently by teachers with varied pedagogical competences and in different school learning environment. As such, learning interest largely depends on the quality of the teaching and learning environment. The pupils provided explanations for ranking some subjects higher than others,

which can be clustered under four factors, namely: Perceived simplicity of the subject (*Because Kiswahili is simple);* future career goals (*Because I like playing soccer when I grow up); ability to understand the subject matter (My teacher teaches well); and interest in the subject (I like Civics).*

Career Aspirations of Standard VII Pupils

To examine the career aspirations of Standard VII pupils, the respondents were asked to tick from several career options pertaining to what they wanted to be when they grew up. The results in Figure 2 show that most of the pupils aspired to become medical doctors (44.6%), followed by teachers (17.4%), soldiers (12.5%) and engineers (10.1%). Less than 10 percent of the respondents wanted to be bankers, entrepreneurs, soccer players or lawyers. Furthermore, the results indicate that 1.4 percent of the respondents were uncertain about what they wanted to be when they grew up. In other words, they were still undecided about their future career interest and prospects. The analysis of the open-ended questions reveals three more careers were preferred by the pupils: being a police officer, judge, or journalist. Knowledge of school subject preference and career aspirations is vital for three practical reasons. First, it influences students' educational goals, academic performance, and future career planning (Linderman, 2010). Second, it helps counsellors and educators to plan for individualised and age-appropriate instructional and motivational programmes that are responsive to specific developmental needs of the pupils (Linderman, 2010). Third, it informs policymakers and educators on how best to support and facilitate smooth transition from school to further education and the labour market (Despina et al., 2013). As such, it is vital to motivate pupils to learn and build interest in varied subjects effectively for wider choices and plans of their future education and careers.

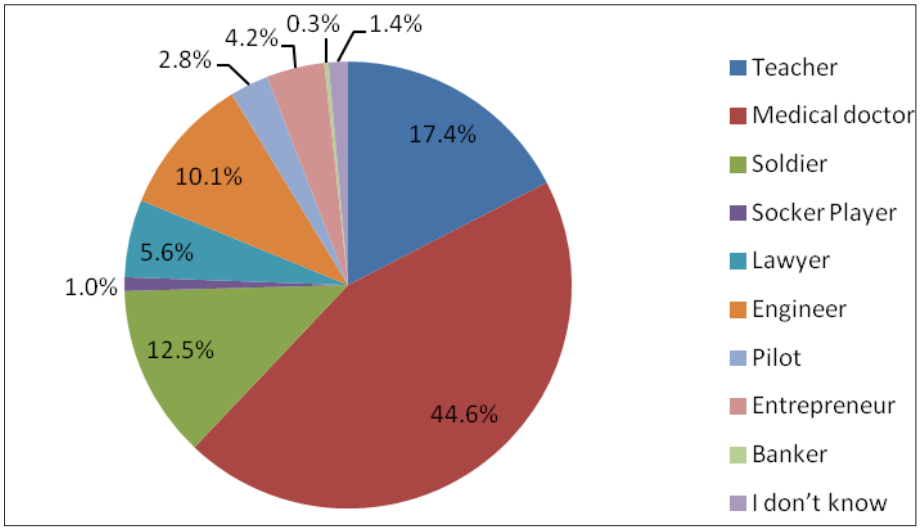

Figure 2: Career aspirations of standard VII pupils

Career Aspirations by Gender

Career aspirations by gender were analysed to determine gender differences in career interest and implications. The results in Figure 3 show that more female pupils aspire to become teachers (82%), medical doctors (60.9%), lawyers (87.5%) and bankers (100%) than their male counterparts. Moreover, Figure 3 illustrates that most of male pupils showed more interest in a science-based career paths than their female counterparts. Most boys desired to be engineers (74.2%) and pilots (87.5%) whereas less than 30 percent of the girls preferred those careers. Impliedly, the career preferences of Standard VII pupils are gender-based, with few females who particularly desire to enter the fields of science and engineering. Several explanations emerge from this study and supported by previous literature which provide an understanding of the factors accounting for gendered career preferences. For example, results from open-ended items show that girls desired more to become doctors: "*I like to help people who are sick, have better health"; "I like to be like my mother"; "I like to be like other doctors in the hospitals";* "*Because doctors are good people they help us get out of diseases".* On the other hand, boys explained why they aspired to engage in engineering field: "*I like driving an aeroplane*"; "*I like to learn how to build roads and big houses*". From these anecdotes from both genders, one could surmise that girls were more inclined towards people-oriented or caring professions and were inspired by their mothers whereas boys' preferences were determined by role models in the field and desire to work with things.

