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Editorial Comment

The Ghana Journal of Education: Issues and Practice (*GJE*) is a peer reviewed journal which focuses on classroom practice and policy issues that affect teaching and learning. In this volume, researchers and authors have contributed a wealth of high quality and informative material to the journal. This volume contains seven articles that have gone through peer review process at three levels by independent reviewers.

Stephen Doh Fia and Sylvester Loshar-Woyram investigate the influence of family stressors on depression among women in the Ketu-South Municipality in the Volta Region using the descriptive survey design. They identify loss of family members as the prominent family stressor among the women experiencing depression in the Ketu-South Municipality and recommend that family stressors should be controlled among women living with depression by the government and non-governmental agencies.

Michael Adeniyi Omoyemiju and Obafemi Awolowo examine the dimension of online sexual behaviour of tertiary institution students in Osun State, Nigeria using descriptive correlational design. The authors find among other things that demographic factors were predictive factors of online sexual behaviour among tertiary institution students and provide implications of the findings from the study for counselling.

Peter Boakye examines the contribution of Flight Lieutenant Jerry John Rawlings to the development of education in Ghana. His study specifically focuses on the introduction of the 1987 Education Reforms by Jerry John Rawlings, and how the University Rationalisation Policy introduced by him affected tertiary education in Ghana. The author adopts the qualitative method and uses both primary and secondary sources of data to examine how education fared in Ghana under Rawlings. The study concludes that Rawlings' contribution to education did not only shorten the duration of education but also, it built a school system that reflected the Ghanaian realities and that made the educated child more productive in the society.

Christine Adu-Yeboah uses the mixed methods approach to explore the perspectives of headteachers, teachers and school pupils at the basic school level to understand the teaching and learning contexts for

evidence of patterns of practice and innovative strategies. The study shows that irrespective of school type and settlement area, it takes a proactive school leader to initiate strategies for meaningful learning to take place.

Samuel Nuamah Eshun, David Addae and Abigail Abena Owusuwaa Manu examine students' experiences in participating in MOOCs (Massive Open Online Courses) at the University of Ghana using the qualitative research method. The study revealed among others that students are mostly attracted to Coursera and edx than other available MOOC platforms. Students view MOOC as affordable, accessible and of quality. The authors recommend that Universities and other tertiary institutions convert some of their study courses registered by students into MOOCs to create more lecture spaces for prospective students.

Kofi Ayebi-Arthur, Issah Bala Abdulai and Daniel Paa Korsah investigate the attitude and level of confidence of Basic 1-6 teachers in Ghana in implementing the new standard-based computing curriculum using a survey design. The findings showed among others that most of the teachers have high confidence in handling the revised computing curriculum. In addition, most teachers have positive attitude towards using ICT tools for teaching and learning. Availability of ICT resources in basic schools in Ghana remain a challenge. Also, most teachers said they had not attended any ICT-based workshop in the last one year. The study recommended the need for more in-service training for teachers who teach computing to bring them up to speed on the new computing curriculum.

Ernest Kofi Davis, PhD
(Editor-in-Chief)

Family Stressors and Depression among women in the Ketu-South Municipality in the Volta Region of Ghana: Counselling Implications

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Abstract
This study investigated the influence of family stressors on depression among women in the Ketu-South Municipality in the Volta Region. The study used the descriptive survey design. The census method was used to select a sample of 70 women for the study. The Family Inventory of Life Events and Changes (FILE) and Beck Depression Inventory (BDI II) were used to collect data for the study. The data collected were analysed using means, standard deviation, Pearson Product Moment Correlation Co-efficient, and Linear Multiple Regression. The study revealed that the prominent family stressor among the women experiencing depression in the Ketu-South Municipality is loss of family members (overall mean of 4.22). In addition, the study revealed that family stressors significantly contribute to depression among women (R=.749, p=.039) with loss of family members being the highest contributor to depression (Beta=2.123, p=.037). The study recommended that government and non-governmental agencies should control family stressors among women living with depression.

Key words: Family Stressor; Depression; Vulnerability; Strains.

Introduction

Inability to meet the demands that put strains on the family can lead to social and psychological problems. Such problems may raise the stress threshold of the household and bring about subsequent depressive episodes. According to Omotosho, Anyetey, Antiri and Otuei (2016), Stress can be destructive if not well managed. It also has a direct bearing

on the individual's performance and productivity. Globally, more than 264 million people of all ages suffer from depression and more women are affected by depression than men.

(World Health Organization, 2020). Physicians and clinicians have observed how some people behave in obvious and different ways from what would be considered normal at the time. According to Cochran and Rabinowitz (2000), depression is considered a disorder of the mood, sometimes called an affective disorder, signifying the disturbance of "affect" in all widely used classification and diagnostic schemes. In general, a mood disorder represents a departure from what is considered to be a typical mood state experienced by persons most days of their lives.

The World Health Organisation (2016) describes depressive episodes as characterised by lowering of mood, reduction of energy, decrease in activity, decline in capacity for enjoyment, interest and concentration. The episodes are also marked with disturbed sleep, diminishing appetite, reduced self-esteem and self-confidence, ideas of guilt or worthlessness. There is lowered mood which does not only vary from day to day but also unresponsive to circumstances. This may be accompanied by somatic symptoms. Such somatic symptoms include loss of interest and pleasurable feelings, waking in the morning several hours before the usual time, worst depression in the morning, marked psychomotor retardation, weight loss, and loss of libido.

An individual has some degree of vulnerability to developing depression according to Abramson, Alloy, and Metalsky, as cited in O'Mara et al. (2013) development of depression in a vulnerability-stress model. An example is genetic predisposition, or psychological vulnerabilities triggered by either an acute stressor or accumulation of stressors. Abramson et al., claim each individual's vulnerability varies, such that a person with a high level of vulnerability may need only a relatively minor stressor to trigger a depressive episode while a person with a low level of vulnerability may need a high level of stress, or multiple stressors to trigger a depressive episode. The stressors may include trauma and abuse, interpersonal conflicts, and lack of social support. The stressors at one point in time may become diathesis at a later point in time. A woman may initially experience some form of abuse as a stressor, and over time, this experience may increase her vulnerability by lowering the amount of stress needed to aggravate depressive symptoms at a later point in time.

In socio-cultural settings, socioeconomic and demographic characteristics of individuals seem to influence attitudes towards depression. Individuals from lower socioeconomic backgrounds with lower educational levels exhibit less knowledge and more negative attitudes towards depression. In typical socio-cultural settings, emotional disturbances are not really considered within the realm of health and wellbeing. Depressive symptoms are viewed as normal emotional responses to particular events. As a result, the depressed individuals are often discouraged from seeking help and are left to their fate. It is noteworthy that depression is more common than how people perceive it (Cutrona, Wallace, & Wesner, 2006).

Furthermore, Cutrona et al.'s study reveals that neighbourhoods adversely engender depression by intensifying the harmful mental health impact of negative events in people's life. For instance, a married woman who experiences childlessness, or has only a disabled child in a more disadvantaged neighbourhood is more likely to become depressed than a woman who experiences similar challenge in a more advanced neighbourhood. The reasons for this heightened vulnerability may include local norms that promote ineffective coping and negative interpretations of events. In the views of Cutrona, Wallace, and Wesner (2006), adverse neighbourhoods precipitate depression as interpersonal relationship is affected, or as social disorder heightens.

Owusu-Adjah and Agbemafle (2016) asserts that the prevalence of domestic violence in Ghana remains unacceptably high with numerous consequences ranging from psychological to maternal and neonatal outcomes, and morbidity in pregnant women. Their study revealed that regular alcohol consumption by the other partner, exposure to harsh physical discipline during childhood and witnessing the father beating the mother during childhood are all risk factors of domestic violence which put women at an increased risk of depression, suicide attempts, psychological disorder, and physical injury. Focus group discussions from a study by Ardayfio-Schandorf (2005) revealed perceived violent acts against women in Ghana to include wife beating, defilement, rape, forced marriages, and widowhood rites, and that many men who admitted to beating their wives see it as a way of correcting them though it is a wrong practice.

Depressive disorders rank among the leading causes of disability worldwide (World Health Organisation, 2020). According to

the World Health Organisation, depression is a major contributor to global burden of diseases among men and women. However, more women are affected by depression than men. There has been a series of consistent reports of depression in the Ketu-South Municipality from 2015 and persisted through to 2018. Details have been made available in Table 1.

Table 1: The Statistics of Depression Cases in the Ketu-South Municipality

Year	Total Cases	Cases in Women	Cases in Men	Cases in Adolescent Girls
2015	54	66.7%	25.9%	7.4%
2016	81	72.8%	20.9%	6.2%
2017	88	73.7%	20.5%	6.2%
2018	91	83.5%	16.5%	–

Source: Ketu-South Municipality (2019)

Whiffen, as cited in Marshall and Harper-Jaques (2008) establishes that in families with a depressed mother, the interactions between the mother and child show more negativity. Thus, when the mother of a young child is depressed, the effects on the child include impairment on the infant's physiological development, poorer physical health, and incidence of major depressive disorders. A mother's depression in the early years of an infant's life may affect the child's psychological development causing very significant intellectual deficits. Other effects include insecure attachment, difficulties with developing social skills and academic challenges.

Studies such as Ackom (2006), Odame (2010) and Buabeng (2015) focused on depression in Ghana. However, literature reviewed indicates less research work on the influence of family stressors on depression among women in Ghana. Thus, the focus of this study is to identify the influence of family stressors on depression in women in the Ketu-South Municipality in Volta Region.

Research Question

One research question guided the study:
1. What family stressors are present in women experiencing depression in the Ketu-South Municipality?

Research Hypothesis

H_A1: Family stressors significantly contribute to depression among women in the Ketu-South Municipality.

Methodology

A descriptive sample survey design was used for this study. This research design was most appropriate for the study because it presents explicit statement about relationships between variables (Amedahe, 2002). The study was conducted in the Ketu-South Municipality in the Volta Region of Ghana. This area was selected for the study because it illustrates mental health challenges such as depression among women in typical rural communities in Ghana.

The target population for the study comprised all women experiencing depression in the Ketu-South Municipality. The study, however, centred on an accessible population of 76 depressed women who were selected from the Mental Health Unit of the Ketu-South Municipal Hospital and the Department of Social Welfare.

Sampling Procedure

The sample frame of depressed women in the Ketu-South Municipality was not very large (76 depressed women), coupled with the desire to provide all the depressed women a chance to participate in the study, a census of the total population was adopted for the study. All the 55 depressed women were selected from the Mental Health Unit of the Municipal Hospital together with all the 21 depressed women drawn from the Department of Social Welfare. A total of 70 depressed women out of the 76 accessible population, however, responded to the instruments.

Two instruments namely Beck Depression Inventory (BDI II) created by Aaron T. Beck, and Family Inventory of Life Events and Changes (FILE) developed by McCubbin and Patterson were used to collect data for this study. The Beck Depression Inventory is a series of questions developed to measure the intensity and severity of depression. The adopted scale comprises 21 items that are scored on a four-point Likert-type scale with a total score of 63. Each response is allocated a score ranging from zero to three based on intensity of each specific depressive symptom. The 21 items that make up Beck Depression Inventory assess mood, pessimism, sense of failure, self-

dissatisfaction, guilt, punishment, self-dislike, self-accusation, suicidal ideation, crying, irritability, social withdrawal, indecisiveness, body image, work difficulties, insomnia, fatigue, appetite, weight loss, bodily preoccupation, and loss of libido (Beck, Steer, & Brown, 1996). For individuals who have been clinically diagnosed of depression, scores of 0-9 represents minimal depressive symptoms, while scores of 10-16 indicate mild depression, scores of 17-29 indicate moderate depression, with scores of 30-63 representing severe depression (Beck, Steer, & Brown, 1996).

The Family Inventory of Life Events and Changes has 71 items that measure family stressors. The items are organized into nine subscales. These subscales are Intra-Family Strains Scale, Marital Strains Scale, Pregnancy and Child Bearing Strains Scale, Finance and Business Strains Scale, Work-Family Transitions and Strains Scale, Illness and Family Care Strains Scale, Losses Scale, Transitions into and out of Family Scale, and Family Legal Violations Scale (Walsh, 2004; McCubbin & Patterson, 1987). However, the Inventory was adapted and items reduced to 45 rating on a five-point Likert-type scale with scores ranging from (1 – 5) as Very True, True, Somewhat True, Not True, and Not at All True while maintaining the nine sub-scales.

Validity of the Instruments

The Beck Depression Inventory has been tested for content, concurrent, and construct validity. High concurrent validity ratings are given between Beck Depression Inventory and other depression instruments including Hamilton Depression Rating Scale, and Minnesota Multiphasic Personality Inventory. The scale is positively correlated with the Hamilton Depression Rating Scale, r=0.71. The Beck Depression Inventory has also shown high construct validity with the symptoms it measures (Beck, Steer, & Brown, 1996).

According to McCubbin and Patterson (1987), construct validity of the Family Inventory of Life Events and Changes (FILE) is supported when correlated with a family functioning scale. Predictive validity has also been demonstrated. Besides, the scale also demonstrates moderately high concurrent validity with Family Stress and Support Inventory (FSSI) Stress Scale (r=.50, p=.00), indicating that both assess similar, but not identical family stress dimensions (Walsh, 2004; McCubbin & Patterson, 1987).

Reliability of the Instruments

The Beck Depression Inventory (BDI II) has a coefficient alpha rating of .92 for outpatients and .93 for college student samples. The BDI questionnaire also demonstrates high internal consistency with alpha coefficient of .81 for non-psychiatric population and .86 for psychiatric population (Beck, Steer, & Brown, 1996).

To establish the reliability of the modified Family Inventory of Life Events and Changes scale within the current population, it was piloted using 15 women in depressed states, drawn from women victims who lodged complaints at the Domestic Violence and Victims Support Unit of the Ghana Police Service in the Ketu-South Municipality. The overall alpha reliability of the Family Inventory of Life Events and Changes total scale was .89 (Cronbach's alpha) and subscale reliabilities vary from .73 to .30. The internal consistency was also most solidly demonstrated by the total scale (McCubbin & Patterson, 1987).

Two research assistants who also double as mental health nurses were recruited to assist in the data collection.

Data Analysis

Data for the research question were analysed using means and standard deviations while that of the hypothesis was analysed using Linear multiple regression and Pearson Product Moment Correlation.

Result

The research question sought to find out the family stressors among women experience depression in Ketu-South Municipality. The results are indicated in Table 2.

Table 2: Prevalence of Family Stressors among Women with Depression

Strains	Overall Means	Standard Deviations (Overall)
Loss of family members	4.22	1.12
Pregnancy and child bearing	4.17	1.12
Transition into and out of family	4.02	1.17
Family legal violations	3.93	1.25
Work-family transitions	3.69	.96
Marital strains	3.36	1.42
Finance and business	3.21	.79
Illness and family care	3.21	1.08
Intra family strains	2.64	1.12

Source: Field Survey (2019), N=70

It can be inferred from Table 2 that loss of family recorded the highest mean (4.22) followed by pregnancy and child-bearing strains (mean=4.17), transition into and out of family (mean=4.02), family legal violations (mean=3.93), work-family transitions and strains (mean=3.69), marital strains (mean=3.36), financial and business strains, and illness and family care strains (mean=3.21) and intra-family strains recording the least (mean=2.64). The results show that the most prevalent family stressor among women experiencing depression in the study area is loss of family members. This is followed by pregnancy and child-bearing strains, transition into and out of the family, family legal violations, work-family transitions and strains, marital strains, financial and business strains, and illness and family care strains with intra-family strains being the least prevalent.

Research Hypothesis
H_A1:   Family stressors significantly contribute to depression among women in the Ketu-South Municipality.

Table 3: Regression analysis on family stressors and depression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.749	.730	.052	1.05866	.730	.709	9	60	.039	1.282

a. Predictors: (Constant), leg, ill, loss, preg, Intra, wor, trans, mari, bus

a. Dependent Variable: BECK

Results in Table 3 show a strong significant positive relationship between the predictor variable (family stressors) and the criterion variable (depression) R = .749, p = .0.39, and thus, the null hypothesis is rejected and the alternate hypothesis is upheld. The results mean that as women experience high level of family stressors it will lead to a corresponding level of depression among them. It can also be inferred from Table 3 that the predictor variable (as determined by family stressors) explain only 73% of the variations in the dependent variable (depression in women) with an R-square of .730. This explains that family stressors significantly contribute to depression among the women that were sampled.

Table 4: Relative Contribution of the predictor Variables

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	17.458	6.605		2.643	.010	4.245	30.670
Intra	.029	.107	.040	-.268	.790	-.242	.185
Mari	.067	.108	1.095	1.217	.048	-.283	.149
Preg	.104	.177	2.087	2.585	.040	-.250	.457
Busi	.053	.129	1.068	-1.416	.019	-.311	.204
Workable	.019	.143	.019	.136	.893	-.266	.305
Ill	.087	.248	.054	-.350	.727	-.584	.410

Loss	.123	.168	2.123	2.732	.037	-.213	.460
Tran	.193	.180	1.150	1.555	.026	-.173	.559
Leg	.040	.130	.044	.310	.758	-.219	.300

a. Dependent Variable: BECK

From Table 4, a standard deviation (1.12) increase in Intra Family Strains will increase depression by .40 standard deviations, a standard deviation (1.42) increase in Marital Strains will increase depression by 1.095 standard deviations, a standard deviation (1.12) increase in Pregnancy Strains will increase depression by 2.087 standard deviations, a standard deviation (.79) increase in Financial Strains will increase depression by 1.068 standard deviations. Also, a standard deviation (0.96) increase in Work-Family Strains will increase depression by .019 standard deviations, a standard deviation (1.08) increase in Illness will increase depression by .54 standard deviations, a standard deviation (1.12) increase in Loss of family members will increase depression by 2.123 standard deviations, a standard deviation (1.17) increase in Transition will increase depression by 1.150 standard deviations and a standard deviation (1.25) increase in Family violations will increase depression by .044 standard deviations. However, only the predictions of Marital, Pregnancy, Finance, Losses and Transition Strains were significant with $p < .05$.

Discussion

In answering the research question, the findings of the study revealed that though all the family stressors were common in the women who were sampled, the most prevalent family stressor among women experiencing depression in the study area was loss of family members. This finding is consistent with those from the literature. For example, McCubbin and Patterson (as cited in Mondragon, 2017) contend that family stressors are life situations or changes that place strain on the family unit and may lead to changes in functioning of the family system requiring a need for adjustment. McCubbin and Patterson further indicated that families with a higher accumulation of life events have been found to have lower family functioning and poorer physical and mental health. That is, persistent stressors in the family can influence the development of depression.

According to Mash et al. (2014), a major factor which plays a role in development of complicated grief and depression in bereavement as in losses is the relationship of interpersonal and personality characteristics. Denckla et al., (as cited in Mash et al. (2014)) noted that individuals identified as dependent are likely to be motivated by hopes of obtaining care, nurturance, guidance, and support from the deceased and when such supports are not available can lead to depression. This implies that the extent to which an individual positively values, and is committed to a relationship prior to the loss may contribute to the development of complicated grief or depression after the loss. It is in this regard that Mancini et al. (2009), hold the view that feelings of trust, security, intimacy, and mutual support in a relationship are associated with increased grief, particularly in older adults following loss.

This finding of the study confirms the position of Mash et al. (2014), who found from 157 young adults between ages 17 and 29 who experienced loss of family member within the past three years that 16% of bereaved young adults showed complicated grief, and 34% had mild to severe depression. The study agrees with Fried et al. (2015), who reported that bereavement mostly triggers loneliness, which activates further depressive symptoms. The finding of the study further confirmed the position of Mojtabai (2011), who found that bereavement-induced depressive episodes were more common in women than men.

It can be inferred from the discussion that losses significantly increase the chances of women in getting depressed and that might have happened in the case of the women that participated in the study. The findings confirm Lazarus and Folkman's transactional model of stress which explains that the stress is due to life changing experiences such as losses and for that matter family stressors. For example, if a woman experiences the loss of loved ones, she is likely to experience stress and this will lead to depression.