In this regard, the study findings corroborate the research of Wang and Degol (2017), and Chambers et al. (2018), who reported that many women preferred careers in medicine and social sciences than in STEM. The study findings are also consistent with the circumscription theory particularly on the aspect of o*rientation to gender roles stage,* which asserts that children in early years (ages 6-8) begin to form several beliefs about men and women, including awareness of their socially-engineered gender roles and the likelihood that they would start treating occupations in terms of stereotypical appropriateness for their respective gender. These acquired beliefs tend to affect their career aspirations as children begin to identify with either a male or a female occupational role (Gottfredson, 1981).

Other explanations for variations in genderised career preferences between boys and girls, which are most cited in the literature include socio-cultural factors, interactions with peers and innate ability (see, for example, Mutekwe, Modiba, & Mophaso, 2011; Wang & Degol, 2017). For example, Mutekwe et al. (2011) found that cultural beliefs about gender tended to bias individuals' perceptions of their ability to perform various tasks, including career-related ones. Zacharia (2008) also found that longstanding and die-hard stereotypes and prejudices among Kurya clans shaped their children's career choices and those of young people generally

in their community in Tanzania. In fact, historical stereotypical expectations regarding work have a more negative impact on female than male pupils because their career expectations tend to be lower than those of the latter (Mutekwe et al., 2011). Consequently, this gender orientation might lead to differences between female and male pupils in terms of their self-judgement and confidence, which ultimately tend to affect varyingly their career preferences and attainment.

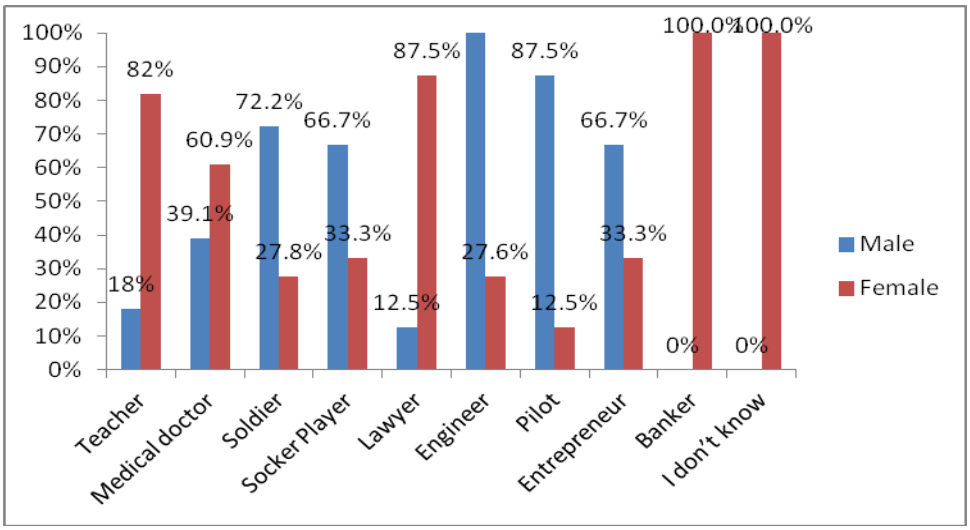

Figure 3: Career aspirations by gender

Sources of Career Information

The study also identified the sources of career information for the pupils, which they indicated from several options. The leading source of career information emerged to be the television (38.7%), followed by teachers (19.5%), parents (15.7%), the radio (15%) and guardians (8.4%). The least sources for career-based information indicated by pupils were newspapers and books (3%), as Figure 4 illustrates:

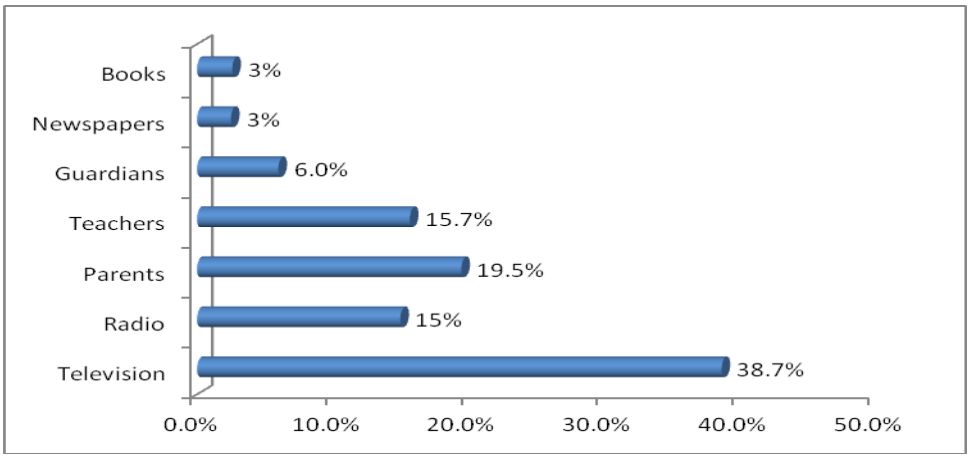

Figure 4: Sources of career information

Similarly, further analysis across districts (see Table 1) revealed that television was the foremost source of career information based on the primary school pupils' ranking. Television bombarded them with information relating to jobs. Television allowed them to learn about and inspired them with various role models depicted in diverse types of work. Next to television were parents and teachers. The results indicate that except for Lindi district, a respectable number of pupils in all the districts indicated that their parents were their primary source of career-based information. In addition, except for Kigoma district (3%), most of the pupils in all the districts indicated that teachers played a critical role in giving them career-related information. Also, 3% of pupils from Moshi district reported books to be sources of career-based information. This analysis renders credence to three implications. First, little has been documented about career information in Tanzania. Second, children do not have a culture of reading. Third, there were variations across districts regarding the roles perceived by teachers and parents in terms of disseminating career information to the students. A further analysis to determine the degree of trust in the listed sources of career information revealed that, out of the seven sources of career information, parents were the most trusted source (73.8%), followed by teachers (20.6%), relatives (4.2%) and the radio (1.4%).

Table1: *Sources of Career Information across Districts*

Districts	Radio	Television	Newspaper	Relatives	Parents	Teachers	Books	Total
Moshi DC	12.0%	42.4%	0%	14.0%	15.0%	13.6%	3%	100%
Kigoma Urban	23.1%	46.2%	1%	9.6%	17.3%	3%	0%	100%
Kibaha DC	11.7%	45.0%	3.3%	8.3%	19%	12.7%	0%	100%
Dodoma Urban	18.8%	27.1%	6.2%	0.0%	27.1%	20.8%	0%	100%
Lindi DC	20.5%	48.1%	4.9%	4.9%	10.9%	10.7%	0%	100%

Literature has consistently shown that for people to make an informed career decision, the availability of proper career information is critical (Chambers et al., 2018; Mabula, 2012; Zacharia, 2008). Relevant career information helps learners to make long-term study plans to prepare themselves for their future careers. The findings of this research corroborate with Chambers et al. (2018) whose multi-country survey found that parents and extended family members were the most

influential sources of career information. Other sources influencing children's career knowledge, according to Chambers et al.'s (2018) study, were television and the radio. Zacharia's (2008) study supports this study's findings on the roles the mass media and significant others, including parents and teachers, play in influencing Kuria males' intention to join the army in Tanzania. In this regard, Mabula (2012) also revealed that career knowledge contributed to the choice of subjects among A-level students in Tanzania. Mabula's analysis was based on information from focus group discussion which further revealed that the career knowledge of pupils in government schools, particularly when selecting their A-level subjects, had been influenced by social factors and parental advice as well as that of significant others. Thus, the role of parents in shaping students' career decisions and educational attainment is largely underpinned by various researchers. Families do not only have a significant role to play in children's career decision-making, but also in supporting their learning to ensure they realise their educational and career aspirations. Due to the significant role they play coupled with the trust children have in them, parents should value their role by supporting fully and caring for their children in addition to providing them with relevant career information to enlighten them further on the world of work.

Conclusions and Recommendations

In congruence with Gottfredson's theory, it is apparent that individuals' career aspirations start germinating from childhood with various sources of influences and knowledge accounting for such development. Also, consistent with the orientation and social valuation stage of the Gottfredson's theory, the Standard VII pupils' subject preferences and future career aspirations were gender-based, suggesting that the pupils from their young ages developed gender-based type of work and subject preferences. Furthermore, the theory used in this study is supportive of how the pupils' self-interest and beliefs in their ability to study and or succeed in a specific career path shaped their school subject preference and career aspirations. Through interest and perceived ability, the pupils are positioned to begin considering careers worth pursuing based on their life prospects. This orientation is in line with the internal unique self-stage under the Compromise and Circumscription theory which proffers that learners start developing a greater sense of self, hence develop a higher-level awareness of their abilities and interests as they relate to career aspirations. In other words, proper career and educational guidance at lower levels of education is crucial in enabling pupils to define their long-term education and career plans. Even though career education remains imperative, the role of parents and teachers in educating children on matters relating to careers cannot be over-emphasized.