Also, the research hypothesis sought to investigate if family stressors will significantly contribute to depression among women in the Ketu-South Municipality. The results show that family stressors significantly contribute to depression in the women who were sampled, with losses as part of family stressors which is significantly the best contributor to depression. It must be pointed out that the current finding

is consistent with literature. For example, a study by Beck, as cited in Buabeng (2015) found higher levels of perceived life stress to be associated with depression. This is supported by Mondragon (2017) who found a significant relationship between family stressors and inter-parental conflict among Latino families.

In Buabeng's (2015) study, it was revealed that a father not being part of the life of the mother and baby, and not providing financial support could also increase the risk of depression among women. Also, a significant association between emotional relationship with men whom women had babies could also lead to depression among women. Lambon (2018) suggested that due to the various meanings assigned to stillbirth, mothers after stillbirth grieve and equally face challenges such as isolation, or social withdrawal, spouse or partner challenges and stigma. The author reported that mothers after stillbirth are likely to develop psychological problems including depression.

Abeasi (2014) found that as there is available social support, the financial burden reduces, and consequently the negative impact of financial constraints on emotional or psychological health reduces. A study by Mash et al. (2014) reported that high levels of dependency were related to more depressive symptoms. In a study by the Institute of Development Studies (2016) across the then 10 regions of Ghana to find out the incidence, attitudes, determinants, and consequences of domestic violence, of the 2,989 women, the results indicated a very strong correlation between exposure to domestic violence and women's mental health status including depression. A study by Ju et al. (2017) found from 4,663 women that the combination of family stress and family-work conflicts strongly influenced the depressive symptoms of working married women. This is supported by a study done by Stoeva and Greenhaus, as cited in Ju et al. (2017) in which they reported that family stress and family-work conflict from multiple roles influence depressive symptoms among women.

Contribution to Knowledge

It is very important that any research contributes or adds to existing knowledge. It should be noted that the findings of the study has extended the discussion in literature. The modest contribution of the study is that losses as part of family stressors is the prominent and best predictor of depression, and this is a relatively new finding in family stressors and depression literature, at least in Ghana.

Counselling Implications

Assessment strategies employed by counsellors or psychologists should include assessment of comorbid conditions to help identify psychosocial stressors underlying depression. Also, counsellors should look into the types of treatment that will reduce depression resulting from family stressors. Stress management strategies such as solution-focused and emotion-focused coping should be employed in assisting women battling with stressors in their families so that these stressors do not degenerate into depression. Interpersonal therapy which focuses on current interpersonal relationship by analyzing social dysfunctions related to depression should be employed.

Conclusions

This study provides evidence that family stressors influence depression among women and that loss of family members is the most prevalent family stressor. Respondents might have experienced family losses as compared to the other family stressors at the time the study was being conducted and that could explain why loss of family members was prevalent. Also, it was seen that family stressors are strongly associated with depression among women. This means that the more a woman is exposed to or experiences family stressors, the more likely she is to experience depression.

Recommendations

On the basis of the findings of this study and the conclusions drawn, the following recommendations were made:

1. The study recommends that the Ministries of Health, Gender, Children, and Social Protection, and other non-governmental agencies put up measures to control the family stressors as experienced by women especially those who are living with depression. Prominent among these measures are instituting counselling centers to provide counselling services. This will guide such women to develop better coping strategies where necessary.

2. Women should be equipped with skills to withstand difficult situations such as losses, pregnancy and child bearing issues, financial issues, marital issues, among others. They should be provided with knowledge and skills by experts such as counsellors, psychologists, among others. Members of the families and loved ones should also develop the habit of being empathetic and showing the needed social support in case of such losses or family stressors.

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Demographic Factors and Online Sexual Behaviours of Tertiary Institution Students in Osun State, Nigeria: Counselling Implications

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Abstract

The study examined the dimension of online sexual behaviour of tertiary institution students in Osun State, Nigeria. It also investigated the predictive contribution of demographic factors on online sexual behaviour of students. Descriptive correlational design was adopted for the study. The population for the study consisted of all tertiary institution students in Osun State. A sample of 1600 students was selected to participate in the study. Online Sexual Behaviour Scale (OSBS) was the instrument designed and used to collect data for the study. Frequency counts was used to answer the research question while linear regression analysis used to test the research hypothesis. The findings showed that 34.1% of students sampled have experienced partnered-arousal with another person while 48.5% of them have experienced non-arousal. Only 17.4% of them have had experience of solitary arousal with another person. The result also showed that place of residence was the strongest predictor of online sexual behaviour among students ($B = 12.164$; $t = 10.091$; $p < 0.05$). This study concluded that demographic factors were predictive factors of online sexual behaviour among tertiary institution students. Thus, appropriate counselling implications were made, and it was recommended that counselling psychologists and sex educators should develop a comprehensive programme that will specifically promote safe online sexual practices among students.

Key words: Sexual behaviour, Predictors, Online, Students, Demographic Factors.

Introduction

In Nigeria and the rest of the world, sexual activities of tertiary institution students have continued to increase and change in the last

two decades. Not only that, advent of the internet and its utilization rate by students have also increased with a great influence on their sexual expression (Johnson, 2015). Apart from academic importance of internet to students, students also make use of internet for social interaction and express their sexuality. Some of the activities that also came out of this include online dating and online sex, which may have devastating effects if not properly expressed by students. Kuss, Van Rooiji, Shorter, Griffiths, and Van de Mheen (2013) have reported that there is a positive association between the rate of students' use of internet and risky sexual behaviours. When the internet is used as a means of expressing sexual behaviour by one person to another or to self, it is referred to as online sexual behaviour.

  Online sexual behaviour has been described as the use of the Internet for activities involving sexual expression with the aims of recreation, entertainment, exploration, support, education, commerce and/or in search of sexual/romantic partners (Cooper & Griffin-Shelly, 2002). Johnson (2015) describes online sexual behaviour as sexual activities that take place with the use of the internet and/or mobile phone. By implication, for online sexual behaviour to take place, there must be availability of internet service and this can take place with the use of computer devices such as desktop, micro or minicomputer and even smart phones. In the last two decades due to the increase in the availability and accessibility of internet facilities all over the world, young people's use and participation in online sexual activities have increased and this has changed the way they expressed their sexuality (Barrada, Gomez, & Castro, 2019).

  Online sexual behaviour has been categorised into three different but interrelated levels. They are non-arousal, solitary arousal, and partnered-arousal (Shaughnessy, & Byers 2017). Non-arousal sexual activities refer to sexually-related activities that are not centered around materials that are sexually stimulating, yet rather include educational as well as relational experiences, such as visiting educational sites, looking for dating accomplices on the internet, etc. Solitary-arousal sexual activities include single direction access or creation of stimuli that are sexually explicit (for instance, posting or viewing pictures or videos that are sexually explicit). The partnered-arousal sexual exercises are intuitive and require the involvement of one other individual at the least for the sexual action to happen (e.g., trading instant messages about wanted or fantasized sexual acts with

someone else, taking part in sexual acts simultaneously as another person on webcam).

Some studies elsewhere have associated online sexual behaviour with increased sexual risk-taking behaviour (Wolak, Finkelhor, Mitchell & Ybarra, 2008; Baumgartner, Valkenburg & Peter 2010). Apart from this, there is a high risk of meeting dishonest people who may have contracted HIV/AIDS probably because of the intensity of involvement in behaviour ranges from non-sexual relationship to unprotected sexual intercourse with multiple partners. Most activities that youth practice offline, they also do online.

A study of an online project, including data from 20 European countries, found that there was a statistically significant gender difference in sexting and the study predicted that in countries with more traditional male and female roles, boys engaged in sexting more than girls (Baumgartner, Sumter, Peter, Valkenburg, & Livingstone, 2014). In a related study conducted by Ungdomsstyrelsen (2012), it was reported that girls posted sexual pictures more often than boys. Another study had reported that 35.2% to 45.2% of men who had sex with other men are those who engaged in unprotected sex and had used the internet as a means of linking up with their sex partners (Klein, 2010). Other reported issues, especially among young women includes emotional and sexual dangers, such as getting involved with someone who was not the one met online, contracting STD or even becoming pregnant (Couch, Liamputtong, & Pitts, 2012). Another related problem and risk-taking decision are experiences of sexual violence and abuse such as sexual exploitation and rape. All these are potent enough to lead to negative psychological (depression, aggression, low self-esteem, suicidal ideation), educational (school dropout, illiteracy), social (social unrest and imbalance), and physical health (cardiovascular health problem, HIV/STDs) issues and may impair the overall well-being of victims or cause even untimely death.

All these online sexual behaviours which may lead to increased risks of experiencing consequences are known as online sexual risk behaviour. Baumgartner, Valkenburg and Peter (2010) defined online sexual risk behaviours as a means of exchanging intimate sexually insinuating messages or material with individuals exclusively known online. For instance, some studies have identified online sexual behaviour like sexting with high-risk sexual behaviours like multiple partners, anal sex and unprotected sex (Benotsch, Snipes, Martin, &

Bull, 2013; Perkins, Becker, Tehee, & Mackelprang, 2014; Rice et al., 2014). Relatedly, in a study by Wolak, Finkelhor, Mitchell and Ybarra (2007), 49% of the youth had communicated online with a stranger. In Nigeria for instance, there was information about the sudden death of Cynthia Osogwu, a former student of Nasarawa State University, who was reportedly invited by her Facebook friends from Abuja to Lagos and got killed by the same set of Facebook friends after she had been raped (Usman, 2012). Notwithstanding the dangers, these risky behaviours are steadily becoming social norms among young adults, especially undergraduates.

Many studies have shown that human risky sexual behaviours are the product of many factors such as age, gender, environment, place of residence, religious affiliation (Ogungbamila, 2013: Letamo, & Mokgatlhe, 2013; Amoateng, Kalule-Sabiti &Arkaah, 2014; Odimegwu & Somefun, 2017). Particularly in Nigeria, previous studies have affirmed the influence of student's demographic factors on sexual behaviour (Ogungbamila, 2013: Arulogun, Ogbu & Dipeolu, 2016; Ifeadike, Nnebue, Oparaji, Okorie, Okoro, & Okoyechira, 2018). Even though empirical information on the demographic factors of students' online sexual behaviour is still very scanty in sexuality literature, most of the available empirical studies were fraught with the inability to explain the risky sexual behaviour with respect to the prevailing on the online activities of students across various tertiary institutions.

It has been established empirically that about 99% of Nigerian youths are exposed to at least one media source or the other (National Population Commission, 2009), where sexuality-related information is disseminated and with the evidence that tertiary institution students access the internet using their mobile phones, laptops and other media devices (Omoyemiju, 2018), get connected with the opposite sex and engage in a dating relationship with each other (Nwosu, 2017). Given the growing trendy phenomenon of sexual behaviour, then what is the dimension of online sexual behaviour among tertiary institution students in Osun State? Scientific information about online sexual behaviour, which can be used to develop appropriate counselling intervention for students and in taking reproductive health decisions by students is very scanty in literature.

Following this background, it is now essential for the counselling psychologists to be inclined with empirical information about online sexual behaviours of tertiary institution students which can

be used to help students avoid undesired outcomes. Therefore, the aim of this study is to examine the predictive contribution of demographic factors like age, gender, place of residence, institution ownership type, religious affiliation and residential type on online sexual behaviour of students. In order to achieve this objective, the research question and hypothesis raised are:

The Research Question:
What is the dimension of online sexual behaviour among students?

The Research Hypothesis:
Demographic factors will not significantly predict the online sexual behaviour of students.

Methods
This was an exploratory study using descriptive correlational design. All tertiary institution students in Osun State, Nigeria formed the study population. Proportionate stratified sampling technique was used to select a total sample of 1,600 students from four institutions (two universities and two polytechnics) using institution's ownership as strata. The selection procedure used is summarised in Table 1.

Table 1: Schools and students selected for the study

Institution	Private	Public	Total
Polytechnic	300	500	800
University	300	500	800
Total	600	1000	1600

Five Faculties/Schools common to all four institutions were selected by purposive sampling. Based on the population size, while 300 students each were selected from two private institutions (one university and one polytechnic) making a total of 600 students selected from private institutions. Also, 500 students each were selected from two government owned institutions (one university and one polytechnic) making a total of 1000 students selected from public institutions. Data were collected using a self-developed instrument

titled "Online Sexual Behaviour Scale (OSBS)". The OSBS has two sections. Section A contained four items on demographic information of the respondents. This section was designed to elicit information about gender, age, institution type, academic level, place of residence in school and religious affiliation. Section B contained 21 items measuring online sexual behaviour of respondents. (non-arousal, solitary arousal, partnered arousal). Under this section, participants were asked to indicate the frequency of their engagement in online sexual activities using the three dimensions: non-arousal (e.g., looked for information about sexual activities online), solitary-arousal (e.g., viewed sexually explicit pictures involving men and women), and partnered-arousal (e.g., wrote and sent stories about sexual acts to someone through email and/or social network site) activities. All the 21 items were carefully worded and scrutinised on the basis of the face, construct and factorial validity.

In order to determine the suitability and adequacy of the instrument, the instrument was subjected to Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's Test of Sphericity (BTS). The results showed that only 17 out of 21 items in the instrument conformed to Kaiser (1974) criteria; the remaining four did not conform and were deleted. In determining the internal consistency of the instrument, Cronbach alpha, Split-half and Spearman Brown were used to test the degree of its internal consistency. The reliability coefficients obtained from Cronbach alpha, Split-half and Spearman Brown were 0.922, 0.801 and 0.892 respectively. Participants were asked to rate the level of reflection with which they had engaged in each behaviour during the past few months on a 5-point Likert-type scale, ranging from True of Me (4) to Neutral (0). The items were scored 4, 3, 2, 1 and 0 for "True of Me", "Somewhat True of Me", "Somewhat Untrue of Me", "Untrue of Me" and "Neutral" respectively.

The individual's score on the 17 items was computed. With this procedure, the maximum obtainable score was 68 while the minimum was zero. The higher the score, the more an individual engages in online sexual activities. The instrument was administered with the assistance of four research workers under the supervision of the principal researcher. Data collected were subjected to descriptive and inferential statistical analyses. The research question was answered using descriptive statistics while the research hypothesis was tested using multiple regression analysis.

Results

Sample Characteristics

This section describes the demographic factors of students with respect to their gender. The summary is presented in Table 2.

Table 2: Students' demographic factors across gender

Demographic factors	Male (N=690)	Female (N=910)	Total (N=1,600)
Age Bracket			
15-19	16.0	22.2	38.2
20-24	20.4	31.5	51.9
25-29	6.5	2.9	9.4
>29	0.2	0.2	0.5
Institution Ownership			
Private	18.4	19.1	37.5
Public	24.8	37.8	62.5
Level			
Part I	13.6	18.5	32.1
Part II	10.9	16.6	27.6
Part III	5.8	6.6	12.3
Part IV	12.3	14.9	27.2
Part V	0.5	0.2	0.8
Religion			
Christianity	31.4	42.1	73.5
Islamic	10.4	13.5	23.9
Traditional	1.4	1.2	2.6
Residential Type			
School Hostel	11.4	15.2	26.6
Off Campus	31.8	41.6	73.4

As shown in Table 2, out of 1,600 sampled participants, 690 (43.1%) of them were male while 910 (56.9%) were female. This is an indication that the population is skewed towards female. Also, 38.2% of the participants were within 15-19 age brackets out of which16.0% and 22.2% of them were male and female respectively. In addition, the majority (51.9%) of the participants were found within 20-24 age

brackets of which 20.4% and 31.5% were male and female respectively. While 9.4% of the participants were within 25-29 age brackets, 0.5% of them reported to be more than 29 years old. It was also observed from the result that more than half (62.5%) of the participants were students of government owned institutions while 37.5% of them were students of private institutions with the greatest number of them skewed towards female. About one-third of the sampled participants were in the 2nd and 4th year of their study in their respective institutions. Thirty-two percent of the participants were in the first year. Furthermore, the majority of the participants (73.4%) reported residing outside the school community and 73.5% of them were practising Christian religion.

Research Question: What is the dimension of online sexual behaviour of students?

To answer this question, all the items on online sexual behaviour were subjected to Exploratory Factor Analysis (EFA) in order to identify the latent constructs underlying the online sexual behaviour of students. During this process, the whole construct was scaled down into three factors (non-arousal, solitary-arousal and partnered-arousal). Each of these factors was regarded as a dimension of online sexual behaviour and was labeled with a nominal value ranging from one to three. The resulting scores were used to build the three dimensions of online sexual behaviour. The result is summarised in Table 3.

Table 3: Descriptive statistics of dimension of online sexual behaviour of students

Dimension of online sexual Behaviour	Frequency	Percentage
Partnered Arousal	546	34.1
Non-Arousal	776	48.5
Solitary Arousal	278	17.4
Total	1600	100.0

From Table 3, it was observed that 34.1% were reported to have experienced or expressed partnered-arousal while about half of them (48.5%) to have experienced non-arousal. Only 17.4% of the students have had experience of solitary arousal. In addition, the results on the

dimensions of online sexual behaviour among students were cross-tabulated with respect to students' demographic factors (sex, age, religion, institution type and place of resident) and were subjected to descriptive statistics. The result is presented in Table 4.

Table 4: Descriptive statistics of dimensions of online sexual behaviour across demographic factors of students

Demographic Factors	Pattern of Online Sexual Behaviour			
	Partnered Arousal	Non-Arousal	Solitary Arousal	Total
Gender	%	%	%	%
Male	10.5	23.2	9.4	43.1
Female	23.6	25.5	8.0	56.9
Age Bracket				
15-19	18.1	15.1	5.0	38.2
20-24	13.8	27.8	10.4	51.9
25-29	2.0	5.4	2.0	9.4
30 and above	0.2	0.2	0.0	0.5
Institution Ownership				
Private	18.6	8.0	10.9	37.5
Public	15.5	40.5	6.5	62.5
Religion				
Christianity	30.4	30.5	12.6	73.5
Islamic	3.6	16.1	4.1	23.9
Traditional	0.1	1.9	0.6	2.6
Residential Type				
School Hostel	16.4	5.1	5.1	26.6
Off Campus	17.8	43.4	12.2	73.4

From Table 4, it was observed that 10.5% of male participants and 23.6% of female participants were found to have experienced partnered arousal. While 23.2% and 25.5% of male and female participants had exhibited non-arousal respectively, only 9.4% and 8.0% of male and female participants had claimed to have exhibited solitary arousal respectively. With these figures, it is concluded that online sexual behaviour was relatively more prevalent among female than male students and was skewed towards non-arousal.

It was also observed that 18.1%, 13.8%, 2.0% and 0 (0.2%) of participants who claimed to have demonstrated partnered arousal were within the age range of 15-19, 20-24, 25-29 and 30 years and above respectively. While 15.1%, 27.8%, 5.4% and 0.2% of participants that manifested non-arousal were found within the age ranges of 15-19, 20-24, 24-29, and 30 years and above respectively, only 5.0%, 10.4%, 2.0% and 0.0% of those who were within the age ranges of 15-19, 20-24, 25-29 and 30 years and above were found to exhibit solitary arousal respectively. The implication of these figures is that online sexual behaviour was more prevalent among students within the age range of 20-24 years than other age groups. It was observed that 18.6%, 8.0% and 10.9% of participants that exhibited partnered arousal, non-arousal and solitary arousal respectively were students of private institutions while 15.5%, 40.5% and 6.5% of those that claimed to have expressed partnered arousal, non-arousal and solitary arousal respectively were students of government owned institutions.

Also, 30.4%, 30.5 and 12.6% of the participants that practise Christian religion were found to have experience partnered arousal, non-arousal and solitary arousal respectively, while 3.6%, 16.1% and 4.1% that reported to have expressed partnered arousal, non-arousal and solitary arousal were those practicing Islamic religion. Only 0.1%, 1.9% and 0.6 % them that claimed to be practising traditional religion were found to have exhibited partnered arousal, non-arousal and solitary arousal respectively. Lastly, the results showed that 16.4%, 5.1% and 5.1 of those who manifested partnered arousal, non-arousal and solitary arousal were campus residents while 17.8%, 43.4% and 12.2% of the participants that exhibited partnered arousal, non-arousal and solitary arousal were living outside the campus.

Research Hypothesis: Demographic factors will not significantly predict the online sexual behaviour of students.

This hypothesis was tested using regression analysis. The result of the regression analysis on the predictive contribution of the combination of the six explanatory variables (sex, age, level, religion, place of residence and institution type) on online sexual behaviour of students are summarized in Table 5.