The study findings and conclusion support the following recommendations. First, parents and teachers should develop strategies for cultivating children's

self-confidence and positive self-evaluation from childhood to ensure that both boys and girls maximise their potential in terms of tapping into career prospects regardless of their socio-economic status, gender and background. Doing so would enable them to feel confident enough to pursue careers of their interest. Second, teachers should adopt a gender-responsive approach to gender stereotyping effect on career aspirations and gender-biased beliefs of boys and girls. Third, drawing on successful role models, teachers and counsellors should disseminate proper career information to enable pupils explore careers thoroughly and make informed choices. Indeed, pupils need to see a clear connection between what they study in primary school and possible careers available to them when they grow up to influence their choice of subjects in secondary school that, in turn, have implications for further education and career prospects. At the policy level, there is a need to ensure that the school curriculum tallies with real life demands of the world of work.

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Instructional Supervision Practices in Tanzanian Public Pre-primary Classes: Head Teachers and Pre-primary Teachers' Perspectives

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Abstract

The study aimed to find out teachers' perspectives about school-based instructional supervision practices for improving teaching skills among pre-primary teachers. Qualitative approach was used with a case study design. Data were obtained from sixteen participants using interview and documentary review. Thematic data analysis process was used. The study unveiled that head teachers' instructional supervision practices were not effectively done. Head teachers were lacking appropriate supervision skills for pre-primary classes. Conversely, pre-primary teachers wanted supervisors to conduct pre and post instructional supervision discussion. Besides, there were no formal arrangements for teachers to learn new teaching strategies. The study suggests that instructional supervision process should be in a collaborative way on a regular basis. This could be achieved through mentoring, coaching, teaming, clinical supervision and professional growth plans. It is recommended that head teachers should be trained regularly for effective supervision of pre-primary curriculum.

***Keywords*:** *collaborative practices, instructional supervision, pre-primary education, teaching skills*

Introduction

The urge for education quality improvement in the 21st century makes it imperative for countries, Tanzania among them, to constantly strive for education reforms and innovations across various education levels including pre-primary education. Decentralizing education is one of the major reforms that place school leadership into the limelight of being responsible for improving quality of education by empowering teachers through school-based instructional supervision practices. Although studies have shown that instructional supervision has a positive influence in enhancing teaching skills (Comighud, Futalan & Cordevilla, 2020; Darling-Hammond, Hyler &Gardner, 2017; Dewodo, Dzakpasu & Agbetorwoka, 2020; Glanz, 2018; Zepeda & Ponticell, 2018), lack of time and relevant skills to implement instructional supervision practices hinders head teachers from conducting their instructional roles (Marishane, 2011).

In this regard, pre-primary teachers, apart from being trained to acquire relevant skills; they should also be given relatable instructional support to ensure that they improve their teaching skills and knowledge. To support this, the study done by Gezahegn and Mandefro (2019) proves that improving the pedagogical competences of supervisors has immense contribution to teachers' performance. Therefore, the capability of pre-primary teachers to improve their teaching skills and knowledge is for the most part influenced by quality of instructional leadership set by head teachers as instructional supervisors.

The Context of Pre-primary Education and Instructional Supervision

Investing in early childhood education in the recent years results from different studies that substantiate that educating young children leads to a multiplier benefits for individuals and societies at large (Hayden & Lee, 2009; Neuman & Devercelli, 2012; Neuman, Josephson & Chua, 2015; OECD, 2015; Soudée, 2009). The demand for quality of pre-primary education has come with growing attention to pre-primary teachers and their teaching skills (Shaeffer, 2015; Thomas & Thomas, 2009). This is because; teacher quality is the most significant school-based factor in determining pupils' learning outcomes (Logeswari, Kenny & Zuraidah, 2020). Owing to this importance, pre-primary teachers need to be persistently pedagogically supported for effective teaching. They should respond to continuous training and supervision with deepening pedagogical skills and knowledge needed for supervisory functions in schools (Coimbra, Pereira, Martins & Baptista, 2020).

The field of education supervision has a long history worldwide and attracted attention of both parents and teachers. Studies affirmed that supervision was about eye wash, a paper completion and punitive process (Sharma, Yusoff & Kannan, 2011). Correspondingly, Glickman, Gordon and Ross-Gordon (2017) added that it was to "watch over", "direct", "oversee", and "superintend" the workers. Consequently, supervision was regarded as a management's tool to manipulate subordinates. Contrarily, Vencia, Michael, Peter and Onesmo (2018) viewed instructional supervision as a process of helping, guiding and mentoring teachers with the aim of improving their delivery of classroom instruction that results to effective learning. Acknowledging the fact that, instructional supervision at school level demands a greater interaction between the supervisors and the supervisee, numerous aspects need to be aligned in articulating the focus, purpose and implementation of the component. In developed countries such as United Kingdom and United States of America consideration was on school inspection rather than school supervision (Lee, Ding & Song, 2008).