Table 5: Summary of multiple regression analysis on the predictive contribution of explanatory variables on online sexual behaviour

Model	R	R Square	Adjusted R Square	Std. Error	P
Sex					
Age					
Level					
Religion	0.366[a]	0.134	0.131	12.56012	0.000
Residence					
Institution Type					

Dependent variable: online sexual behaviour

The demographic factors explored as predictors of students' online sexual behaviour were gender, age, level, religion, place of residence and institution type. As observed from Table 1, a coefficient of determination R-square value of 0.134 and Adjusted R-square value of 0.131 were obtained. This is an indication that the model can account for at least 13.1% and at most 13.4% of any variance observed in online sexual behaviour. The value was statistically significant at 0.05 level. This implies that the combination of all the demographic factors (gender, age, level, religion, place of residence and institution type) are potent predictive factors of students' online sexual behaviour. Furthermore, the predictive contributions of each of the demographic factors to online sexual behaviour of students were determined. The result is presented in Table 6.

Table 6: Influence of demographic factors on students' online sexual behaviour

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	30.626	2.787		10.988	0.000
Gender	-3.963	0.645	-0.146	-6.142	0.000
Age	0.260	0.141	0.055	1.847	0.065
Tertiary institution	-11.723	1.052	-0.421	-11.145	0.000
Level	0.010	0.003	0.089	2.959	0.003
Religion	2.132	0.649	0.081	3.285	0.001
place of residence	12.164	1.205	0.399	10.091	0.000

 a. Dependent variable: online sexual behaviour

R Square =0.134, Adjusted R Square = 0.131

As shown in Table 6, out of the six demographic variables of students, gender (B = 0.3.963; t = -6.142; p <0.05), tertiary institution type (B = 11.723; t = 11.145; p <005), level (0.010; 2.959; p <0.05), religion (B = 2.132; t= 3.285; p <0.05) and place of residence (B = 12.164; t = 10.091; p < 0.05) were found to be significant, only age (B = 0.260; t = 1.847; p >0.05) of the students was not significant. Furthermore, while level, religion and place of residence are direct and positive predictors of online sexual behaviour of students, gender and tertiary institution type inversely predicts it. This is an indication that for every unit of gender, age, institution type, level religion and place of residence, there is a corresponding contribution of -3.963, 0.260, -11.723, 0.010, 2.132 and 12.164 to the online sexual behaviour of students, It can then be summarized that all the demographic variables can account for 13.4% of the variability in online sexual behaviour of students. In summary, place of residence was the strongest predictor of online sexual behaviour among students.

Discussion

The focus of this study was to explore the predictive contribution of demographic factors on students' online sexual behaviour in Osun State. The researcher's belief was that if school counsellors and school managements are aware of these explanatory factors, appropriate guidance and counselling intervention strategies would be developed to reduce its adverse effect on the life of students, and allow students to take healthy sexual and reproductive health decision. The finding from the study showed that almost half of the sampled students reported to have expressed non-arousal form of online sexual behaviour to self or to another person. These online sexually related exercises are not centered around materials that are sexually stimulating, but include relational experiences such as visiting educational sites, looking for dating partners on the web. Notwithstanding many advantages of this type of online sexual behaviour, individuals may experience the negative consequences of it such as the problematic use of internet, unwanted sexual approaches, cyberbully and violence, relationship breakdown, sexual exploitation and abuse, and even sudden death if not properly expressed (Jonsson, 2015).

Approximately one-third of the students have expressed partnered-arousal form of online sexual activities with others. This is an indication that online sexual activities such as, exchanging instant texts about fantasized sexual acts with someone else, participating in sexual acts simultaneously with another person on webcam and online pornography have been expressed by this group of students. Students that ever engage in these online sexual activities with partners usually stimulate each other sexually by exchanging explicit digital text messages, images, and videos of themselves. This sometimes may have socially harmful effects on online sexual partner especially if they are anonymous partners or strangers to each other. This corroborates the submission of Arulogun, Agbu and Dipeolu (2016) that many students and young adults that ever had online chatting admitted discussing relationships with strangers. Since many unsafe sexual practices can be learned or expressed as it is found in the partnered-arousal from online sexual behaviour, regular sexuality education is one of the measures that must be put in place in various institutions to prevent students from socially harmful and negative health effects of online sexual activities.

In terms of gender difference, this study found that female students had a slightly higher percentage above male students when non-arousal form of online sexual behaviours are expressed. The finding deviated from the submission of Beutel et al., (2017) which reported higher score for men against women in a similar study. The reason for the difference in the results from the two studies may be attributed to factors such as different sample size used, age range of the participant as well as cultural beliefs and value system of the nations (settings) where the studies were conducted. But just like the submission of Wery and Billieux,(2016), this is an indication that female students are more interested in online sexual activities than male students.

Another factor identified in the study is religious factor. Although, studies relating to religious factors and online sexual behaviour is very scarce in the literature probably as a result of internet development which has influenced human sexuality. Ordinarily, it is expected that religion will play a positive role in shaping the sexual behaviour of students due to the indoctrination of moral lessons and beliefs associated with the three main types of (Christianity, Islamic and traditional) religion being practised in Nigeria. Participation in religious activities and belief in a spiritual power have been identified as protective factors in a number of adverse environments (Richardson & Stoneman, 2015) and it has also helped young people survive difficult situations (Szaflarski, 2013). However, in this study, it was found that partnered arousal is more expressed among those that are practising Christianity. The implication of this is that a majority of the students that are at risk of online sexual behaviour are those practising Christianity followed by those practicing Islamic and traditional religion.

In terms of age, it has been reported and identified in this study that those students in active age of 20-24 years manifested non-arousal more than those in other age groups did. It is an indication that this active population may be at risk of negative consequences of online sexual behaviour if measures to mitigate the negative exhibition of risky sexual behaviour are not put in place. The finding therefore affirms previous documentation of Ogungbamila, (2013); Arulogun, Ogbu and Dipeolu (2016) that young people within the age bracket of 20-24 years reported more negative attitude toward internet sexual related activities. Another demographic factor that may require the intervention of

counselling psychologists is the institution ownership type. It was found in this study that 40.5% of sampled students were schooled in the government owned institutions, which belong to the State and Federal government, and the majority of these students were residing outside the school community. It is believed that students who are living off-campus are likely to exercise more freedom of online risky sexual expression than those that are living within the school campus and this may put them at risk of sexual violence and exploitation.

The result of testing the hypothesis indicated that each of the demographic factors (gender, religion, institution ownership, residential type) has a statistically significant contribution toward online sexual behaviour of students, only age appeared to be insignificant. More importantly, place of residence was the strongest predictor of online sexual behaviour among students. It can therefore be summarized that demographic factors are potent enough in predicting online sexual behaviour of students. Previous studies in Nigeria have affirmed the influence of student's demographic factors on sexual behaviour (Ogungbamila, 2013; Arulogun, Ogbu & Dipeolu, 2016; Ifeadike et al., 2018) though empirical information on the demographic factors of students' online sexual behaviour is still very scanty in sexuality literature.

Counselling Implications

Since it has been established that demographic factors of students in tertiary institutions are predictive factors of their online sexual expression, it becomes imperative for counselling psychologists to come up with measures such as counselling tips, psychotherapies and other counselling frameworks that can mitigate the negative effect of the risks associated with online sexual behaviour among this active age group.

A more inclusive sexuality education is highly required to prevent students from making unhealthy sexual decision. This would empower young people to develop stronger, positive and healthy relationships with opposite sex within and outside the school. The university counsellors can render this sexuality education from time to time, especially during orientation programme organized for the fresh students.

When there are sensitive issue like online sexual problem, many victims may want to seek help using online approach. Online

counselling services can only be provided when the counselling service provider is well grounded and skillful enough to help clients or victims of online sexual issues. Therefore, school management and education policy makers need to ensure they employ quality and competent counsellor who can provide students with online counselling service. They must also ensure that stable and functioning internet facilities are available for effective service delivery.

Conclusion

This study concluded that demographic factors are predictive and explanatory factors for online sexual behaviour among tertiary institution students even though place of residence was the strongest predictor of online sexual behaviour among students.

Recommendations

Now that it has been empirically established that students of tertiary institutions often exhibit online sexual behaviour with associated sexual risk-taking behaviours. This study therefore recommended that counselling psychologists and sex educators should develop a comprehensive programme that will specifically promote safe online sexual practices among students.

Following the increased use of the internet for sexual expression among students which is currently influencing the real social interactions and practices, curriculum development experts should as a matter of urgency revise all human sexuality related courses or subjects and factor-in online sex education. This may reduce the magnitude of risks of experiencing associated consequences among students.

Finally, government should provide necessary and required supports for professional counsellors and other social workers to embark on awareness and sensitization programme on dangers associated with unsafe online sexual practices in schools.

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Appendix
Online Sexual Behaviour Scale

Dear Respondent,

This instrument is designed to elicit information on-line sexual behaviour of students, The information to be elicited with this instrument is strictly for academic purposes. All information provided will be kept confidential. We humbly seek your support and cooperation.

Thank you.

SECTION A: **General Information**

1. Sex: Male ⬭   Female ⬭
2. Age as at last birth day: ………..……………………………………….
3. Academic Level (part): ………………………………………………..
4. Course of study: ……………………………………………………….
5. Institution Type: Public ⬭   Private ⬭
6. Religion Affiliation: Christianity ⬭   Islamic ⬭ Traditional ⬭

SECTION B: Online Sexual Behaviour Items

Please respond to each statement below by ticking (✓) the response that best describe your level of reflection to each of the items. Note that there is no right or wrong answer to any of the items.

KEY: ToM= True of Me, **SToM**=Somewhat True of Me**, NTR**= Neutral**, SUToM**= Somewhat Untrue of Me, **UToM**= Untrue of Me

S/N	ITEMS	Level of Reflection				
	In the last 12 months	**ToM**	**SToM**	**NTR**	**SUToM**	**UToM**
1	I have received message through social network platform (badoo, facebook, whatsapp, e-mail, twitter, etc.) from someone in which sexual activities were discussed					
2	I have sent message through social network platform (badoo, facebook, whatsapp, e-mail, twitter, etc.) to someone in which sexual activities were discussed					
3	I have sent message through social network platform (badoo, facebook, whatsapp, e-mail, twitter, etc.) with pictures to someone suggestive of sexual activity					
4	I have received message through social network platform (badoo, facebook, whatsapp, e-mail, twitter, etc.) from someone linking me to website with sexual content					
5	I have sent message through social network platform (badoo, facebook, whatsapp, e-mail, twitter, etc.) to someone linking him/her to website with sexual content					
6	Someone has asked me for sexual intimacy through social network platform (badoo, facebook, whatsapp, e-mail, twitter, etc.)					
7	I have asked someone for sexual intimacy through social network platform (badoo, facebook, whatsapp, e-mail, twitter, etc.)					
8	Someone has sent me messages that contain sexual content through social network platform (badoo, facebook, whatsapp, e-mail, twitter, etc.)					

9	I have sent messages that contain sexual content to someone through social network platform (badoo, facebook, whatsapp, e-mail, twitter, etc.)
10	I enjoy discussing matters relating to sexual activity with others online using my mobile phone or computer
11	I satisfy my sexual urge with others online using my mobile phone or computer
12	I have had sex with another person online using my mobile phone or computer
13	I have had real life sex (offline) with someone whom I met on the Internet
14	I have posted sexual pictures of myself on the Internet or via using my mobile phone or computer
15	I have sold sexual services to someone online using my mobile phone or computer
16	I have at least one online romantic partner whom I met online
17	I have more than one romantic partners in the real life that I met online

Ghana's Education in the Era of Flight Lieutenant Jerry John Rawlings: A Historical Review and Analysis, 1982-2001

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Abstract

This study examined the contribution of Flight Lieutenant Jerry John Rawlings to the development of education in Ghana. Specifically, the study focused on his introduction of the 1987 Education Reforms, and how the University Rationalisation Policy introduced by him affected tertiary education in Ghana. The study employed the appropriate historical and methodological approaches as its research design. It adopts the qualitative method and uses both primary and secondary sources of data to examine how education fared in Ghana under Rawlings. Interview guide was used to collect the primary data. Two persons were selected for the interview on the grounds of their knowledge about Rawlings. Again, they were present when Rawlings introduced the 1987 Education Reforms in Ghana. The study points out that Rawlings' contribution to education did not only shorten the duration of education but also, it built a school system that reflected the Ghanaian realities and that made the educated child more productive in the society.

Key words: Post-Independence; Products; Rationalisation; Reforms.

Introduction

Ghana's educational development first began as an informal or indigenous one until the coming of the Europeans, who introduced the western (formal) type of education. Western education started in the Gold Coast on 8th February, 1529 by the Portuguese. After the pioneering role by the Portuguese, other European merchants such as the Dutch, the Danes and the British also entered the field and provided education until the arrival of the Christian Missionaries, who took the country's education to the next level. On the attainment of

independence in Ghana in 1957, both the civilian and military governments provided education as part of efforts to rebuild the nation.

At this juncture, it is important, first of all, to historicise how and why Flt. Lt. J.J. Rawlings came to the political scene in Ghana. Flt. Lt. J. J. Rawlings staged a coup d'état that ousted the administration of the Supreme Military Council (SMC) II regime from office in 1979. After this, he put certain measures in place that returned the country to civilian rule. This issue, undoubtedly, brought the People's National Party (PNP) into power under the leadership of Dr. Hilla Limann on 24th September, 1979. However, due to mismanagement of the country's economy by Dr. Hilla Limann, (Gocking, 2005), Flt. Lt. J. J. Rawlings again, assumed power in a military takeover on 31st December, 1981 under the Provisional National Defence Council (PNDC). He thus administered the country as a military leader and Head of State from 1982 to 1992 and then as a democratically elected President of the fourth republic from 7th January, 1993 up to 2001.

Even though literature exists, studies that explore education in Ghana during the era of Rawlings such as Asiedu-Akrofi (1982) "Education in Ghana" in *Education in Africa: A Comparative Survey;* Bening (1990), *A History of Education in Northern Ghana 1907-1976*; Takyiwaa, Gariba and Budu (2007), *Change and Transformation in Ghana's Publicly Funded Universities* and Ibrahim Mahama (2009), *A Colonial History of Northern Ghana*, such works do not delve into the 1987 Education Reforms and its implications on contemporary Ghanaian education. Even Girdwood (1998) in his *Tertiary Education Policy in Ghana, An Assessment: 1988-1998*, which argues that Rawlings epitomised "a sustained attempt to define the place of tertiary education within the Ghanaian economic and political landscape," (Girdwood, 1998) did not pay particular attention to the 1987 Education Reforms, especially how it made the school children more productive in the society. His focus was to assess Tertiary Education Policy in Ghana within a decade, 1988-1998. *Education, Society and Development in Ghana* (Antwi, 1992) provided significant developments during the era of Rawlings that assisted the present study a great deal. However, he did not examine how education fared during the democratic periods of Rawlings from 1993 to 2001.

This paper examines the contribution of Flt. Lt. J.J. Rawlings to the development of Education in Ghana. Specifically, it firstly analyses

his introduction of the 1987 Education Reforms, especially the Junior Secondary School (J.S.S) and Senior Secondary School (S.S.S.) concepts. Secondly, the paper demonstrates how University Rationalisation Policy introduced by Flt. Lt. J.J. Rawlings affected tertiary education in Ghana.

The interpretation and analyses of data of this paper are based on primary and secondary sources. The primary data are derived from oral interviews and other sources such as old newspapers, minutes of meetings, white papers and government official records from the National and Regional branches of the Public Records and Archives Administration Department (PRAAD) in Ghana. The secondary data, on the other hand, are made up of history books and journal articles that examine the political and educational history of Ghana. The data are analysed qualitatively and diachronically using historical method. In all, two informants were interviewed based on their knowledge about Rawlings and the 1987 Education Reforms in Ghana. It is significant, to first of all, shed light on the nature of education that Flt. Lt. J.J. Rawlings wanted to be provided in the country.

Flt. Lt. J.J. Rawlings' view on education in Ghana

On assumption of office, the PNDC Government advocated ''a fundamental break from the existing neo-colonial relations, and from the existing foreign monopoly control over the economy and social life.'' (Gocking, 2005). As a result, Flt. Lt. J.J. Rawlings and his government set out to stabilise the economy and the country as a whole by first restructuring the political, social and economic systems of Ghana. Special importance was given to education, a sector which was seen as an engineering tool to help fuel the potency and viability of the other sectors of the Ghanaian economy. It is worthy of note that the Government introduced major reforms in education.

In order to realise this aspiration, Flt. Lt. J. J. Rawlings shaped education to reflect the philosophies and objectives of his government which included the creation of economic prosperity in the country. The PNDC Government wanted a ''reorientation of the structure and content of education based on a careful assessment of the changing conditions and needs of the nation and the world at large'' (Final Draft Report of the University Rationalisation Committee, 1988, p.1). As noted by Oquaye (2004, p.480), ''the PNDC Government intended that

its new educational system should be geared towards the realisation of the development goal of the nation.'' Mr. Rawlings linked the country's economic prosperity to its educational system (Oquaye, 2004). Due to this, the PNDC Government aimed at ''correcting the negative consequences of a steady decline in the quality of education over the past decade due to inefficient management and scarcity of educational materials and qualified personnel'' (Final Draft Report of the University Rationalisation Committee, 1988, p.1). The application of modern science and technology to education could not be achieved without equipping the potential manpower of the country and, as explained by Oquaye (2004), this necessitated a comprehensive restructuring of the education system in Ghana during the PNDC era.

The first thing the PNDC government did was to introduce allocation of quotas into secondary school admissions (Akoto, 2015). This was done to open access to secondary education in the country. Again, to ensure effective training of teachers, it restored the teacher-trainee allowances (state financial support) system in Ghana. This was intended to enable teacher-trainees have financial support to procure teaching and learning materials for their work and to have a sound stay in their various colleges (Akoto, 2015). One other significant thing the PNDC Government did was the introduction of curriculum enrichment programmes which aimed at bringing elements of national culture into the basic education system (Bekoe, 2010).

Apart from these, the government also tackled the issue of supply of primary school textbooks. This intervention was meant to ensure that primary schools all over the country would have common, relevant and recommended textbooks from the Ghana Education Service. Furthermore, the government introduced for the first time a single national uniform for all pupils in the public basic schools. One reason for this move was to distinguish pupils in the public schools from the private ones. It was also to let the pupils have an identity as Ghanaians (Akoto, 2015). One other significant thing which the PNDC Government is well remembered for was the 1987 Education Reforms in Ghana.

The 1987 Educational Reforms under Flt. Lt. J. J. Rawlings

The 1987 restructuring of education has been described as a major Educational Reform programme in Ghana (Primary Education Programme; Status & Report, 1992). The reform was proclaimed by the PNDC Secretary of State for Education in October, 1986. Its implementation, however, took place from September, 1987. In the estimation of Oquaye (2004, p.479), Flt. Lt. J. J. Rawlings saw the old system of education as ''a narrow conception of education which had become increasingly obsessed with academic speculation to the virtual exclusion of serious practical skills''. As it is observed, "the aim of the old system was to obtain paper certificate as a prerequisite for employment and thus those who could not achieve this objective fell by the wayside" (Oquaye 2004, p.49).

This claim by Oquaye needs to be interrogated because it appears that he has watered down the education system of the National Redemption Council (NRC) Government in his quest to highlight the need for education reforms by Flt. Lt. Jerry John Rawlings. This is because the educational reforms of the NRC Government were also intended to direct education to the socio-cultural needs and human resource development of the country and as such cannot be described as a narrow-based education (Oquaye, 2004). For example, the NRC Government set out to provide education which would develop ''fully the natural endowments of the individual in order to make him first of all, a responsible citizen, useful to the society economically and in other ways, and secondly, a cultured and humane individual with a high sense of morality'' (White Paper on the Report of the Education Review Committee, 1968, p.6). Furthermore, it was the educational system of the NRC which Flt. Lt. J. J. Rawlings implemented fully under the 1987 Educational Reforms.

Be that as it may, with the new educational system of the PNDC Government, every child of school-going age was to have nine years of basic education, comprising six years primary school and three years Junior Secondary School (JSS). In effect, every Ghanaian child was required to enter Primary one at age six and to go through Primary six and through to JSS. Basic education was then followed by three years of senior secondary school and three or four years of tertiary education (Dorkenoo, 1987; Antwi, 1992; Primary Education Programme, Status and Report, 1992). This educational reform thus reduced the duration

of pre-university and university education from 17 to 12 years (Antwi, 1992).