In other countries, studies demonstrate that education supervision within the school helps teachers to acquire new skills and teaching methods (Oke, 2016). It means

that teacher collaboration and learning within the school context are regarded as influential ways for improving teaching skills and result in effective teaching. In this context, Blase' and Blase (1999) assert that effective principals value dialogue that encourages teachers to critically reflect on their professional practices using collaborative strategies such as making suggestions, giving feedback, modelling, using inquiry, soliciting advice and opinions, and praising where appropriate. Based on different collaborative supervisory practices, the joint work of class observation, with supervisor and teacher working together, generally presents cycles of observation action-reflection that are specific to action research (Zepeda, 2017). Hence, instructional supervision practices as part of continuous professional development within the school is a means by which teachers can take part in life-long learning to enhance their teaching and develop into skilled and effective practitioners. Sharma, Yusoff and Kannan (2011) advocate that for supervision to be a continuous development and corporate process, teachers' roles should be viewed with utmost care and concern throughout the process. According to Zepeda (2017), effective instructional supervision has the potential to allow teachers to examine their own classroom practices through the assistance of the supervisors to promote growth and free interaction that aim at problem solving and capacity building. Ogundele, Sambo and Bwoi (2014) asserted that collaboration supervision models have a significant influence on early childhood education programmes as they improve teaching skills and knowledge among teachers.

School-based Instructional Supervision in Tanzania

In Tanzania, school-based instructional supervision is deemed to be head teachers' duty. In this context, it is regarded as a process of overseeing pedagogical implementation at the school level done by head teachers in collaboration with School Quality Assurance Team (SQAT) (MoEST, 2017). Despite head teachers instructional supervision responsibilities, studies have shown that, there is ineffective teaching at pre-primary classes. Pre-primary teachers fail to effectively realize their teaching roles (Mghasse & William, 2016; MoEVT, 2010; MoEVT, 2008; Shukia, 2014; Wilinski, Nguyen & Landgraf, 2016). Poor teaching skills and knowledge among public pre-primary teachers have been revealed as one among the contributing factors. A study by Kweku and Stelah (2018) discloses that supervisory practices that were mostly practised by head teachers including checking teacher's records of work and monitoring punctuality and regularity were found not to improve teaching skills. According to McGhee and Jimerson (2017) regular collaborative strength-based supervision approach promotes teacher growth as it allows teachers to be both proactive and innovative problem-solvers to meet the teaching challenges**.** Hence, in order to improve pre-primary teachers' pedagogical skills, head teachers should ensure regular collaborative instructional supervision practices.

Despite this fact, teaching in Tanzanian public pre-primary classes is reported to be of poor quality. Studies conducted on pre-primary education generally discovered that poor quality of pre-primary education results from various factors including inadequate qualified, committed and loving teachers, poor teaching skills, inadequate classrooms, shortage of teaching and learning resources as well as ineffective instructional supervision skills (Anderson & Sayre, 2016; Komba, 2016; Mghasse & William, 2016; Tandika, 2015; Shukia, 2014; USAID, 2014; UWEZO, 2015). These studies ignored the prominence of head teachers' instructional supervision practices on improving teaching skills among public pre-primary teachers. Therefore, the current study found out head teachers' and pre-primary teachers' perspectives on instructional supervision practices and how these practices improve teaching skills among pre-primary teachers.

Theoretical Basis

This study is informed by the Student-Centred Accountability and Connection Theory propounded by Marzano in 2003 and then improved by Reeves and Douglas in 2004. The theory believes that school supervisors are generally responsible for teachers and students' academic success. They should coach and mentor teachers using discussions and practices related to effective teaching. In this context, they are supposed to support teachers with appropriate instructional skills required to cope with curriculum intentions. Based on this theory, the fundamental guides for understanding instructional supervisors' roles are instructional supervisors' effectiveness, teachers' level in mastering subject content, the quality of teaching/learning strategies, as well as the frequency of supervision. The theory informs the theoretical basis of this study because the school-based instructional supervision is a leadership role practised in the school context. As an organization, school entails the collection of different interests and needs. The theory corresponds with the current study objectives given that it (i) insists on the instructional supervision roles that can improve teaching and (ii) ensures that teacher needs and views can be effectively articulated and coordinated for effective teaching and learning. Therefore, the purpose of this study was to find out head teachers' and pre-primary teachers' perspectives concerning the instructional supervision practices in public pre-primary classes in Tanzania.

Research Questions

The study intended to address the following research questions.

i. What are the head teacher's roles on school-based instructional supervision as related to the improvement of pre-primary teachers' skills?
ii. How can head teachers' school-based instructional supervision process for pre-primary classes be improved?

Methodology

The study employed qualitative research approach using a case study design. A case study design was employed in order to shed light on the school-based instructional supervision process in pre-primary classes. In this context, a case was school-based instructional supervision practices and the units of analysis were the head teachers and pre-primary teachers from eight selected public primary schools in Musoma Municipality and Butiama District in Mara Region, Tanzania. The two districts were purposively selected due to their academic performance based on PSLE for 2018 and 2019 respectively. While Musoma Municipality appeared in the top for two years respectively, Butiama trailed in the bottom for the same two years. In both districts schools were heterogeneous. Therefore, they were ranked from top to bottom using Grade Point Average (GPA) regarding the 2020 standard seven National Examination performance and then they were categorized into top and bottom level performers. The top two and bottom two primary schools with pre-primary classes were purposively selected from the two districts to make a total of eight primary schools with pre-primary classes.

The study employed sixteen participants who included eight head teachers and eight pre-primary teachers. These were purposively selected by virtue of their supervision and teaching roles in their respective schools. Five out of eight pre-primary teachers were females and the remaining three were males. Regarding their professional qualifications, five out of them had pre-primary education skills and three of them had not any training. On the other hand, among the eight selected head teachers, two were females and the remaining six were males. With exception of two head teachers, the remaining were not trained in pre-primary education.

Data to address the research questions of this study were collected using interview. The interview guide comprised open-ended questions which according to Cohen, Manion and Morrison (2018) enabled the researcher to gather in-depth data and clarify, add to or ask for more elaborations during the interview session. Interview was administered to head teachers and pre-primary teachers. The assumption was that both categories of respondents were having different perspectives on the status of school-based instructional supervision practices in pre-primary classes. The collected data were subjected to thematic analysis guided by the six stages of data analysis as proposed by Braun and Clarke (2013). The stages include data familiarization, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing a report.

Practically, the audiotapes and the field notes that contained interview data were carefully listened to and read several times respectively then transcribed. All sixteen transcripts and audio recordings were organised and coded to fit the purpose of

the study. The coded nodes were read and re-read to identify significant meaning patterns (themes). Data were analyzed into common patterns and themes. This data analysis technique enabled the researcher to sort out similarities and differences in participants' perspectives. Analysis to identify the story was based on each theme in relation to the study objectives and research questions to ensure no much overlapping between themes. The researcher recognized the main ideas emerging from the information obtained for theme generation.

Findings and Discussion

In addressing the study objective, two key research questions were formulated as follows: –

a. What were the head teacher's roles on school-based instructional supervision as related to the improvement of pre-primary teachers' skills? b. How can head teachers' school-based instructional supervision for pre-primary classes be improved? The findings are presented into the following themes: –

Monitoring Pre-primary Curriculum

The findings demonstrated that there was poor monitoring of pre-primary curriculum in the selected primary schools. Head teachers' function of monitoring pre-primary curriculum was found to be not effective. Pre-primary teachers were not effectively monitored by head teachers as many of them were doing what pleased them. This was because; head teachers were lacking relevant skills on pre-primary education. Besides, most of them had inadequate time for monitoring pre-primary classes. On the other hand, some pre-primary teachers had inadequate teaching skills for teaching pre-primary classes. One pre-primary teacher from school B remarked:

> One among the factors for poor teaching in public pre-primary classes is ineffective monitoring of pre-primary classes. Pre-primary teachers are not effectively monitored by head teachers since many of them do what please them. This is due to the fact that, most of head teachers lack relevant skills on pre-primary education. However, some of teachers also have inadequate apposite teaching skills for pre-primary classes. I think these teachers need effective monitoring and supervision to improve their teaching skills. Hence, without regular close monitoring of pre-primary curriculum, many pupils will not achieve the intended learning outcomes.

From the illustration above, pre-primary teachers need effective monitoring to get quality teaching in public pre-primary classes. This can mostly be achieved if head teachers are effective in monitoring pre-primary curriculum. Pre-primary teachers demonstrated that for effective monitoring of pre-primary curriculum, head teachers require appropriate skills for instructional monitoring and pre-primary education. These findings relate to those reported by Neuman and Devercelli

(2012) who observed that, currently, many countries give priorities in developing early childhood development policies, but they are not effective due to improper implementation and monitoring plans. Similarly, the findings corroborate with those of Marishane (2011) which established that lack of in-depth training among head teachers for their instructional roles creates a barrier for effective curriculum monitoring and supervision. Gezahegn and Mandefro (2019) suggested that improving supervisors' pedagogical competences has a significant contribution to improving teachers' performance.