In general, the reforms, according to Antwi (2004, pp.44-45), set out to ''provide increased access to education especially in the northern half of the country and in other areas where the intake was persistently low by making basic education available to every child; to make senior secondary education available to 50 per cent of junior secondary school (JSS) leavers; and to provide tertiary education for 25 per cent of the senior secondary school leavers.'' The reform was largely drawn up by the PNDC Government ''to ensure that the country works towards the achievement of our national goals of expanding access to education, improving the quality of education, making education more relevant to the socio-economic needs of the country and of the individual'' (Primary Education Programme, Status and Report, 1992, p.1) The most significance aspect of the 1987 Educational Reforms, in the estimation of Akoto (2015), was the JSS system. An effort is thus made here to discuss the JSS system in detail.

The Junior Secondary School (J.S.S) System

It must be stated from the onset that the JSS concept was not an original idea of the PNDC Government. This educational policy was introduced by Colonel Ignatius Kutu Acheampong during the NRC regime, but could not be implemented due to inadequate funds and lack of political will (Bentum, 1987; Tetteh, 1999). Schools which were turned into JSS by Col. I. K. Acheampong, were already in existence on experimental basis and thus it is argued that Flt. Lt. J. J. Rawlings streamlined the whole idea pertaining to the JSS system and gave it a new emphasis (Akoto, 2015). It is also suggested that the PNDC Government adopted the JSS concept and implemented it fully.

Be that as it may, under the 1987 Education Reforms, the curriculum was designed in line with the PNDC Government's objectives that the child should be equipped with basic competencies of numeracy (ability to manipulate figures); literacy (ability to read and write); and socialise harmoniously in the Ghanaian setting (Primary Education Programme, Status and Report, 1992). An examination was introduced at the end of the three years JSS programme to ensure the acquisition of these competencies and for subsequent selection of qualified pupils into a second cycle institution in subjects such as

English Language, Mathematics, Social Studies, Science, Agricultural Science, a Ghanaian Language, Soil Science, Animal Husbandry, Crop Production, Cultural Studies and Vocational Skills made up of Leather work, Textiles, Pottery, Carving, Book crafts. Other subjects were French (optional), Pre-Technical Skills and Physical Education (Dorkenoo, 1987).

Selection depended on two factors. First, the ability of pupils to pass in the final year JSS examination and secondly, their choice of courses at the SSS (Dorkenno, 1987). With the cessation of the Common Entrance Examination for pupils in Primary six (6) and seven (7), every pupil in public and private school got automatic admission into the JSS. The expectation was that 70 per cent of all pupils who completed the JSS would proceed to second cycle institutions. The remaining 30 per cent would then enter into various apprenticeships such as masonry and carpentry. In September, 1987, the time of the commencement of the new system, it was estimated that 250,000 pupils would enter the Junior Secondary Schools (JHSs).

However, those who have already passed the JSS entry stage, that is pupils in Middle Forms one (1) to four (4), continued to sit for the Common Entrance Examination (C.E.E.) until 1989 when it was finally phased out. By 1987, there were 118 JSSs already in the country. These schools started as model JSSs during the SMC I administration in 1976. In the estimation of Mrs. Vida Yeboah, the then Under-Secretary for Education and Culture, the 118 Model JSSs were restructured in such a way that the equipment required to run these schools were so expensive that it did not yield its intended impact (Dorkenno, 1987).

The objectives for the new emphasis on the JSS system by the PNDC Government were first, to enable products acquire a considerable knowledge in the fields of Science and Mathematics which would ginger them up into a world of scientific and technological discoveries to sustain the government's policy of rural industrialisation. Secondly, it was to expose pupils to pre-vocational and technical skills in order to enable them use the skills acquired at this level and in particular, to help those who could not further their education to a higher level to work with the skills acquired. The PNDC Government wanted the JSS programme to build a school system that reflected the

Ghanaian realities and that made each formally educated child more productive (GNA Correspondent, Ghanaian Times, 1988).

This explains why the new scheme set out to make the ''individual innovative and constructive in changing the old order of cultural, social and political development of the country'' (Bentum, 1987, p.3). Also, the JSS system was intended to make pupils understand other foreign languages such as French since English was compulsory, and a Ghanaian language which would facilitate easy communication in Ghana and the rest of the world. Moreover, the JSS system was designed to help pupils have an in-depth knowledge of the general set-up of Ghanaians with particular reference to cultural and social studies so that they could help their societies to be more adaptable to the changing times. On this issue, Mr. Kofi Totobi-Quakyi stated ''whatever new approaches we are adopting now cannot be divorced from the need to shift the content and orientation of education towards the inculcation of new [and acceptable] values'' (GNA Correspondent, Ghanaian Times, 1988, p.3).

Basic education was thus restricted to ensure that children develop the basic life determining and supporting skills for the discovery of their full capabilities to function efficiently in the society (Primary Education Programme, Status and Report, 1992). The PNDC Government envisaged that ''a product of the JSS is expected to make one of the objectives of the scheme achievable in the acquisition of vocational and technical skills to accelerate the rural industrialisation programme which has become the primary concern of the government'' (Bentum, 1987, p.3). In this way, the products of the JSS would be able to acquire the requisite knowledge, skills and competencies needed to study at the higher levels of education. This pre-intervention in the long run will make it easier for the country to produce more qualified professional medical doctors, teachers, engineers, lawyers and technicians. This would help to reduce over-reliance on foreign experts and thereby facilitate their absorption into the factories and industries due to their training and specialisation in various fields. Also, the JSS was designed to support agricultural productivity and self-employment (GNA Correspondent, People's Daily Graphic, 1987).

This is corroborated by Kofi Dantsil who stated that ''the JSS concept predicts practical oriented end-products'' (Dantsil, 1987, p.5) as boys and girls would be taught academic, technical and vocational

subjects. This shows that the new educational reforms of Flt. Lt. J. J. Rawlings was child-oriented which centred on children directing their studies to tap their creativity effectively. To this end, Mrs. Sarah Opong, who was the then Co-ordinator for the JSS programme, noted that the ''concept is aimed at, among others, pre-disposing pupils to basic technological knowledge and skills so that they can decide on what technical skills to follow in future'' (Beecham, 1987, p.1). This is also confirmed by Mrs. Sylvia Boye, when she stated that ''education should help the individual to understand himself and others and enable him to determine his own future as well as to contribute to the development of the society'' (GNA Correspondent, People's Daily Graphic, 1987, p.8).

It appears from the foregoing discussions that the JSS system did not face challenges. This was not so as it was faced with some difficulties. First, there is the question of the effective preparation for the full implementation of the JSS system in Ghana. Here, financial difficulties hindered the early efforts and militated against the smooth turning of the JSS system into a functional reality in the entire country. It was not until 1988 that $45 million was given by the World Bank OPEC Fund for the JSS programme (Dorkonoo, 1987) which was intended to be used for infrastructural expansion and thus increased intake of JSS pupils in the schools across the country.

The programme started without sufficient preparation and in the words of Oquaye (2004), it was ''hurriedly executed.'' In some parts of the country such as the Brong Ahafo Region, there was a feverish preparation for the JSS programme. A number of communities in this area feverishly prepared through self-help. For example, classroom and workshop blocks were funded through special levies and voluntary contributions. This was done so that the JSS programme could take off in the area. In many cases, considerable enthusiasm had been shown by the rural people but their meagre resources proved unequal to the task. Several communities felt over taxed in terms of contributions towards JSS infrastructure (Oquaye, 2004)

There is also the issue of qualified teachers required to teach in the JSSs. Obviously, in the JSS system, if the performance of teachers was not good, the whole system would not be successful no matter the amount of financial resources pumped into it. As Wotordzor (1987, p.3) observed, ''in planning for any educational programme, serious thought

must be given to the type of teacher to service and conduct it.'' Even though there were adequate teachers for subjects such as social studies, science and languages, others like vocational and technical subjects did not have sufficient teachers and in the estimation of Oquaye (2004, p.3), ''a dearth of teachers, particularly science teachers plagued the system.'' The trades could not be taught by non-specialists in the field as they needed special attention and professional training. The teacher required to provide education for developmental needs, as expected by the 1987 Educational Reforms, should be capable of identifying the special attitudes of learners and help them to develop their special gifts so that they would contribute effectively to the socio-economic development of the country (Oquaye, 2004). There was also the problem of inadequate facilities such as workshops for practical and science laboratories for experiments as well as shortage of technical workshops, textbooks and furniture. These facilities were crucial for products of specialist schools to tackle their tasks with ease.

The foregoing discussion does not mean that the PNDC Government did not adopt measures to solve the problems in order to ensure the smooth take-off of the programme. In order to overcome the problem of teachers who would teach in the new system that was introduced, a series of courses were organised for the teachers in the JSS. Eligible participants for the courses were post-secondary trained teachers who were exposed to the JSS syllabus in the various subjects which would be taught in the new system (Dantsil, 1987). The teachers were also exposed to the new approach of teaching in the JSS. They were trained in subjects such as Mathematics, Science, Agricultural Science, Physical Education, English, Social Studies, Ghanaian Languages, French, Vocational Skills, Technical Skills, Life Skills and Cultural Studies which comprised Religion, Music and Drama (Dantsil, 1987). By 10th September, 1987, 15, 000 teachers drawn from all over the country had been trained as part of the preparation towards a successful implementation of the JSS programme. Also, 240 teachers had been trained at the primary school level to prepare pupils for the JSS (Acheampong, 1987).

The training course for post-secondary trained teachers helped them to have an advanced knowledge of all the new learning areas embodied in the JSS curriculum and hence it is argued that the PNDC Government stopped the practice of the middle school system where a

teacher would take one class and would teach all the subjects. The PNDC Government was the first to introduce subject teaching in basic schooling in Ghana. The workshops and courses for teachers refreshed their minds and improved upon their teaching methodologies. This is confirmed by (Gyampoh & Acheampong, 1987, p.3) that teachers ''managed during their studies to gather new ideas and update their facts for a new undertaking.''

By January, 1987 the PNDC Government had committed itself starting full implementation of the JSS system on 1st September, 1987. This was confirmed by the Chairman of Education Commission in its letter dated 7th January, 1987 that ''I am writing to confirm that the Commission is fully satisfied with the extensive preparations which the Ministry of Education and Culture is making to ensure the successful take-off of the 9-year Basic Education programme in September, 1987'' (Dorkenoo, 1987, p.3) On this date, JSS one (1) replaced Middle Form one (1) classes. Apart from the JSS concept, the PNDC Government also had a clear focus for second cycle and tertiary education which formed part of the reforms.

Second Cycle and Tertiary Education

The changes in the content and structure of education were not only felt with the implementation of the JSS system but also the second cycle and tertiary levels as well. By 1987, exactly 26 years after the promulgation of the Education Act of 1961, only seven percent of children of secondary school-going age were in school ((Final Draft Report of the University Rationalisation Committee, 1988). At the secondary school, the reform was intended to intensify time utilisation. As was the case of the JSS, parallel syllabuses were developed for senior secondary schools. This placed emphasis on the study of Science, Mathematics and Indigenous languages, the major objective being ''to make each student competent in the current world of mass consumer products and services'' (Antwi, 1992, p.45).

The institutions of higher level were also shaped to serve the needs of the country. The PNDC Government intended to ''rationalise education at the tertiary level to ensure relevance to national development in harmony with lower levels of education and cost effectiveness in the use of manpower and resources'' (Final Draft Report of the University Rationalisation Committee, 1988, p.1). This

was done through ensuring the reduction of waste and cost of education, reorganisation of the management of education to infuse efficiency and to strengthen vital units of the entire management of education for improvement in planning, budgeting, monitoring and evaluation (Final Draft Report of the University Rationalisation Committee, 1988).

Tertiary institutions were put into two categories during the PNDC era namely, potential tertiary institutions and viable tertiary institutions. The former was made up of teacher training colleges, polytechnics and other post-secondary training institutions. Even though some of these institutions run tertiary courses for their students, they did not have the potential to upgrade their staff, admission requirements, libraries and other facilities to become viable tertiary ones (Final Draft Report of the University Rationalisation Committee, 1988). The latter referred to universities and some diploma awarding institutions that satisfied the requirements for consideration as tertiary institutions.

The PNDC Government envisaged a new system of tertiary education made up of the universities, the polytechnics and regional colleges of applied art, science and technology. These institutions came under supervision and co-ordination of the division of the Ministry of Education and Culture in charge of higher education (Final Draft Report of the University Rationalisation Committee, 1988). The government set out to introduce reforms in the universities and sought to rationalize them to reflect the needs of the country. This led to the passage of the University Rationalisation Policy in December, 1986 (Final Draft Report of the University Rationalisation Committee, 1988).

University Rationalisation Policy (U.R.P.)

To obtain basic information for a medium-term university sector development plan to be formulated, the PNDC Government formed the University Rationalisation Committee (URC) in December, 1986. Members of the Committee were: Mrs Esi R. A. Sutherland-Addy, PNDC Under-Secretary for Education and Culture, (Chairperson); Mr. J. B. Abban, Senior Lecturer and Head of the Department of Economics, University of Ghana; Dr. M. A. Awuku, Senior Lecturer in Science Education, University of Cape Coast; Dr. E. A. Tackie, Senior Lecturer, Department of Architecture, Kwame Nkrumah University of Science and Technology, Kumasi; Professor C.

Okonjo, Consultant on Education to the Ministry of Education and Culture; and Professor B. C. F. Lokko, Director, School of Administration, University of Ghana (Final Draft Report of the University Rationalisation Committee, 1988).

By 1986, resources for teaching at the various universities had declined while the overall costs of running the universities were high (Final Draft Report of the University Rationalisation Committee, 1988). Again, the unit cost per student at the universities was very high as compared to those in secondary and basic schooling (Final Draft Report of the University Rationalisation Committee, 1988). For example, student maintenance facilities and amenities per student at the University of Ghana in 1988 cost $2, 191.00 (Final Draft Report of the University Rationalisation Committee, 1988). Moreover, the universities used large amounts of foreign exchange. The quality of teaching and learning at the universities had fallen largely due to high student-staff ratios and inadequate teaching materials and learning resources and services like libraries (Final Draft Report of the University Rationalisation Committee, 1988).

These, therefore, required a comprehensive study of the university sector to first, analyse the then cost structures and to propose necessary changes in order to increase the cost-effectiveness for producing qualified graduates (Ayam, 2019). Secondly, the cost of completing uncompleted buildings at the universities, the extent of utilisation of the existing facilities and the need for additional ones had to be assessed. There was also the need to assess teaching material requirements, departmental structures, course offerings and options (Final Draft Report of the University Rationalisation Committee, 1988).

Given the background to the appointment of the University

Rationalisation Committee (1988), their major tasks would include:

> (a) examine the overall cost structure of the Universities and assess in which areas resources need to be increased so as to allow a more efficient use of resources and in which areas could be decreased with no deleterious effects; (b) examine, in particular detail, non-

departmental activities such as municipal services and the cost and performance implications of alternative ways of financing these; (c) examine the large budget component which does not cover salaries or teaching materials with a view to re-assessing the present ways of financing these; (d) make a detailed study of student financing and the possibilities and implications of removing the feeding subsidy and charging for accommodation; (e) assess the levels of subsidy provided to staff e.g. Housing, health services, electricity and water charges, their comparability with those offered in other sectors and the feasibility and implications of their reduction or increase; … (p) assess any other aspect of University organization having a bearing on improving the cost effectiveness while maintaining or increasing the quality of teaching; (q) in the context of national educational reforms, assess the role of University education as an element of tertiary level of education and make suggestion for the fourth cycle of education (p. ii-iv).

With these terms of reference, which were intended for a national policy on higher education to be established, and a medium term plan for reforming and revamping the universities to be formulated, the University Rationalisation Committee (URC) first of all, embarked on a preliminary study to ascertain the state of the institutions on the ground and to explore all aspects of the universities. Apart from these, URC also consulted experts in the areas of Manpower, Financial Structures, Academic Structures, Administration, Income Generation and Facility Utilization in order to have an in-depth knowledge about the aforementioned tasks assigned to them.

The URC spent one year before issuing its final report on 15th February, 1988, with their recommendations; a summary is provided here for emphasis:

> (a) There should be an addition of a fourth cycle of education which would create centres of excellence within the country for the pursuit of research, the propagation of research findings and the expansion of the knowledge base of academic personnel; (b) that tertiary system of education should be made up of 3 main groups—the Universities and University Colleges, the Polytechnics and a Unified Comprehensive College System (Regional Colleges of Applied Arts, Science and Technology; (c) that all tertiary institutions should come under the Ministry of Education and Culture; (d) to ensure democratic aspirations and efficiency of the administrative system, each university should have a chancellor, who should be an eminent citizen of Ghana, expansion of the membership of the university council, the Pro-Vice Chancellor, the Registrar and Chief Director for Higher Education should sit in attendance (Final Draft Report of the University Rationalisation Committee, 1988, pp. 5-12).

Polytechnic education was also reshaped through the work of the URC. First, such institutions were made to undertake courses to cover areas such as Home Management, Computer Science, Computer Programming, Transport Management, Library and Archival Studies, Social Work, Adult and Literacy Education, Legal Administration, Physical Planning, Statistics, Food Technology, Industrial Design, Graphic Design, Estate Management and Printing Technology (Final Draft Report of the University Rationalisation Committee, 1988). Apart from these, other courses to be offered for diploma in the Polytechnics were General Course in Engineering, General Course in Construction,

Refrigeration Mechanics, Motor Vehicle Mechanics Work, Painting and Decoration, Carpentry and Joinery, Basic Cookery, Building Quantities and Secretarial; Polytechnics were to adopt the semester and course credit system; external examinations should be abolished in tertiary institutions (Final Draft Report of the University Rationalisation Committee, 1988).

On the issue of student funding, the recommendations of the URC were as follows: firstly, free tuition should be given to all Ghanaian students at the tertiary institutions and that the policy on student maintenance should match national resources and priorities of the country. Again, tertiary students should be made to pay a uniform maintenance charge of recreational facilities, food and accommodation. Furthermore, every student at the tertiary level should be eligible to access loans to cover maintenance charges to be repaid after graduation and that full scholarships should be given to only exceptional students who offer courses intended to fulfil manpower requirements of the country (Final Draft Report of the University Rationalisation Committee, 1988).

These were the developments that shaped the PNDC Government's effort to rationalise spending at the tertiary level of education in order to improve its quality and increase access to all qualified students. In view of this, the government's effort at directing higher education to ''meet the needs of the national economy and spearhead the badly needed movement towards sustained and self-reliant national development both by providing the right calibre of manpower and research base'' (Final Draft Report of the University Rationalisation Committee, 1988, p.36) would be achieved in the country. This also explains the determination of the government to reposition tertiary education in order to effectively absorb the number of children in schools who would reach tertiary level due to the implementation of the Free and Compulsory Universal Basic Education (FCUBE) programme in the country. Apart from these, it was also the wish of the government to contain the cost of higher education within the national economic growth.

These measures were all taken during the military regime of the PNDC Government. As Ghanaians always wish to have a democratic rule, the PNDC era which began with dictatorship ended with democracy when the Draft Constitution was adopted through a

referendum on 28 April, 1992, which also brought into power the administration of the National Democratic Congress (NDC) after it had won the 1992 General Elections and was inaugurated into office in January, 1993. The NDC was indeed, an offshoot of the PNDC and as Agyeman-Duah (2008, p.23) argues, it was ''reputed to have roots in the military regime of the so-called revolutionary era.''

Flt. Lt. J. J. Rawlings was sworn in as the first President of the Fourth Republic of Ghana and he ruled the country for two terms which spanned from 1993 to 2000. As a matter of fact, there was no significant change in the direction of education in the period of Flt. Lt. J. J. Rawlings' civilian administration from that of the military rule except that the former had a constitution which clearly spelt out the objectives of education at all levels in Ghana.