Ensuring Effective Instructional Supervision Practices

The findings demonstrated that there were poor instructional supervision practices for improvement of teaching skills among pre-primary teachers. Additionally, it was reported that, most head teachers were missing the apposite instructional supervision skills and knowledge for pre-primary classes. One head teacher from School E remarked:

> When you talk about head teachers' instructional practices I think you mean the required skills that head teachers are supposed to have for effective supervision of pre-primary classes. If this is true, I am missing those skills. Although I have not been trained on pre-primary education as a head teacher, I'm supposed to see how teaching is going on there. Just imagine how someone can supervise something which she/he is not skilled in.

The voice shows that head teachers' were lacking pedagogical supervision skills for pre-primary classes. Most of the head teachers admitted that they lacked proper supervision skills for them to render pedagogical support for improving teaching skills among pre-primary teachers. This was also supported by Phillips (2012) who found that although educational supervision is critical in realisation of the effective schools, supervisors had inadequate appropriate skills for its effectiveness. Further, among various tasks performed by head teachers, seldom were they devoted to instructional leadership and monitoring. These findings are similar to those reported by Madziyire (2013) on educational leadership and supervision in Zimbabwe which found that when instructional supervision is done by administrators, there is a possible role conflict due to the fact that prospects of the supervisory practices are not in line with those of administration. In this perspective, instructional supervision process should be a liaison developing process between a head teacher and a teacher that is made on mutual trust, harmonious interaction and professional autonomy as concerned.

Ensuring Regularity of Instructional Supervision in Pre-primary Classes

The findings from almost all respondents unveiled that head teachers were not frequently supervising pre-primary classes. Pre-primary teachers preferred to have regular instructional supervision to improve their teaching skills. They wanted to see more instructional support regarding teaching techniques and strategies for their professional development. They insisted that instructional supervision process among pre-primary teachers should be conducted in a collaborative way on a regular basis which would help them improve their teaching skills. This was noted by one pre-primary teacher from school H who said:

> Collaborative instructional supervision practices done on a regular basis can improve teaching skills among pre-primary teachers for effectiveness of pre-primary curriculum. In my school this is not done effectively. Normally, I struggle for myself to acquire new teaching techniques to improve my classroom teaching.

The above quotation demonstrates that head teachers' instructional supervision practices were not collaborative and regularly done to enable pre-primary teachers improve their teaching skills. This finding concurs with that of Vencia et al (2018) who unveiled that school-based instructional supervision requires principals to do closer, periodic and continual internal supervision practices to ensure that teachers grow professionally and improve classroom teaching. The findings are also supported by those reported in a study by Kweku and Stelah (2018) which revealed that most supervisory practices that were rarely practised by head teachers were mostly based on the review of teacher's work records and classroom monitoring. The study done by Stark, McGhee and Jimerson (2017) discovered that regular collaborative strength-based supervision approach promotes teachers' growth as it enables teachers to be proactive and innovative problem-solvers to meet the teaching challenges.

Encouraging Learning new Teaching Strategies from Other Colleagues

Pre-primary teachers were asked whether they had opportunities to meet and share ideas about instructional improvement with their colleagues. The findings disclosed that most of them did not have formal teams to meet with and share new teaching strategies. Only a few of them demonstrated that, they learned from their colleagues predominantly those with experience in lower primary classes but they did not have formal arrangements to meet and share ideas as remarked by one pre-primary teacher form school F:

> There is nothing like formal team of teachers meeting for sharing new teaching strategies. However, when I meet any challenge

> regarding my classroom teaching and need assistance I tend to invite class **I** or **II** teachers who know better and ask them for help. In this way, we share ideas but not formally as you know that even those teachers have no appropriate skills for teaching pre-primary classes.

The above quotation shows that pre-primary teachers were not having formal meetings to share ideas regarding new teaching strategies for instructional improvement. Most of them stated that they were using their own initiatives to seek assistance from their fellow teachers particularly those who teach in lower primary classes. Moreover, teachers insisted that there were no dedicated school-based plans and strategies geared towards teaming among them. This made them not to learn from each other regarding new teaching strategies. Ogundele, Sambo and Bwoi (2014) in their sudy recommended that pre-primary teachers should learn new teaching strategies from their colleagues. This is because; team learning among teachers tends to improve teaching skills. Supporting this, Aurthor and Zepeda (2016) adds that head teachers should ensure that teachers are often engaged in team learning for them to acquire new teaching strategies and methods for improvement of their classroom teaching. This can be done through workshops, conference and seminars conducted within the school for the teaching improvement of early childhood education.

Conducting Dialogue Regarding Pre and Post Instructional Supervision

The findings revealed that pre-primary teachers wanted their supervisors to conduct both pre and post instructional supervision discussion and listen to them. They insisted that this would help them learn more on how teaching and learning process take place. They certainly admitted that during discussion weak points on teaching are highlighted and rectified. One pre-primary teacher from school C claimed:

> I think that after the supervision process, head teachers should discuss with us the weakness observed during teaching process and not to judge us wrongly. This makes us lose interest in teaching this class. They should not only focus on reviewing the teaching documents and signing them. Instead, they have to give feedback after the supervision process and allow free discussion on how to improve the weakness observed. This would build up our efforts on improving classroom teaching.