With the 1992 Constitution in force, the objectives for education which were intended to shape and direct education in Ghana were made explicit for Governments to follow. It stated that, ''the state shall provide educational facilities at all levels and in all the Regions of Ghana, and shall, to the greatest extent feasible, make those facilities available to all citizens'' (Ghanaian Constitution, 1992, p.40; Afari-Gyan, 1998, p.33). In the field of Basic Education, it called for the provision of free, compulsory and universal basic education for the country. Secondly, it provided for ''equal and balanced access to secondary and other appropriate pre-university education, equal access to university or equivalent, with emphasis on Science and Technology'' (Ghanaian Constitution, 1992, p.40; Afari-Gyan, 1998, p.33).

This provision of the 1992 Constitution of Ghana focused on Science and Technology. This issue appears to have been a restatement of the major objective of the 1987 Educational Reform which was that children should be trained to acquire considerable knowledge in the fields of Science and Mathematics for a world of scientific and technological discoveries in order to sustain the policy of rural industrialization embarked upon by the government (Bentum, 1987; Final Draft Report of the University Rationalisation Committee, 1988). It is argued that the educational provisions of the 1992 Constitution of Ghana were largely influenced by the political decisions of the PNDC and NDC Governments. This confirms the assertion by Harber (1989, p.3) that ''schooling and politics are therefore inextricably linked in all societies.'' Hence, schooling in Ghana often reflects government's

policy for education and to a large extent, this is influenced by the ideological orientations, values and societal politics at a given period.

Again, the 1992 Constitution of Ghana stated that government should use the country's resources for the provision of ''a free adult literacy programme, and a free vocational training, rehabilitation and resettlement of disabled persons and life-long education.'' (Ghanaian Constitution, 1992, p.40; Afari-Gyan, 1998, p.33). These were the benchmarks that directed and shaped educational provision during the administration of the NDC Government up to 2000.

Conclusion

This work, relying on primary and secondary data, has demonstrated how education in Ghana fared under Flt. Lt. J.J. Rawlings for about 20 years. By the time Flt. Lt. J.J. Rawlings left the reins of government on 6th January, 2001, not only had he transformed the education system of Ghana but also, the JSS and the SSS concepts that he fully implemented took the country's education to the next level. It shortened the duration of education in Ghana making it more cost effective. Again, the products were dignified and pre-disposed to basic technological knowledge and skills intended to make them self-reliant, thereby addressing the issue of unemployment in the country. Furthermore, the products became agriculturally inclined intended to assist in the field of farming in Ghana. As such, Flt. Lt. J.J. Rawlings built a school system that reflected the Ghanaian realities and that made each formally educated child more productive in the society. These successes, which Flt. Lt. J.J. Rawlings chalked in the field of education was, more or less, largely due to his commitment to ensure that the country's education brings about socio-economic development and emancipation.

Recommendations

The educational interventions of Rawlings have significant implications for today's education in Ghana. Indeed, the current duration of both Junior High School and Senior High School are three years. Again, there is cost sharing at the tertiary institutions of Ghana where students and government are made to pay for the cost of education. It is, thus, recommended that:

1. In order to have quality education in the country, especially at the tertiary level, the cost of education should continue to be shared by both government and students until a time when Ghana's economy becomes robust and vibrant for the question of free tertiary education to be discussed and considered.

2. Education at all levels should be directed towards the acquisition of relevant skills intended to make the products (beneficiaries) employable in order to address the problem of unemployment among the Ghanaian youth.

3. There should be adequate and timely supply of all relevant teaching and learning resources as well as other logistics to facilitate the training of Ghanaian children of school-going age at all levels of education such as pre-tertiary and tertiary education in the country.

4. Teachers at all levels of education should be well-trained and well-motivated to enable them shape the education of Ghanaian children to the betterment of the country at large.

5. Governments of Ghana should direct education to reflect that of the global village due to technological advancement and modernisation. Here, emphasis should be placed on vocational, technical, mathematical and social skills to enable products acquire employable skills to function well in the Ghanaian society.

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Meaningful Learning in Ghanaian Basic Schools: Critical Contextual Evidence of Stakeholder Participation

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Abstract

Basic education has received much attention in national and international discourses, with the formulation of national policies on free and compulsory basic education. In many Ghanaian communities, the assumption is that the government is the sole financier of public basic education. Therefore, parents take almost no responsibility for their wards' education. This study used the mixed method approach to explore the perspectives of stakeholders at the basic school level to understand the teaching and learning contexts for evidence of patterns of practice and innovative strategies that promote stakeholder involvement towards meaningful learning. In three different settlement areas and school types, copies of a questionnaire were administered to 384 teachers and head teachers in 28 schools; interviews were conducted with 28 head teachers and 9 focus group discussions were held with primary 6 pupils. Some key findings were that due to delayed government supplies, schools experienced inadequate basic resources which hampered smooth running of academic work. While some head teachers solicited for assistance from old students, philanthropists and Non-Governmental Organisations, others did nothing about the situation but waited for the government supplies. The study therefore concluded that irrespective of school type and settlement area, it takes a proactive school leader to initiate strategies that involve stakeholders in order to obtain resources for meaningful learning to take place. The study makes recommendations towards the training of head teachers and more awareness creation among stakeholders about their roles towards basic schools in their communities and their wards' learning, in spite of the fee-free policy.

Key words: Basic education, Free education, Meaningful learning, Mixed method, Stakeholder participation

Introduction

Education is widely acknowledged as very important for the development of individuals and nation-states (United Nations Education, Scientific and Cultural Organisation, [UNESCO] 2007, 2009a). The human skills and abilities that develop through education, translate into individual social and economic benefits. These come about through employment opportunities and higher incomes, national economic growth and poverty reduction (World Bank, 2002; David, 2009). In middle and low-income countries where enrolment and completion rates are low in primary education, research suggests that the reading and numeracy skills acquired through basic education are fundamental and relevant for learning skills in technical and vocational education and ensure the trainability of youth for employment (Yuki & Kameyama, 2013). Goal 2 of the Millennium Development Goals (MDGs) therefore required all nations to ensure that by 2015, children everywhere would be able to complete a full course of primary schooling (United Nations, 2000). Consequently, national education agendas and international development agencies focused greatly on primary education.

In Sub-Saharan Africa, statistics show that the sub-region had made the greatest progress in primary school enrolment among all developing regions; from 52 percent in 1990 to 78 percent in 2012 (Ghana National Development Commission, 2015). In Ghana, the 2015 report of the MDGs also indicates that the country has attained universal primary education. This success story is the product of the efforts and commitment of successive governments to ensure that all children of school-going age are in school. Strategies that were adopted to improve access to education include the policy of free and compulsory basic education enshrined in the 1992 Constitution from which the Education Act 2008 imposed fines on parents who failed to comply, the capitation grant and the school feeding programme (Ankomah, Koomson, Bosu, & Oduro, 2005; Ampiah, 2010).

Accessing basic education is not only about getting into school but also of accessing meaningful learning, completing successfully and being functional in the society. A UNESCO report of 2017 points out that in 2015, about 387 million children (56%) of primary school age were found not to have reached the minimum proficiency level in reading after many years of primary school education (UNESCO, 2017). In under-served communities particularly, it is noted that

globally, when public systems do not provide good quality education, the poor and marginalized lose out (UNESCO, 2017). This is especially the case in many low-income countries where research shows that access to basic education does not often commensurate with learning outcomes in public basic schools. In Ghana for example, in spite of the overwhelming progress in primary school enrolment, pupils' performance in national standardized examinations such as the National Education Assessment (NEA) and School Education Assessment (SEA) continue to show little progress (MOE, 2014). This seems to suggest that many children are gaining access to school buildings but not to meaningful learning.

The 2015-2030 Global Sustainable Development Goals (SDGs) make it clear that every human being is entitled to a decent education. Target 4.1 of the Goals commits member nations to ensure that 'all girls and boys complete free, equitable and *quality* primary and secondary education leading to relevant and effective learning outcomes' by the year 2030 (emphasis mine). Access to good quality education is the right of every child. Quality is at the heart of education, and a fundamental determinant of enrolment, retention and achievement. The target 4.1 of the SDGs therefore places emphasis on good quality education which will culminate into children's learning achievement.

The definition of quality has been expanded to address desirable characteristics of learners, processes, facilities, learning materials, content, governance and management, and learning outcomes (UNESCO, 2015). Certain basic features are known to be critical for producing educational outcomes. These include the quality of the teaching workforce, the availability of adequate educational resources, a supportive learning environment, and suitable access to basic services such as sanitation, clean water and electricity in instructional settings (UIS, 2012). The provision of good quality education is a shared responsibility between various actors (e.g. government, parents, schools, teachers, students, civil society and the private sector) who play different action-oriented or moral roles based on political, moral, and/or legal grounds (UNESCO, 2017). It is well acknowledged that the government, schools and teachers have front-line roles to play in this shared responsibility. The government is expected to provide resources while schools and teachers make children literate and numerate.

Teachers stand in the interface of the transmission of knowledge, values and skills in the learning process in the school and classroom (Akyeampong, Lussier, Pryor & Westbrook, 2013). However, to be able to exhibit competence and professionalism, they need teaching and learning resources such as textbooks and manuals that will facilitate learning (UNESCO, 2015). Studies conducted in Africa show strong positive effects of textbooks on learning achievement (UNESCO, 2005). Yet, in many public primary schools in low-income countries, the supply of reading and mathematics textbooks is not sufficient for pupils, which inevitably leads to sharing of textbooks among children. In Cameroon and the Central African Republic for example, it is reported that there is just one reading textbook for every 13 and 8 pupils respectively, and in some cases, most pupils do not have textbooks of their own (UIS, 2012). Schools that have no textbooks and learning materials cannot do effective work. In a Country Analytic Report of the Consortium for Research on Educational Access, Transitions and Equity (CREATE) project in Ghana, it was reported that the absence of teaching materials among other factors is likely to result in teacher absenteeism (Akyeampong, Djangmah, Oduro, Seidu & Hunt, 2007).

In the shared responsibility of education delivery, parents and communities also have a critical role to play in providing key educational inputs for the cognitive development of their children (UNESCO, 2017). In countries where the economic slump has led to cuts in government spending, it has become even more imperative for parents and communities to play more active roles. Ball, Maguire and Braun (2012) and West (2014) report such a trend in England where as a result, fundraising efforts in schools have become a prominent phenomenon, with Parent and Teacher Associations (PTAs) being the core charitable group (NCVO, 2016). In both high and low-income countries, there is evidence that parents with some level of education are most likely to participate in school-based activities with the view of encouraging their children to excel academically (Lee & Bowen, 2006; Boateng & Wilson, 2019).

Also, in the United States, depleting budgets have led to the adoption of fundraising, which is accepted as part of school life, and as a means of providing needed resources for schools. Philanthropic activity plays a prominent role in this connection, as a way of maintaining quality (Body, 2017). For example, Reich's (2007) study of philanthropic giving to schools in California and Chicago shows that

there is increasing reliance on philanthropy. He notes that parents of children attending schools are the most likely group to volunteer or fundraise for their school. In relation to this, Body (2017) reveals that almost all donations occur as a response to 'an ask'. For her, 'being asked' is the most important factor that makes people donate. She therefore strongly advocates for pro-active fundraising from a wide spectrum of sources, as this is more likely to attract significant philanthropic support to transform the school community.

The foregoing examples of civil society's participation in education in developed countries like the United States and England serve as lessons for developing countries like Ghana. With approximately 83% of the total expenditure accounting for the payment of compensation to employees of the Ghana Education Service, leaving about 17% for goods, services and assets (GES, 2015) for the entire country's education institutions, it is becoming increasingly imperative for Ghanaian schools to seek alternative sources of support rather than depending solely on government supplies which are inadequate and untimely. This is more pressing as in recent times, education delivery has been hampered by delays in the release of funds by the central government for administrative budget, school maintenance and capitation grants. Consequently, materials that are needed for the daily running of schools such as lesson note books, reference materials, manila cards, board markers and chalk are seriously lacking in many public schools. This situation threatens the general processes of teaching and learning, meaningful use of instructional time, and the learning achievement of pupils.

In many basic schools however, it appears community members and parents take almost no responsibility for their children's education. They assume that by the free basic education policy and the government's provision of capitation grant, the government is required to provide all educational resources and inputs. It was therefore important to empirically examine the teaching and learning contexts of basic schools for evidence of patterns of good practice and innovative strategies that could be disseminated and replicated. This constituted the purpose of the study, which was located in the Central Region of Ghana, and guided by these two research questions:

1. How do head teachers, teachers and pupils in selected metropolitan, municipal and district assemblies in the Central

region interpret their experiences of teaching and learning in the event of delayed or irregular government grants?

2. What innovative strategies do teachers and head teachers in the selected metropolitan, municipal and district assemblies in the Central Region adopt to promote teaching and learning in the face of delayed or irregular government grants?

It was expected that the findings of the study would provide contextual and empirical descriptions of innovative strategies for involving different education actors in education provision. It was also intended to showcase good practices, which would serve as exemplars for adaptation or replication. The findings would also be important for relevant stakeholders that are involved in basic education provision in similar contexts in Ghana and elsewhere. The rest of the paper is divided into four sections: methodology, results and discussion, conclusion and recommendations.

Methodology

Research design and sampling

The study adopted the mixed method approach to survey a cross section of schools in the Cape Coast Metropolis, Abura Dunkwa and Komenda-Edina-Eguaafo-Abrem (KEEA) Districts in the Central Region, based on proximity and convenience. A multi-stage sampling method was used to select participants for the study. Firstly, the cluster sampling was used to group the schools in each metropolis, municipality or district into the three levels of settlement status (urban, semi- urban and rural). Secondly, from each of the three settlement groups, the purposive sampling technique was employed to select ten schools (at least three from each metropolis, municipality or district: one each of high, average and low-achieving) from the 2014 Basic Education Certificate Examination results.

In all, a total of 30 schools was sampled for the study, but 28 were used since 2 declined to participate. In each school, the head teacher and all the teachers were automatically recruited for the study. There were 384 teachers and head teachers (161, 118 and 105 from high, average and low performing schools respectively) of which approximately 61% was female (Table 1).

Table 1: Gender distribution of teachers by school category

Gender	High		Average		Low	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Male	56	34.8	46	39.0	46	43.8
Female	105	65.2	72	61.0	59	56.2
Total	161	100	118	100	105	100

With regard to qualification, an average of 60% of the teachers possessed Bachelor's and Master's degrees, with the majority being holders of the Bachelor's degree (Table 2). The highest percentage (54.9%) of teachers with first and second degrees was teaching in high performing schools.

Table 2: Qualification of teachers

Academic Qualification	High		Average		Low	
	N	%	N	%	N	%
SSSCE/WASSCE	36	25.2	20	20.4	24	27.0
GCE O Level	4	2.8	6	6.1	3	3.4
GCE A Level	1	0.7	1	1.0	1	1.1
HND	8	5.6	7	7.1	5	5.6
First Degree	86	60.1	58	59.2	53	59.6
Masters	8	5.6	6	6.1	3	3.4
Total	143	100	98	100	89	100

With regard to the pupils who participated in the study, between 6 and 8 primary 6 pupils were selected in each school type and settlement area with the help of the class teachers for focus group discussions. The teachers purposively sampled pupils who were vocal in class and could provide information about the topic under investigation. Primary 6 was used because the pupils have experienced schooling for six years and were considered capable of describing their experiences.

Instruments

A questionnaire and an interview guide were used to gather data from the teachers, head teachers and pupils of the selected schools to solicit responses concerning their experiences of teaching and learning. The teachers responded to the questionnaire while the head teachers and pupils were interviewed. The questionnaire had 15 items and was divided into two parts. Part One sought information about the teachers' bio data and the Part Two, based on teaching and learning, asked

questions on the materials the teachers perceived to be critical to teaching and learning, how they obtained such materials, the challenges they encountered and their suggestions for improvement.

The interview guide for the head teachers had nine items which also sought information similar to the questionnaire. The pupils' interview guide had 12 questions seeking general information about their experiences of teaching and learning, the adequacy of teaching and learning resources that were placed at their disposal, how they thought they were obtained, and what they wanted to see changed. The questionnaire and interview guide were designed by the researcher, and were validated by a research committee at the College of Education Studies, University of Cape Coast. The questionnaire was pre-tested with 30 teachers in another district in the Central Region with an overall internal consistency (Cronbach alpha) coefficient of 0.78. The interview guide was also pre-tested, producing valid responses which were consistent with most of the responses from the questionnaire.

Data collection procedure

Four trained research assistants constituted two groups (two in each group) to assist the researcher to collect data. The 28 schools selected for the study were shared among the two groups. First, permission was sought from the Education Directors of the three selected metropolis, municipalities or districts to access the schools for the study. In each school, a letter of introduction from the District Office was presented to explain the purpose of the study and to obtain permission to access the teachers, pupils and the head teacher. The research assistants then made appointments with the head teachers for the interviews and questionnaire administration.

On each day, the research assistants interviewed the head teacher and the pupils during break time and gave out copies of the questionnaire to the teachers who were at post on the day of the exercise to be completed and collected on another day. While at the schools, they took the opportunity to observe the classrooms for evidence of availability or otherwise of resources and facilities for teaching and learning. Thus, the research assistants spent about three days in each school. Data were collected between May and July 2015. The interviews were transcribed and analyzed using Nvivo while the questionnaire was coded and analysed through the SPSS version 20.0 software and presented in frequencies and percentages.

Results and discussion

This section presents a discussion of the results according to the research questions, beginning with the first.

Head teachers, teachers and pupils' interpretation of their experiences of teaching and learning

Government policies and implementation

Among the school types and respondents, there were some common trends and also differences in experiences regarding availability and adequacy (or otherwise) of teaching and learning resources, and how they impact classroom activities. This is against the backdrop that the government is responsible for providing capitation grant and supplying resources such as textbooks, exercise books, lesson notebooks and chalk. The head teachers of high, average and low performing schools revealed that the capitation grant constituted 35.9%, 34.7% and 34.4% of their school budget respectively. Though insufficient, according to the head teachers of all the sampled schools, there were delays with the provision of the capitation grant and the supplies, and this had a negative effect on teaching:

> *There are delays in the purchasing of TLMs and other materials for the teaching and learning, hence frustrating the teaching and learning process (Head teacher, rural low performing school).*

Since the capitation grant was the main source of funding for running the schools, when it delayed, acquisition of other teaching resources also delayed.

> *We plan, but don't implement. How can we run the school in the absence of government funds? (Head teacher, high performing school).*

All the head teachers talked about their School Performance Improvement Plans (SPIP), which are prepared annually to outline the key actions the school would take to improve management, the environment and teaching and learning practices. It was required that the schools prepared the plans in collaboration with the School Management Committees (SMCs) to correspond with the amount of money to be obtained from the capitation grant.

Since all the head teachers mentioned the SPIP as an important aspect of school management, it was necessary to inspect it for a first-hand information on its content, and how it impacted education

delivery. An examination of the plans revealed some commonalities with regard to the items listed (e.g., Teaching and Learning Materials [TLMs]), teacher professional development and sporting activities). These were to be implemented when the capitation grant was provided. For the head teachers in this study, the delays in the release of the capitation grant hindered the implementation of the SPIP and their school improvement efforts. According to them, they suspend the implementation of the plans in the absence of the funds, as one head teacher from a rural average performing school lamented: 'How can we run the school?' The lamentation of this head teacher depicts the helplessness they encountered in their effort to keep the schools running. It also suggests the absence of pro-activeness on the part of the head teachers in finding innovative ways of running the school. She seems to suggest that until the government provides funds, teaching and learning activities will continue to be derailed. One would have thought that the PTA and SMC would meet to propose ways of obtaining funds (for example from philanthropists, development partners in the locality or institutions that have corporate social responsibilities to the communities) to procure the most needed items.

It was revealing at the time of data collection at the end of June 2015 (which was one week to the end of the academic year), that the third tranche of the capitation grant for the 2013/2014 academic year had just been paid (three academic terms late). Moreover, each school was supplied with three small boxes of chalk at the end of the academic year when teaching and learning had ended, and schools were vacating for the long vacation. This situation gives cause for concern about the kind of teaching and learning that might have taken place in the absence of very critical school supplies.

It was observed in some schools that there was inadequate classroom furniture. Pupils brought their own furniture from home, sat in threes or on the floor because broken down furniture had not been repaired or replaced. This situation seems to be common and observable in many basic schools in Ghana. Basic repair works to maintain school facilities are abandoned, thus further deteriorating broken down facilities and making some schools unattractive. It was not surprising therefore that in these school types, enrolment was low, as is also evident in some developing countries (UNESCO, 2014). In some cases, this led to drop-out or transfers to more attractive schools. In one school for example, the net enrolment figures of primary one, two and three

were 8, 8 and 14 respectively, far below the acceptable average class size of 35.

Managing teaching and learning activities

The teachers also lamented about the lack of teaching and learning resources. Untimely provision of the resources was more of a concern for teachers of average (14.8%) and low (15.1%) performing schools than those of high performing schools (4.8%). In high performing schools, it is possible that parents (through the PTAs) assisted to provide the needed resources. It was evident that in many of the schools, the teachers taught without TLMs. According to one head teacher, in the absence of TLMs, the teachers skipped some topics:

> *It makes teachers forego topics that they do not have teaching and learning materials to teach. Some topics are jumped over. (Head teacher, rural low performing school)*

Some teachers also resorted to abstract teaching, according to another head teacher:

> *It reduces effective teaching because they have to teach some of the practical topics abstract (Head teacher, average-performing urban school).*

Teaching and learning in abstract does not promote understanding of concepts since the pupils have no materials to engage with. This situation is worse in practical-oriented lessons such as ICT. Describing how their ICT lessons were taught, pupils in an average performing peri-urban school reported that the whole class clustered around the teacher's laptop computer, thereby making hands-on activity impossible. In cases where the teachers do not possess laptop computers, pupils would never have the opportunity to handle computers in school. One of the pupils pointed out that although ICT is his favourite subject, the teaching approach and irregular teaching of the subject made him lose interest in it. Therefore, according to him, *the* (termly) *exam is difficult*.

There is enough evidence of a strong positive relationship between provision of foundational inputs in adequate measures, school quality and learning outcomes (USAID, 2008; UIS, 2012; UNESCO, 2015). With regard to textbooks particularly, studies conducted in some African countries show that its availability and use give students greater opportunities to learn, and thus, increase their learning achievement (UNESCO, 2005; USAID, 2008). Nonetheless, a number of public

primary schools in some developing countries lack sufficient textbooks (UIS, 2012). In Cameroon and the Central African Republic for example, a study found that there is just one reading and mathematics textbook for every 13 and 8 pupils respectively (UIS, 2012). In this study, pupils in all the sampled schools reported that in all subjects, there are between one and six copies of the textbooks. In many cases, 3 pupils shared a book. According to them, when there is only one copy, the teacher uses it since the whole class cannot cluster around a single textbook. A head teacher of a peri-urban average performing school concurred with the pupils' report thus:

> *We do not have any Religious and Moral Education textbooks and in subjects like English and Fante, we share the textbooks in the ratio of 4:1 (pupils to textbook).*

The gravity of the situation is captured in the words of a pupil of a peri-urban average performing school as follows:

> *When there is no textbook and chalk, the teacher dictates notes but sometimes some pupils can't write.*

A dictation exercise meant to develop pupils' spelling and writing speed is a worthwhile activity. However, when it is used as a note-taking activity for primary six pupils who neither have sufficient vocabulary nor textbooks to make reference to, it becomes problematic. This is particularly true in cases where pupils are unable to write at all, and therefore sit idle through all the lessons. The most obvious implication of these circumstances is that 'engaged learning time' (USAID, 2008) is reduced, and teacher accountability and performance standards may not be enforced since the needed resources are not supplied.

All the sampled schools adopted the strategy of levying parents. These levies were mostly common among low performing schools (14.6%) which seem to need resources more, as compared to high and average performing schools respectively (9.9% and 11.3%). In many schools, parents were unwilling to pay the levies because they thought that education is free. In addition to the levies, pupils in different classes of a high performing peri-urban school were asked to supply chalk in turns. Again, at the beginning of every term, each pupil supplied items such as chalk board ruler, toilet rolls, soap, cardboards and brown cover-papers.

While the head teachers claimed the levies were used to acquire basic teaching resources for the schools, the pupils said it was used to pay the teachers for extra tuition. Although all school levies were abolished in 2005 when the capitation grant was introduced for all children (MOESS, 2007), the practice has resumed in many schools because the release of the capitation grant experiences long delays. The issues associated with levying were obvious especially in rural schools:

> *Our parents don't have money to pay the fees [levy of 20 pesewas daily] for extra classes. They are farmers. Some of our friends don't come [to school] because they don't have pencils and pens, because some are poor. They don't have school bags, no sandals, no uniforms (pupils, rural low performing school).*

The untimely release of government funds, unavailability and/or inadequate teaching and learning resources endanger the efficiency of the decentralisation policy, school management and effectiveness of instructional processes generally, and the achievement of learning targets specifically.

The pupils in this study also revealed that the teachers' frustration was sometimes evident in their use of the cane, especially when parents and guardians failed to pay the levies. Pupils were either caned or sent home on such grounds. To avoid being caned, some pupils absented themselves from school:

> *There is too much caning in this school so some (pupils) don't come. I always get frightened when I think of coming to school (pupil, low performing rural school).*

These two situations (i.e., levying and caning) show how school regulations are flouted by some school heads and teachers, disregarding the fact that by so doing they push some children out of school. While the government institutes measures such as the capitation grant, the school feeding programme and free school uniforms, among others to sustain access and participation in school, the actions of some school heads and inactions of some education supervisors and directors push children out of school. This appears to demonstrate that there is lack of 'consistency and sustainability in policies and strategies meant to address the problem of dropouts' (MOESS, 2007).

The literature shows that in certain poor communities and traditional cultures with loose family structures, children are often left on their own to care for themselves and also engage in economic activities to support their families' survival strategies (Grimsrud & Stokke, 1997). Data from this study shows that pupils in some communities engage in some minor jobs to get money to support themselves and also pay their school levies:

> *Some (pupils) take care of themselves and when they are not having anything to depend on, it becomes difficult for them so it prevents them from coming to school regularly (head teacher, peri-urban average performing school).*

> *Pupils in upper primary are left to fend for themselves and support their parents financially so the parents don't encourage them to come (head teacher, rural poor performing school).*

School-going children who engage in income-generating activities to support themselves and their parents are most at risk of dropping out of school due to the fact that they have to skip school very often to attend to their jobs. Consequently, they would lack trainable skills, thus leading to lack of proper employment and the reproduction of the cycle of poverty.

In both rich and poor countries, children from disadvantaged socio-economic backgrounds are the most at risk of dropping out of school (Nesselrodt & Alger, 2005; Akyeampong, 2009). Especially in developing countries including Ghana, school drop-out is most prevalent in rural areas, and attributable to a series of events and a range of interrelated factors (Hunt, 2008; Ampiah & Adu-Yeboah, 2009). One of such factors is poverty that necessitates occasional absenteeism and thus puts children at risk of eventually dropping out of school. Absenteeism is also likely to affect the academic foundation of the pupils and their progression in later years.

Head teachers are instructional leaders, and are therefore expected to possess mastery over their subject matter and good pedagogical skills in order to support and supervise teachers to demonstrate same. However, in this study, internal supervision by the head teacher was noted to be poor because basic supplies such as chalk, lesson note books and TLMs had not been provided due to the delay of

the capitation grant. This situation was found to be common in all the schools. Consequently, some head teachers claimed they did not find it morally justifiable to inspect lesson notes and observe teaching. Sometimes, the head teacher could not insist on teachers doing the right things in the classroom since head teachers were aware of the unavailability of the teaching resources. Though these claims seem reasonable, they are not justifiable since head teachers are duty-bearers who should ensure that teachers improvise appropriately to facilitate knowledge construction in the classroom.

The section that follows highlights issues emerging from the data in response to research question 2.

Alternative management strategies: Doing things differently

In some high-income countries like England and the United States of America, schools are finding alternative sources of funding to run their activities as a result of cuts in government spending per pupil (Ball, Maguire & Braun, 2012; West, 2014). In England for example, PTAs have become the core charitable group (NCVO, 2016). Similarly, some pro-active schools in this study adopted a number of strategies to keep their schools running. The major strategies that came to light in this study were (a) asking for donations and (b) head teachers' initiatives.

Donations in response to 'an ask'

Pro-actively focusing on fundraising or asking for donations for education provision is becoming an acceptable and common phenomenon in many contexts (England, Ball, Maguire & Braun, 2012; West, 2014; NCVO, 2016; Body, 2017). To attract significant financial support that will increase schools' income, schools in the USA and UK are encouraged to vigorously source for assistance to transform the school community. These are usually from a wide spectrum of sources like philanthropists, PTAs, corporate partners and charitable trusts or foundations (Body, 2017).

In mostly urban areas in this study, some ingenious head teachers approached philanthropists and old students of the schools for assistance in meeting specific itemized needs. This is an innovation which is not common to many basic schools in Ghana. In one urban high-performing school for example, the head teacher had compiled a list of old students in prominent positions, which she consulted from time to time for assistance. Through this, she had obtained a library and organised a speech and prize-giving day where such personalities were

commended. In one peri-urban high performing school, the head teacher had contacted some American immigrants in the community for assistance on the basis of their interest in the school. According to her, the immigrants had linked the school to other philanthropists abroad, thus culminating into regular supply of stationery items and library books.

These philanthropists had also sponsored some high achieving students in tertiary institutions. In that same school, through the assistance of some Non-Governmental Organisations, a number of projects had been undertaken, including the construction of a 3-unit classroom block; furniture for teachers and pupils; construction of an 8-seater toilet, a kindergarten block and provision of pipe-borne water. Faith-based schools also had financial assistance from the churches to which they were affiliated.

Head teachers' initiatives and school- level income generation

One of the initiatives of the schools was to engage in commercial activities, such as operating a small-scale stationery shop. Proceeds from such sales were then used to purchase some materials for the school. Some obtained 'silver collection' during Christian worship services, and others generated income from the rental of school facilities for various activities such as church, and services like canteen.

Another strategy involved giving lunch and/or monetary incentives to teachers from the levies parents paid towards the pupils' extra classes to boost teachers' morale. This way, the schools' high achievement in national examinations helped to increase enrolment and also served as motivation for the parents to support the school in any way they were requested. In urban high achieving schools, there were also annual school durbars and graduation activities where hardworking teachers and students were awarded.

Conclusion

The success stories of attainment of universal basic education in Ghana mask contextual evidence of the actions and inactions of some key players in education that positively or negatively affect meaningful learning. In reference to the first research question that guided this study, it is clear that while some communities are supportive of their children's education, others look to the central government for all educational resources. The findings suggest that in spite of the government policy regarding free and compulsory basic education,

basic education is not totally free. The government alone cannot fund basic education, as this study shows. The examples of support from civil society organisations and prominent persons presented in this study show that there are well-meaning individuals who are keen to provide educational assistance, but such groups must be identified and approached for the needed support.

In relation to the second research question, it is also evident that school management style is one of the critical factors that bring about differences in school types, learning achievement and equal/unequal provision of good quality basic education. The proactive school managers in this study took certain initiatives such as identifying and approaching old students in prominent positions, civil society organisations and philanthropists for assistance. Others organised events such as durbars and open days to involve the community in the activities of the school. Therefore, irrespective of school type and settlement area, it takes a proactive and visionary school leader to initiate strategies that will involve well-meaning individuals and groups in achieving meaningful and successful learning.

Also, irregular school attendance, drop-out and unsuccessful completion are some of the unfinished businesses of the MDGs, as demonstrated in the findings of this study. When schools are unattractive due to lack of resources and good facilities, and pupils are sent home or caned for failing to pay school levies, school attendance and learning achievement are likely to be affected.

Recommendations

Good quality education is the right of every child. It is therefore important that District Directors of Education ensure equity in the provision of quality basic education through equal distribution of basic resources.

The study recommends that district directors of education, SMCs/school heads and PTAs sensitize parents and communities to take ownership of the schools in their communities and support them in any way they may be requested. For example, parents should be made to provide exercise books and certain essential stationery items. Based on the study's finding that parental involvement is an important key to improving schools generally and teaching and learning particularly, parents should be encouraged to visit schools and classrooms regularly, particularly on open days.

In most of the schools in this study, the head teachers pointed out that parents were unwilling to support schools financially because they think that education is free. In the head teachers' opinion, if parents are made aware of their responsibilities towards their children's education, they might be supportive. One way of doing this is for the management of the Ghana Education Service to make School Performance Appraisal Meetings (SPAM) mandatory for parents and enforce the operationalisation of those meetings. At these meetings, awareness can be created about communities' and parents' roles. Moreover, schools with alternative means of resourcing should be commended and good practices shared with stakeholders.

Particularly revealing in this study is the finding that some head teachers keep record of old students, consult and engage them actively in the schools' activities. This awareness will help to forge strong links with old students' unions so that schools could consult them for assistance. These have implications for the training of head teachers to find innovative strategies for resourcing their schools, and not wait for the government to provide the funds which sometimes never get supplied. Above all, regular school attendance in a safe environment devoid of caning and threats, and successful completion should be prioritized by the education sector in the context of the Sustainable Development Goals.

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Massive Open Online Courses (MOOCs) for University Education: A Study on Students' Experiences at the University of Ghana

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Abstract

The objective of this study was to examine students' experiences in participating in MOOCs (Massive Open Online Courses) at the University of Ghana. The study employed the qualitative research method. All the 12 students of the University of Ghana's Department of Adult Education and Human Resource Studies who enrolled in a MOOC course participated in the study. The study revealed that students are mostly attracted to Coursera and edx than other available MOOC platforms. Students view MOOC as affordable, accessible and of quality. MOOC challenge mostly cited by students is intermittent internet connectivity. In anticipation of the increase in enrollment in Ghanaian Universities in 2020 and beyond due to the Free Senior High School programme of the government, the study recommended that Universities and other tertiary institutions convert some of their study courses registered by students into MOOCs to create more lecture spaces for prospective students.

Key words: MOOC; Education; E-learning; University of Ghana; Distance Education

Introduction

In the 2018/2019 academic year, The University of Ghana turned down 45% of qualified applicants who have applied to pursue various programmes due to lack of capacity involving limited lecture space and inadequate staff (GNA, 2018). This made several parents frustrated as their wards were denied university education. To

compound this problem is the introduction of the Free Senior High School education by the government in 2017. As at October 30, 2018, 484,743 students had been enrolled in the first year of the 'gold' and 'green' tracks of the Senior High Schools (MOE, 2018). This number exceeded the number for the 2017/2018 academic year which was 358,205 (GNA, 2017). This suggests that there will be more students seeking university admission starting from 2020 as the first batch of the beneficiaries of the Free Senior High School programme graduate. As a response to the anticipated increase in enrollment at the universities, the President of Ghana in 2017, tasked all private universities to get ready to enroll more of the graduates of the Free Senior High School programme in 2020 because the public universities will not be able to absorb all (Ghanaweb, 2017). The irony of the president's call is that most of these private universities charge higher fees ranging from $2,000 to $5,000 which are not affordable to a large section of the Ghanaian society (Ibid, 2017). This may have led Prof. Peter Quartey, the Director of the Institute of Statistical, Social and Economic Research (ISSER) to propose that we should start planning ahead because the numbers have doubled and the universities don't have the capacities (Ghanaweb, 2018).

Fortunately, we live in an era where technology is advancing. A lot of countries in the world are using technology to develop. Technology has and is still playing a very significant role in education. Due to technology, a lot of schools find it easy to keep their records. Technology has also promoted easy access to learning materials, learning aid, sharing of knowledge, and revolutionised distance education (Sarkar, 2012; Budhwar, 2017). One importance of technology to education is the introduction of online courses which are aimed at giving limitless participation and open access through the web. One of such avenues is the use of MOOCs. MOOC is an acronym which stands for Massive Open Online Courses. MOOC uses instructional materials such as videos, online forums, eBooks and automated quizzes as a means of providing education to people located across the Atlantic at the same time.

MOOC places much emphasis on open access, flexibility, quality, and cost effectiveness (Baturay, 2015). MOOCs can reach out to a massive group of participants online and it allows interaction among different calibre of learners irrespective of their ages, cultures,

and nationalities (Lim, Wee, Teo & NG, 2017). MOOC is being run by several top ranked universities in the world on different MOOC platforms. Notable among these platforms are; Khan Academy, edx, Udacity, and Coursera (Baturay, 2015).

George Siemens and Stephen Downes pioneered the development of MOOC a decade ago by mounting a MOOC course titled "Connectivism and Connective Knowledge at the University of Manitoba in Canada. This course enrolled 25 tuition paying students and over 2,200 tuition free students (Parr, 2013). In the year 2011, another remarkable MOOC trial was conducted by two Stanford professors; Sebastian Thrun and Peter Norvig. These professors launched three free online courses and they were able to get an enrollment figure of about 100,000 (Shah & Pickard, 2019). Shah and Pickard (2019) further indicated that after the launch of the three courses, about 900 universities have also launched free online courses. Countries such as India, Thailand and Israel have also incorporated MOOC as part of their national educational strategy. It is estimated that at the end of 2018, about 100,000,000 students had signed up on MOOC (Ibid, 2019).

However, some researchers have raised concerns regarding MOOC. Paramount among them is the high dropout rate of MOOC participants. Yousef, Chatti, Schroeder and Wosnitza, (2014) revealed that dropout rate among MOOC participants is averaging around 95%. A possible reason for this problem is the complexity and diversity of MOOC participants. This diversity is not only related to the cultural and demographic attributes, but it also considers the diverse motives and perspectives when enrolled in MOOCs (Yousef, Chatti, Schroeder & Wosnitza, 2015).

Another limitation of MOOCs is pedagogical problems concerning assessment and feedback. Due to the large number of enrollment in a MOOC, it takes a lot of time to grade assignments manually. As a mitigating measure, many MOOCs use an automated grading system in assessing students (Suen, 2014). Gamage, Whiting, Perera and Fernando (2019) indicated that activities which are simplified for ease of assessment, such as automatically gradable quizzes, reduce learning efficiency because these mechanisms allow minimal individualisation of feedback. Grünewald, Meinel, Totschnig, and Willems (2013) have also indicated that the video section of most MOOC courses are made up of pre-recorded videos, and as such lack

interactivity between learners and instructors. In most face-to-face lecture sessions, students get the opportunity to ask the instructor questions and get prompt feedback when they do not understand some issues in the instruction. Prompt feedback facilitates learning and serves as a motivation for the students to continue assessing the instruction.

In addressing these challenges, Albó, Hernández-Leo and Oliver (2015) mentioned a new form of MOOC which is known as blended MOOC (bMOOC). The essence of bMOOC is to bring together online courses offered as MOOC and traditional face-to-face study sessions in one blended learning environment. Yousef, Chatti, Schroeder and Wosnitza (2014) revealed that bMOOCs model has the potential to foster student-centered learning, provide effective assessment and feedback, support the interactive design of the video lectures, consider the different patterns of participants in the MOOC, as well as bring the benefits of face-to-face interactions into the MOOC environment.

Studies have shown that bMOOC is actually capable of increasing learning outcomes. In a pilot study conducted by Ghadiri, Qayoumi, Junn, Hsu, & Sujitparapitaya (2013) on blended learning models where an online MOOC was merged with a traditional face-to-face class of undergraduate electronic students, learning outcome was reported to have increased by 64.8% as compared to the previous year's traditional face-to-face lecture class. Similarly in a large scale study conducted to examine the use of MOOCs in fourteen campus based courses, Griffiths, Mulhern, Spies and Chingos (2014) revealed that MOOCs can be used to replace some amount of class time without harming students in terms of test score and pass rates.

Studies on MOOC in Ghana are limited. Currently, there is no study in Ghana that explores the experiences of students taking a MOOC. Fianu, Blewett, Ampong, and Ofosu (2018) explored the factors affecting MOOC usage by students in three selected Ghanaian Universities. The study showed that MOOC usage intention is influenced by computer self-efficacy, performance expectancy, and system quality.

In the 2019/2020 academic year, Prof. Yaw Oheneba-Sakyi of the University of Ghana's Department of Adult Education and Human Resource Studies enrolled 12 students in the Department on MOOC. This was done to introduce students to other educational resources to complement the face to face lecture sessions, and to introduce the

students to lifelong learning where students at any point in time after their graduation can assess MOOC to develop their capacity. This was also to serve as a test case for enrolling more students of the department on MOOC in the future. This study sought to investigate the experiences of these students in taking the MOOC in terms of quality, accessibility and affordability. The main research question that guided the study was, 'what are the experiences of the selected students' of the Department of Adult Education and Human Resource Studies, University of Ghana with regard to the quality, accessibility, and affordability of MOOC?