The statement above proves that pre-primary teachers prefer both pre and post instructional supervision discussion. They maintained that free discussion with their supervisors enables teachers to identify their teaching weakness and find out the means of improvement. This is because supervision process is a liaison between a head teacher and a teacher conducted on mutual trust, harmonious interaction

and professional autonomy. The findings correspond with the study carried out by Blase' and Blase' (1999) which demonstrated that talking with teachers to promote reflection and professional growth by school principals have vital effects on the improvement of teachers' professional skills. It enables principals to identify teachers' strengths and weaknesses and give strategies for professional improvement. Sharma, Yusoff, and Kannan (2011) substantiate that teachers need to be engaged in instructional supervision from the planning stage to the post observation. This is also supported by Zepeda (2017) who demonstrated that instructional supervision is a continuous classroom teaching monitoring aiming at promoting professional practices in a collegial and collaborative style.

Mentoring and Coaching

The findings showed that there was informal schedule specifically for teachers' mentorship and coaching. Arguing on this, some pre-primary teachers disclosed that mentorship is a supervisory approach whereby instructional supervisor or school head teacher who is more skilled helps or guides another teacher for professional growth. One head teacher admitted that, ''Head teachers should mentor and coach pre-primary teachers for their professional growth and teaching improvement'' These findings correspond with Reeve's theory (2004) which insisted that teachers improve their teaching abilities when they are involved in the process of professional development activities such as peer-coaching, mentorship, and post-supervision dialogue. Supporting this, Baffour-Awuah (2011) asserted that mentoring procedure include the followings (i) pre–lesson discussion (ii) observation (iii) collecting information and, (iv) post-conference.

Implication of the Study

The study proposes a school-based instructional supervision model for public pre-primary classes. The Model demands that head teacher's school-based instructional supervision practices for improving teaching skills and knowledge among pre-primary teachers' stems from an assortment of enabling factors. These factors, however, require the accessibility of a supervision policy guideline that stipulates head teachers' supervisory roles and skills necessary for pre-primary education. Indeed, it necessitates regular head teachers' school-based instructional supervision and collaborative supervisory practices. It also requires pre-primary teachers to be effectively trained and provided with in-service training to come up with curriculum reforms. Besides, head teachers should set up School-based Continuous Professional Development (SB-CPD) programmes and support pre-primary teachers to engage in for the improvement of their teaching skills and knowledge. Accordingly, the model insists that instructional supervision process should be a liaison developing process between a head teacher and a teacher that is made on mutual trust, harmonious interaction and professional autonomy as concerned.

Conclusion

This study concludes that head teacher's roles for pre-primary teachers were found to have little, if any, influence on improving teaching skills among pre-primary teachers. The roles were more administrative than pedagogical. This was due to the fact that, most of head teachers had inadequate skills on pre-primary curriculum supervision, evaluating teaching process in pre-primary classes and monitoring teachers' performance as well. The study noted that, instructional supervision of pre-primary classes requires proper skills because; it is a leadership role for improving teaching among pre-primary teachers. It requires head teachers to determine School-Based Continuous Professional Development (SB-CPD) programmes to allow pre-primary teachers to engage in for the improvement of their teaching skills and knowledge. Teachers find the collaborative model of school-based instructional supervision a means for improving their teaching skills. The approach bequeaths a room for symposium and allows feedback on supervision process among them.

Recommendations

This paper recommends that it is essential to ensure availability of pre-primary supervision guidelines for various head teachers' collaborative strength-based supervision practices such as mentoring, coaching, teaming, clinical supervision, discussion and professional growth plans within the school-context. This would serve to ensure school-based continuous professional development (SB-CPD) among pre-primary teachers. Besides, for the effective implementation of instructional supervision roles, head teachers should delegate their managerial tasks and focus on improving teaching skills among teachers.

It is further recommended that Head teachers should frequently observe classroom teaching practices, understand teaching strategies, and have curriculum competence for them to give constructive feedback for pre-primary teachers to improve their teaching skills. For this reason, they have to mentor, coach, and allow teaming among pre-primary teachers for improvement of teaching skills and effective execution of pre-primary curriculum. Similarly, it is also recommended that novice head teachers should be given pre-service training in instructional supervision of pre-primary education as part of their induction process. Finally, this study further study is recommends for a similar study on the influence of pre and post-supervision discussion on the improvement of teaching skills among pre-primary teachers.

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