Research Methodology

The study was conducted at the University of Ghana's Department of Adult Education and Human Resource Development. The Department runs four key programmes and these are; Youth Development, Adult Education, HIV and AIDS Management, and Distance Education and E-learning. This study was conducted among students pursuing Master of Arts in HIV and AIDS Management and Master of Arts in Distance Education and E-learning. As part of their study programme, students of the MA HIV and AIDS Management and Distance Education and E-learning were tasked to enroll in any MOOC programme of their choice that are in line with their respective study programmes. The students were asked to produce an independent report to be assessed by the Department at the end of the semester.

The total number of students enrolled for MA HIV and AIDS Management programme is six (6) while that of the MA Distance Education and E-learning is also six (6). In line with ethical principles, permissions were sought from the students, and all the twelve (12) students agreed to voluntarily participate in the study. Eight of the study participants were males while four were females.

The study employed the qualitative research method by interviewing all the twelve (12) participants of the study. The interviews were conducted at the end of the semester in December 2019. The interview questions were structured into a pre-existing framework aligned with the research objective. The overarching themes of questions included; (1) Awareness of MOOC (2) accessibility of MOOC (3) Quality of MOOC and (4) Affordability of MOOC. It is argued that researchers often get a better response by the use of interviews than other data gathering instruments because people usually

feel more comfortable talking than writing (Best & Kahn, 1998). Also, the use of interviews enables researchers to obtain detailed information even in situations where few participants are available (Shneiderman & Plaisant, 2005).

In this study, Tesch's approach (in De Vos et al, 1998) was used for data analysis. Tesch's approach involves eight steps in analyzing interview data. The eight steps as explained by De Vos et al (1998:343-344) are listed below;

1. The researcher must read through all the transcripts in order to get the sense out of the whole. In doing this, ideas must be jotted down as they evolve.

2. The researcher must select one of the transcripts (e.g. the most striking or best interview) and review. While reviewing, the researcher must be guided by this question; "what is this about?", and must think about the underlying meaning in the information. The researcher's thoughts can be written in the margins of the transcript.

3. The researcher develops a list of all topics from the transcripts and cluster similar topics

4. The researcher applies the list of themes or topics to the data. The themes or topics are abbreviated as codes, which are written next to the appropriate segments of the transcripts. The researcher tries out this preliminary organizing scheme to see whether new categories and codes emerge.

5. The researcher forms categories by grouping topics together and determining the relationships between the categories

6. The researcher makes a final decision on the abbreviation for each category and alphabetizes the codes.

7. The data material belonging to each category is assembled and a preliminary analysis is performed.

8. The researcher recodes existing material if necessary.

In addition to these steps, the researchers used pseudonyms to represent the names of the participants (e.g. EN, 2019, AM 2019, etc.)

Results and Discussion

Awareness of MOOC

Only two out of the twelve respondents were aware of MOOC. The remaining ten respondents were introduced to MOOC by University of Ghana. This could suggest that several Ghanaian university students are not aware of MOOC and are missing a great resource to education.

> *Until Prof introduced us to MOOC, I had never heard of MOOC. I already knew there were online courses where students attend live video lecture sessions. But programmes structured with pre-recorded videos, online forums and online assessments facilitated by some world class universities like Havard were all new to me* (J, 2019).

In a similar study conducted in Nigeria on the awareness of MOOC by college students, Adebo and Ailobhio (2017) reported that only 21.4% of Nigerian students were aware of MOOC. The low awareness of MOOC is not only limited to students. Dhanani, Chavda, Patel and Tandel (2015) reported from India that only 18.52% of college instructors were aware of MOOC while a smaller percentage (12.96%) indicated they have ever enrolled on a MOOC. In analyzing the demographic data of MOOC participants, Zhenghao et al (2015) revealed that the majority of MOOC participants are from developed countries with very low participation rates from low income countries, especially Africa. Liyanagunawardena, Williams and Adams (2013) blamed this on lack of access to digital technology, linguistic and cultural barriers and poor computer skills.
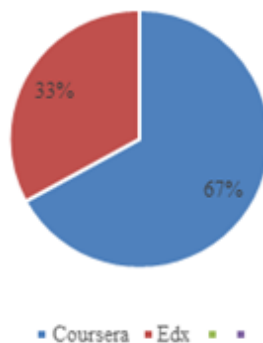
MOOC Platforms

Figure 1 indicates the MOOC platform selected by the respondents of the study. Sixty seven percent (67%) of respondents selected courses from the coursera platform while 33% chose the edx platform. Some of the students explained that they chose these platforms because it provided them courses that were related to their study programme and were also of interest to them. One respondent mentioned that;

> *I checked most of the platforms to look for a course of interest to me on HIV and AIDS. I found that only coursera has courses directly related to HIV and AIDS management. I chose the AIDS: Fear and Hope course offered by the University of Michigan* (EN, 2019).

Yet another respondent also revealed that:

> *I have noticed that edx and coursera have more courses on their website than most of the MOOC websites. I found a course of interest to me on edx* (AA, 2019).

It is not surprising that students are attracted to coursera and edx. In ranking MOOC platforms for the year 2018 based on highest quality courses and teachers, the widest variety of available courses, and those that offer most specializations, Robson (2018) ranked coursera as first, edx as second, FutureLearn as third, Cognitive Class as fourth, iversity as fifth and Udacity as sixth. Shah (2019) reported that while Coursera had over 45 million students with 3,800 courses, edx had 24 million students with 2,640 courses. FutureLearn on the other hand had 10 million students with 880 courses. It is therefore safe to suggest that MOOC platforms with more courses and specializations are most likely to meet the needs and interests of prospective students.

Figure 1: MOOC Platform

Completion rate

According to Greene, Oswald, and Pomerantz (2015), most students who enrolled for a MOOC course do not complete. However, the majority of students in this study did complete. Figure 2 depicts the completion rate of respondents. Seventy-five percent (75%) of the respondents were able to complete the MOOC courses they selected. Twenty-five percent (25%) of the respondents on the other hand were still undertaking the course at the time of the interview even though the semester has ended. The data obtained from the field revealed that courses selected by the respondents have different timelines ranging from four weeks to twelve weeks. This explains why some were able to complete before others. Some respondents explained why they completed the course ahead of time in the following statement;

I had a deadline of reporting on my MOOC course to my instructor at the University of Ghana which was earlier than the stipulated duration for completing the MOOC course online. I therefore threw myself into the course and completed ahead of time in other to meet the deadline (GA, 2019).

I was constantly reminded by my lecturer on the deadline to submit a report on my MOOC experience. These reminders motivated me to complete on time (AM, 2019).

These statements by the respondents revealed that students are most likely to complete a MOOC programme when they are given a deadline from their school and are being monitored by a third party. Ahearn (2018) mentioned that most students are unmotivated to continue a MOOC when they put in more effort to complete and upload a project or an assignment, but never receive personalized feedback because of the sheer volume of submissions. In moving the completion rate from 5% to 85%, Ahearn (2018) recommended the hiring of teaching assistance or programme managers who can personally send emails to students to let them know that their assignment was received, or reminding them to submit. Khalil and Ebner (2014) also stated that trained Teaching Assistants help students who cannot complete tasks. These Assistants can answer students' questions, offer them pieces of advice if students have technical problems, post some discussion topics, monitor the discussion forum on a regular basis, and can filter out questions that need an instructor's response.

Figure 2: MOOC completion rate

Quality of MOOC

In measuring the quality of MOOC, most scholars agree that learning outcomes should be verified from learners as to whether the MOOC course they undertook met their learning needs (Littlejohn, Hood, Milligan, & Mustain, 2016). We therefore proceeded to inquire about how satisfied the respondents are in terms of the selected courses meeting their learning needs. In this study, ten (10) of the respondents mentioned on a Likert type scale of measurement that they are very satisfied while two (2) indicated they were satisfied that their selected courses met their learning needs. None indicated they were not satisfied. This implies that most MOOC courses on Coursera and Edx are of higher quality. Below are some of the statements made by the respondents:

> *...the course I took really met my learning needs. I wanted to understand how I can apply some counselling theories in counselling HIV positive people. It's interesting to say that the professor who facilitated the course was from the University of Michigan. I checked his profile on orcid and I noticed he is really a scholar in HIV issues. By the end of the course, I have come to understand more than four theories and its application in HIV and AIDS counselling* (EN, 2019).

Accessibility of MOOC

Ten (10) of the respondents indicated that they are very satisfied with the accessibility of MOOC while two (2) mentioned they are

satisfied. This implies that all participants agree that MOOC courses are accessible. All the respondents indicated that MOOC is very open because they did not face any issue with regard to entry requirements. Some respondents revealed that;

> *All I needed for admission was my computer and internet data. I was never asked to buy an admission form and to provide a certificate before enrollment. A few clicks on the MOOC platform and you are set to go* (AM, 2019).

> *How could I have gotten access to education from Michigan University in America as I sit here in Ghana if not through MOOC? MOOC has eliminated the distance barrier to education* (GO, 2019).

Sanchez-Gordon and Luján-Mora (2016) explained that one way in which MOOC has changed the trend in modern day education is through increased access. They further mentioned that MOOC does not consider gender, status, race, wealth, the language of its users and is open to all. Hence thousands of users can get on board at the same time without hindrances. Pandita (2018) also mentioned that MOOC has the potential of offering opportunities to thousands of learners who may not get admission into the traditional universities. Adu-Marfo and Biney (2017) also re-emphasized that women who due to the many roles they play in the family as mothers, wives, as well as the many cultural beliefs that hinder their access to mainstream education in developing countries, could adopt distance education such as MOOC as their medium of education because it is very open.

However, all the participants mentioned intermittent internet connectivity as a problem that could hamper accessibility of MOOC, especially in remote places of Ghana where internet connection is not reliable. Some of the respondents mentioned that:

> *A challenge I faced in the course had to do with poor internet connectivity at my home. I was able to deal with this problem by reporting to the office early around 6:30 am. With this, I could have two hours to access the MOOC course before official work begins at 8:30 am. I also leave the office around 6:00 pm. In this way, I have extra one hour to access free and fast internet in the office* (SE, 2019).

> *…the internet network is not stable. Small time and the link is off. It's annoying when your interest in the course is aroused yet the network won't give you way* (UJ, 2019).

Endert (2018) made mention of how internet connection in Ghana's capital still remains fragmented and not complete; and the inadequate infrastructure in the rural areas of Ghana also posing a big challenge when it comes to internet access. Fosu (2011, as cited in Internet Policy Observatory) affirmed that Ghana is indeed one of the first countries in Sub-saharan Africa to have internet connectivity, yet people in most areas in Ghana still have the challenge of accessing the internet. They added that this is as a result of outdated infrastructure while some areas have not been connected at all.

Affordability of MOOC

In this study, all the respondents indicated that MOOC is very affordable. On the average, respondents estimated a total cost of $ 3.2 (around 20 GHS) as cost for accessing the MOOC course. However, this could be a lower estimation since all the respondents used the cost of internet bundle as their cost factor. They did not factor in the cost of devices like computers and cost of electricity. One respondent mentioned that:

> *I did not pay any admission or tuition fees. In the course I chose, I have the option of paying a few dollars for a certificate after completing the course. But I did not choose the certificate (*JF, 2019).

Upon all the advancement made in education, learners do face a challenge with regard to lack of access due to financial constraints. However, MOOC has reduced this challenge by offering courses at lower financial cost and mostly free of charge (Walker, 2019). This has been made possible by the benevolence of some notable philanthropists and donors who see education as a key to development (Fain, 2012; Mangan, 2012). Some governments have also invested in MOOC to benefit the larger student population. The French Ministry of Higher Education funded and came up with a project known as France Université Numérique (FUN), which has the sole aim of helping French universities to be able to promote and come up with new innovations that will enhance teaching and learning through the use of modern-day online technology. This led to the development of FUN MOOC which is solely devoted to Francophone universities and their 93 academic partners in Belgium, Switzerland and Tunisia. FUN MOOC broadcasts 269 MOOCs in 461 MOOCs sessions for free (Shah, 2017).

Conclusion and recommendations

In this paper, we report the findings of a study undertaken to investigate the experiences of selected postgraduate students at the University of Ghana with regard to the quality, accessibility, and affordability of MOOCs. As noted by Wellen (2013), the recent emergence of MOOCs has instigated another version of "disruptive" unbundling connected with the academic open content movement (p. 9). This new movement is challenging the established global educational system where many qualified students lack access due to inadequacy of space and facilities. Companies such as 'Udacity, EDx, and Coursera have begun to provide free online access to mass-produced courses taught by leading faculty members at the world's most prestigious universities' (Wellen, p. 9); effectively widening access to higher education. Several components of higher education programmes are modularized to enable students learn at their own convenience. In terms of awareness about MOOCs, this paper has revealed that the majority of the participants were not aware of the existence of MOOCs. This finding is not peculiar to the participants in this study, but it could be argued that this seeming lack of awareness about MOOCs is a common trend in developing countries – where many countries are still grappling to develop their Information Communication Technology (ICT) infrastructure hence limiting access to information.

While there is no doubt that MOOCs could increase access to higher education, questions about its quality, with particular emphasis on pedagogical practices, still remain. However, the participants in this study were found to be generally satisfied with the quality of MOOCs as evidenced from among other things, the calibre of academic staff who taught the various courses. While this contradicts the findings of Margaryan, Bianco, and Littlejohn (2015) that MOOC does not fully meet the quality criteria, it is a reminder that quality judgement is a subjective exercise which takes into account the quality of teaching, online materials and their effective integration into the course, as well the quality of assessment and feedback. Therefore, quality of MOOC cannot be generalized; instead quality is course-dependent. With regard to accessibility and affordability, there was a general consensus among the participants that MOOCs offered students' a low-cost alternative to higher education, making it accessible to all people irrespective of their personal conditions.   On the back of these findings, we argue that if

50% of courses registered by students are converted to MOOC in a form of blended learning, 50% of lecture spaces could be created and this could translate into 50% additional enrollment in the institutions. Government could employ more teaching assistants who would be trained to assist instructors in assessing feedback and responding to students' queries. Government could also ensure that there is reliable internet connection in and around university environments and at the homes of students to ensure smooth access to MOOC courses. This will go a long way in mitigating the enrollment challenges.

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Basic School Teachers' Attitude and Confidence level in teaching the new Standards-Based Computing Curriculum in Ghana

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Abstract
This study assessed the attitude and level of confidence of Basic 1-6 teachers in Ghana in implementing the new standard-based computing curriculum. The study employed the survey design. Simple random sampling and stratified sampling were used to select 127 teachers from five regions in Ghana. Frequencies, percentages and Pearson correlation statistics were used to analyse the data collected. The findings showed that most of the teachers have high confidence in handling the revised computing curriculum. In addition, most teachers have positive attitude towards using ICT tools for teaching and learning. Availability of ICT resources in basic schools in Ghana remains a challenge. The findings further indicated that some basic school teachers had taken academic courses to improve their academic qualifications within the last three years. However, most teachers said they had not attended any ICT-based workshop in the last one year. The study recommended more in-service training for teachers who teach computing to bring them up to speed on the computing curriculum.

Key words: Computing, Competencies, Attitudes, Standards-Based Curriculum, KG-B6, Ghana.

Introduction

Information and Communication Technologies (ICTs) are commonly believed to inspire teachers and learners, encourage improvement, and facilitate the development of 21st century skills. The 21st century skills include; critical thinking, communication skills, information skills, digital skills, collaboration, leadership among others. (van Laar, van Deursen, van Dijk, & de Haan, 2020). ICTs are regarded as important tools for developing and managing all the 21st

century skills in the students. (Valtonen, et al., 2019). The 21st century skills are explicitly elaborated in the new standard-based curriculum as core competencies. These core competencies as stated in the computing curriculum for primary school are: critical thinking and problem solving, creativity and collaboration, communication and collaboration, cultural identity and global citizenship, personal development and leadership and digital literacy (NaCCA, Ministry of Education, 2019).

It is widely accepted that ICTs can be used to enhance teaching and learning quality at any educational level. In the age of information technology, the scale and rapid growth of ICT has turned human society into the literacy age (Galbreath, 2000). ICT is becoming a natural part of a person's daily life; thus, its use in education by teachers and students is becoming a necessity (Ikwuka & Adigwe, 2017). It is therefore imperative for teachers not only to use ICTs for teaching, but also, to become comfortable and competent in their use for their personal development. Teachers at all levels of education engage in teaching and research, with auxiliary administrative assignments.

ICT offers several opportunities in education. First, it can be used as a means of preparing the current generation of students for future work by providing tools for tomorrow's practices. 21st century students live in a global knowledge-based age (Chu, Reynolds, Tavares, Notari, & Lee, 2016) and they deserve teachers whose practice embraces the best that technology can bring to learning. Teachers will need to use ICT to equip employees and customers of tomorrow with the necessary skills and knowledge to utilise ICT in their work (Atuahene & Owusu-Ansah, 2013). Secondly, ICT will make the school more effective and competitive using a variety of resources to help and promote the professional activities of teachers. Finally, ICT is seen as a way of improving and innovating teaching to encourage learners to learn in a productive and autonomous manner and/or in partnership with others. Integrating ICT in school systems is a big move for creativity (Nikolopoulou, 2018). Quality education will therefore require sufficient teachers who are well-trained and motivated professionals with requisite knowledge and skills in the use of ICT. Mereku, Yidana, Hordzi, Tete-Mensah, Tete-Mensah, and Williams (2009), however, noted that teachers at pre-tertiary stage have little training on the use of ICT for teaching and learning.

During a master training for basic school teachers on the new computing curriculum in 2019, the authors of this paper observed that there was a lot of apprehension by teachers about the new additions to the computing curriculum. The introduction of the new computing curriculum may perhaps, pose some challenges to basic school ICT teachers. Topics which hitherto were taught in upper primary (Basic 4, 5 and 6) are now being taught at Basic One. New sub-strands like Introduction to MS-Publisher, Introduction to databases, Algorithm and Programming and Introduction to programming languages have been added to the Computing curriculum. These changes are likely to pose a challenge to especially, teachers who do not have a strong computing background. Others also raised concern about the lack of ICT tools to enable them teach effectively.

Even though many teachers at the basic level have the required certification and have been teaching for a relatively longer period, not much is known about their attitudes and confidence level in teaching computing, especially with regard to the new strands and sub-strands that have been added in the new curriculum. This study sought to measure the attitudes and confidence level of B1-B6 teachers in teaching the computing curriculum. It also looked into other factors that influence teacher-confidence such as the availability of ICT resources, skills of the teacher and attitude of the teacher towards using ICT tools in Ghana.

Literature Review

Theoretical Framework

Diffusion of Innovations Theory

Diffusion of Innovations Theory (Rogers, 2003) seeks to explain the process through which technological innovations are implemented and adopted by users. Rogers (2003) suggests that diffusion is the mechanism by which the participants in a social network express a novelty or invention over time. He opines that four factors affect the dissemination of a new idea: innovation itself, means of communication, time and social structure. His theory is heavily dependent on human resources (the inventory of behaviours, expertise, social and characteristic qualities expressed in labour capacity to generate economic value). The innovation must be generally accepted

to sustain itself. Within the adoption rate, an innovation reaches critical mass (a sufficient number of innovation adopters). Diffusion of Innovation Theory places emphasis on describing the way in which new concepts and ideas achieve large-scale implementation. The Theory posits that there are five categories of people as far as the adoption of an innovation is concerned. These are innovators, early adopters, early majority, late majority, and laggards.

Innovators are ready to take risks, have the highest social standing, have financial liquidity, are social, have the closest interaction with science sources and communicate with other innovators. Their risk tolerance allows them to implement potentially unsuccessful technologies. Such deficiencies are supported by financial capital (Rogers, 2003). Early Adopters are the most highly respected people in the groups of adopters. Early Adopters have a higher status, financial liquidity, advanced education, and are more socially advanced than late adopters. Their adoption choices are more discrete than innovators. They use sensible adoption options to help them retain a central communication role.

Early Majority supports creativity after the average user. They approach innovation with a high degree of skepticism and following the adoption of innovation by the majority of society. In general, Late Majority are skeptical of innovation, have a social status below average, low financial liquidity and little opinion leadership. Laggards are late innovation adopters.

Teachers can be categorised into innovators, early adaptors, early majority, late majority or laggards based on their attitudes towards ICT innovations (and tools for teaching) and their adaptability to the new curriculum. Positive attitudes are expected to translate into higher confidence level.
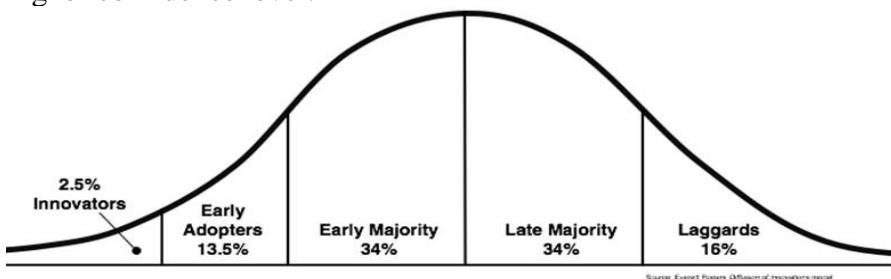
Figure 1: Diffusion of innovation theory

ICT Educational policies in Ghana

The Government of Ghana has shown commitment in the integration of ICT into teaching and learning at all levels of education; from the Basic School to the Tertiary level. Several policies have been put in place as part of efforts to integrate ICTs into teaching and learning, such as the ICT for Accelerated Development Policy (ICT4AD) in 2003. One of ICT4AD's objectives is to enhance the quality of life in Ghana by improving its physical, economic and cultural well-being, and rapidly develop and modernise the economy and society by using ICTs as the key motor for rapid and sustainable economic and social growth (Ministry of Trade, Industry and PSI, 2003).

The government of Ghana reiterated its commitment to the use of ICT in the educational sector in the Educational Reforms of 2007. The government indicated that "special attention will be given to the training of teachers in Technical, Vocational, Agricultural, Special Needs Education, Guidance and Counselling, ICT and French" (Ministry of Education, Science and Sports, 2007, p. 4). One of the main requirements of the 2007 reform is for all pre-tertiary school students in Ghana to learn basic ICT (including internet) literacy skills and to apply these to their studies and various ways of their daily life operation (Ministry of Education, 2008).

Subsequently, the government introduced ICT in Education Policy (2015) which was derived from the ICT4AD Policy. The Policy was intended to serve as a platform to launch a systematic ICT in Education delivery at all levels of education in Ghana. The Policy gives directions on how ICT will be deployed to support teaching and learning from primary to tertiary level of education in Ghana. The Policy further envisaged to achieve greater results with a view to access, equity and quality while also accelerating the economy's growth by "enhancing access to education and improve the quality of education delivery on equitable basis" (Ministry of Education, 2015, p. 9).

A new Basic Education curriculum implemented in August, 2019 has repackaged the subject, ICT as Computing. Computing is incorporated in the KG curriculum. In the new Basic Education Curriculum, Computing is taught as part of Our World, Our People from Basic 1-3 and as a stand-alone subject from B4-B6. It continues as a subject in the Common Core Programme from B7-B10. Learners

in the Basic Education curriculum will therefore have computing lessons for 12 years.

Importance of ICT in education

Kuyoro, Awodele and Okolie (2012) note that ICT tools contribute to the enhancement of learning since they can play a role in reforming education systems. ICT also increases access to pedagogical resources, improving learning outcomes, improving retention of learned content by students. Furthermore, ICT improves the management of education and enhancing pedagogical techniques.

The effective incorporation of ICT into the education system, according to Tinio (2003), is an intricate multi-faceted procedure involving not only ICT, but also curriculum and pedagogy, schools preparation, teaching expertise and permanent funding. The integration of ICT into teaching and learning goes beyond making computers available to teachers and students but supporting teachers to reach the point where they are confident to incorporate ICT tools into their day-to-day professional activities (Mukuna, 2013). The existence of ICT tools and the resourcing of teachers to be abreast with the use of ICT is an area that appears minimal in Ghanaian schools. Buabeng-Andoh and Yidana (2015) report that if teachers were provided with sufficient ICT resources as well as administrative support, they would be motivated to use ICT in their teaching.

Support for ICT Education in Ghana

There are several NGOs seeking to provide support in the education sector of which some aim at encouraging the integration of ICT into teaching and learning and improving the quality of teaching and learning in general in Ghanaian schools. Examples include *Transforming Teacher Education and Learning* (T-TEL), a six-year UK-Aid-supported government programme for Ghana that offers high-quality motivational teaching and learning in schools. They are also collaborating with the Ministry of Education, its regulatory agencies and all 46 public educational colleges in Ghana to boost the quality of pre-service teacher education and promote the introduction of a Bachelor's degree in colleges of education in Ghana.

Other NGOs like *IT for Children*, a Sweden-based NGO whose main activities are in Ghana aims to provide free and daily access to computers, the internet and ICT education for students in Ghana. In

2016, it began operation in a small coastal village of Busua, in the Western Region of Ghana, where children were unfamiliar with computers. The beneficiaries have since learned to check for information online as well as run variant computer programs. As a result of the activities of the NGO, the world of information and communication is within the reach of these children. The IT for Children's outreaches have opened a door to children and young people from their first click on a computer to a wide world of technology and communication.

A team of volunteers created *Africa ICT Right (AIR),* ICT-oriented NGO in 2007. It was formed to use ICT resources to address critical national issues in Ghana concerning education, gender, youth empowerment and health. It was developed on the assumption that in the midst of a profound technological transition the digital world plays a vital position for computers, cell phones and the Internet. However, there are significant gaps in the delivery of these resources that not only harm underserved communities but also society. The NGO collaborates with donors, governmental and private organisations, NGOs, and local communities to resolve this disadvantage. This is done through coordinated development programmes that include technological solutions and funding for educational and health facilities, particularly in less privileged areas where the digital divide is highest.

Computers for Schools Ghana is another organisation that seeks to provide computing education to school children in Ghana. Since 2016, this NGO envisions that "*All students in Ghana can obtain 21st century skills*. Information technology is fundamentally changing the world and the job market thus will be a key factor for the development in the ECOWAS region, and Ghana. Students should be prepared for the job market of the 21st century, with 21st century skills like creativity, independent thinking, teamwork and cross- cultural communication. Digital literacy and the ability to apply ICT in problem solving will be fundamental for survival in the 21st century. Ghanaian children must have the opportunity to take part in these changes, by having access to internet and to computers (Computers4Schools Ghana, 2020). In order to see *the dream of Ghanaian child,* with the core competencies listed above, teachers' level of confidence in handling the standard-based curriculum is paramount. This study sought to find the confidence level

of B1-B6 teachers in teaching the standards-based computing curriculum.

Research Questions
The following questions guided the study:
1. To what extent are B1-B6 teachers confident in teaching the sub-strands of the computing curriculum?
2. What are the attitudes of B1-B6 teachers towards the use of ICT tools?
3. What resources are available for teaching and learning of computing in the basic schools?
4. What requisite training do B1-B6 teachers have to teach the new computing curriculum?

Research Hypotheses
The research was guided by the following hypotheses:

H_1: There is a relationship between the attitude of teachers towards the use of ICT tools in teaching and their confidence level in teaching the new computing curriculum.

H_1: There is a relationship between availability of ICT tools, and the confidence of the teachers in teaching the new computing curriculum

Methodology
The survey design was used for the study. This design was chosen because the research was essentially to solicit information from B1-B6 teachers on how confident they are to teach the sub-strands of the computing curriculum, their attitudes towards the use of ICT tools in teaching, availability of ICT tools for teaching computing in their schools and the extent to which they have undertaken professional development within the last 3 years.

The population was B1-B6 teachers in Ghana. The link to participate in the study was sent to all 10 regions in the country. However, only five regions participated in the study. Simple random sampling and stratified random sampling were used to select respondents at various stages of the research. First, the population was

stratified into five regions; Central, Volta, Northern, Greater Accra and Ashanti. Simple random sampling was used to select 127 teachers from the regions. The regional distribution of teachers were as follows; Central (24), Volta (25), Northern (20), Greater Accra (31) and Ashanti (27). The 127 teachers sampled were made up of 107 male teachers and 20 female teachers. The majority of the teachers (97%) are First degree holders.

Self-developed structured questionnaire was used for data collection. The questionnaire was made up of five sections: Section A consisted of seven questions and it focused on demographic information of the teachers. Section B focused on the Confidence Level of teachers to teach the various sub-strands in the Computing Curriculum. This section contained 21 items on a five-point Likert scale. Section C of the questionnaire which contained 12 items addressed the issue of Teachers' Attitude towards using ICT tools. Section D contained 11 items and was designed to enquire about the availability of ICT resources and Section E (three items) enquired about the professional development of teachers. One hundred and forty questionnaires were distributed to teachers who were selected as Metropolitan and District Master trainers for the new computing curriculum. Out of the 140 questionnaires distributed, 127 of the questionnaires were returned, giving a response rate of 93%. The questionnaires were made available to an expert in ICT Education to assess its face and construct validity. The reliability of the subscales of the questionnaire were tested using Cronbach's coefficient alpha and it yielded a value of 0.783 for confidence level, 0.771 for attitude towards ICT, 0.766 for availability of ICT tools and resources and 0.810 for Professional Development. The data collected was analysed using means, standard deviation and correlation.

Results and Discussions
The data collected to answer research questions 1 to 4 is presented in Tables 1, 2, 3 and 4.

B1-B6 teachers' confidence in teaching the sub-strands of the computing curriculum

The research question sought to find out the confidence level of the teachers in relation to the new curriculum and the result is presented Table 1.

Table 1: B1-B6 teachers' confidence in teaching sub-strands of the computer curriculum

	I am confident in teaching:	Mean	Std. Deviation
1	Generation of computers and parts of a computer and other gadgets.	4.6378	.58648
2	Introduction to MS windows Interface.	4.2756	.78353
3	Data source and data usage.	4.3071	.74014
4	Technology in the community.	4.3150	.66310
5	Introduction to MS Power Point.	4.1496	.79760
6	Introduction to word processing.	4.2047	.80018
7	Introduction to Publisher	3.8268	.78775
8	Introduction to database, algorithm and programming.	3.3622	.78345
9	Introduction to Program language, MS Excel, Scratch, VB, dot.net.	3.2756	.91441
10	Introduction to electronic spreadsheet	3.8740	.94274
11	Network Overview	3.7480	.96748
12	Web browser and web page.	4.1260	.95943
13	Surfing the world wide web.	3.9134	1.06177
14	Favorite places and search engines.	4.1102	.91918
15	Using online forms	4.0787	.86928

16	Customizing your browser.	3.6772	.96676
17	Electronic Email.	4.2126	.86950
18	Internet of Things (IoT).	3.9291	.88355
19	Digital literacy.	4.1024	.83414
20	Network etiquette.	4.0551	.91119
21	Health and Safety in using ICT tools	4.5512	.63881
	Total	**4.0349**	**0.33686**

From Table 1, the sub-strand with the highest mean is sub-strand 1 (Generation of computers and parts of a computer and other gadgets) with a mean of 4.6378 followed by sub-strand 21 (Health and Safety in using ICT tools) which had a mean of 4.5512. The mid value means are 3.6772 and 3.7480 which were for sub-strand 16 (customising your browser) sub-strand 11(Network overview) respectively. The sub-strands with low mean values are sub-strands 9 (Introduction to Program language, MS Excel, Scratch, VB, dot.net.) with a mean of 3.2756 and sub-strand 8 (Introduction to database, algorithm and programming) with a mean of 3.3622. The total mean score of the responses was 4.0349 which indicate a high confident level of the teachers to teach the sub-strands in the new computing curriculum. This result is good for the implementation of the new computing curriculum since it suggests that a majority of the teachers showed high confidence in teaching the new computing curriculum. The high confidence level indicates most basic school teachers fit into the description of early adopters of the innovation diffusion theory.

Attitudes of B1-B6 teachers towards the use of ICT tools
The attitude of B1-B6 teachers towards the use of ICT tools is shown in Table 2.

Table 2: Attitude of teachers towards the use of ICT in teaching

S/N	Attitude	Mean	Std. Deviation
1.	ICT provides better learning experiences	4.7165	.48628
2.	I could work harder if I could use ICT	4.7008	.71620
3.	ICT is useful for the dissemination of Information	4.8504	.37961
4.	CT makes course more interesting	4.8110	.39304
5.	ICT enhances students learning	4.7874	.46513
6.	I won't have anything to do with ICT	1.4762	. 97746
7.	I have Phobia for ICT equipment	1.5906	1.04163
8.	ICT can't address the needs of the school System	1.6772	1.10469
9.	The state of facilities discourages me from the use of ICT	2.9291	1.40397
10.	I enjoy lessons on the computer	4.5512	.73148
11.	Knowing how to use a computer is a worthwhile skill	4.6929	.67273
12.	I have a lot of confidence when it comes to working without computers	2.9843	1.36849
	Total mean	**3.6473**	**1.41567**

From Table 2, the two high means were 4.8504 and 4.8110 which indicate that most of the teachers believe that ICT is useful for disseminating information and also ICT makes teaching a course more interesting. Again, Table 2 indicates two low means of 1.4762 and 1.5906. The other low mean value of 1.5906 shows that some teachers have a phobia for ICT equipment. The average mean attitude of basic schoolteachers towards the use of ICT is 3.6473. This indicates that the basic schoolteachers have positive attitude towards the use ICT. These findings affirm the research findings that reported positive attitude regarding the use of technology by teachers in several countries

(Nishta, 2012; Teo, 2008; Ng & Gunstone, 2003; Hong & Koh, 2002) that teachers were more positive about their attitude towards computers and intention to use computers. This result will likely influence the teachers' use of ICT tools in their teaching as posited by Sadik (2006). Associating the result with the diffusion of innovation theory, confirm that early adopters of technology are more "socially forward" than early majority, late majority and laggards.

Resources availability for teaching and learning of computing in the basic schools

The results collected on the availability of resources for teaching and learning computing in basic school is indicated in Table 3.

Table 3: Availability of ICT tools and resources

S/N	ICT tools/resources	Available	Not available	Total
1	Desktop/laptops for personal use	37(29.1%)	90(70.9%)	127(100)
2	Printer	13(10.2%)	114(89.8%)	127(100)
3	Digital Cameras	16(12.6%)	111(87.4%)	127(100)
4	School Internet	8(6.3%)	119(93.7%)	127(100)
5	Digital Projector	12(9.4%)	115(90.6%)	127(100)
6	Computer for use in the Classroom	19(15.0%)	108(85.0%)	127(100)
7	Computer lab	15(11.8%)	112(88.2%)	127(100)
8	Laptop computers for the students use	6(4.7%)	121(95.3%)	127(100)
9	Interactive whiteboards	21(16.5%)	106(83.5%)	127(100)
10	Personal Email Accounts	88(69.3%)	39(30.7%)	127(100)
11	Cooperate Email Account	12(9.4%)	115(90.6%)	127(100)

Data in Table 3 gives an indication that ICT tools and resources are not available in the schools. Out of the 11 ICT tools and resources listed, only e-mail had a high availability rate of 69.3%. Almost all the tools listed had low ICT tools and resources available. This suggests that most of the ICT tools and resources are not available for use by basic schoolteachers. This result resonates with a research by Savannah Signatures (2010) which suggests that the majority of basic schools in the northern part of Ghana lack ICT tools. Swarts and Wachira (2010) also give credence to the results by indicating that only a small number of basic schools have ICT facilities which affect its availability to teachers. Even though the confidence level and attitude of teachers are high, the unavailability of ICT tools may affect the teaching and learning of the computing curriculum in a negative way. It is important that NGOs and other stakeholders who support education in the basic schools increase their support in providing ICT tools to improve teaching and learning.

Requisite training of B1-B6 teachers to teach the new computing curriculum

The research question 4 sought to find out whether B1-B6 teachers have the requisite training to teach the new computing curriculum through professional development. The results is displayed in Table 4.

Table 4: Professional development training of respondents

S/N		Agree	Disagree	Total
1	I have taken an academic course to improve upon my qualifications in the last three years	83(65.4%)	44(34.6%)	127(100)
2	I take active role in PLCs (Professional Learning Communities)	89(70.1%)	38(29.9%)	127(100)
3	I have attended an ICT-based workshop in the last one year	44(34.6%)	83(65.5%)	127(100)

Table 4 shows that 65.4% of the respondents indicated that they have taken academic courses to improve their qualifications in the last three years. Also, 70.1% of the teachers agreed to take active role in the Professional Learning Communities. Data in Table 4 indicate that a 65.5% of teachers have not attended any ICT-based workshop in the last one year. This result supports the assertion by Mereku, Yidana, Hordzi, Tete-Mensah, Tete-Mensah, and Williams (2009) that teachers at pre-tertiary stage are not given any training on the use ICT for teaching and learning. This may have justified teachers' apprehension towards the new computing curriculum because of the new additions that have been made. This is likely to affect the teachers' use of ICT in teaching new computing curricula as well as using ICT as tool to teach other subjects.

Relationship between the attitude of teachers towards the use of ICT tools in teaching and their confidence level in teaching the new computing curriculum

Table 5 shows the correlation between teachers' attitude and confidence level of teachers in teaching the new computing curriculum.

Table 5: Correlation between teachers' attitude and confidence level of teacher in teaching the new computing curriculum.

Correlation		Confidence	Attitude
Confidence	Pearson Correlation	1	.494
	Sig. (2-tailed)		.103
	N	127	127
Attitude	Pearson Correlation	.494	1
	Sig. (2-tailed)	.103	
	N	127	127

[*]Correlation is significant at the 0.05 level (2-tailed).

The result in Table 5 shows that there is a positive correlation between teachers' attitude and confidence level of teachers in teaching the new computing curriculum. According to a general guideline provided by Cohen (1988) the value 0.494 indicates a moderate positive correlation but the p value of 0.103 is greater than 0.05. This suggests that the relationship is not statistically significant. Using the

R^2 value of 0.244, it can be posited that about 24% of the variability of teachers' attitude can be explained by their relationship with the confidence level of teachers in teaching the new standard based computing curriculum. However, the result affirms Gardner, Dukes, and Discenza's (1993) finding that computer confidence positively affected computer attitudes even though the relationship is moderate.

Relationship between availability of ICT tools, and the confidence of the teachers in teaching the new computing curriculum

Table 6 shows the correlation between availability of ICT tool and confidence.

Table 6: Correlation between Availability of ICT tool and confidence

		Availability of ICT	Confidence Level
Availability of ICT	Pearson Correlation	1	.385
	Sig. (2-tailed)		.306
	N	127	127
Confidence Level	Pearson Correlation	.385	1
	Sig. (2-tailed)	.306	
	N	127	127

*Correlation is significant at the 0.05 level (2-tailed).

The results in Table 6 suggest a positive correlation between the availability of ICT and the confidence of teachers to teach the new computing curriculum at 0.385. Using the general guidelines provided by Cohen (1988), the value of 0.385 indicates a moderate positive correlation. With the p value of 0.306 which is more than 0.05 shows that the relationship is not statistically significant. Nevertheless, this result corroborates several research findings which suggest a positive correlation between access to ICT tools and confidence level of teachers (Cox, Preston & Cox, 2009; Becta, 2003; Guha, 2000; Ross, Hogaboam-Gray & Hannay, 2009).

Conclusion and Recommendations

The study established that most teachers can confidently teach the content of the new computing B1-B6 curriculum. Most of them also have positive attitude towards using ICT tools. However, TLMs used to support the teaching of ICT lessons are inadequate in most of the schools. The attitude of teachers in using ICT tools had a moderate positive relation on their confidence level. Finally, the study found that inadequate ICT tools at the basic schools had a moderate positive relation with the confidence level of B1-B6 teachers.

The following recommendations are made based on the findings:

1. Even though the confidence level of basic schoolteachers in teaching the sub-strands in the new computing curriculum is generally high, more should be done to improve it by way of organising in-service training and ICT workshops to further boost their confidence level. The GES, NGOs and other stakeholders should take a lead in this.
2. Government of Ghana and NGOs and other stakeholders should step-up efforts at building computer laboratories, ICT resource centres and providing other ICT resources at the basic schools.
3. Basic school ICT teachers should be innovative in acquiring ICT resources.
4. The government should make computers (laptops and projectors) affordable to teachers so that most teachers can have access to computers for their professional practice.

The government of Ghana should initiate a programme where computer hardware from higher educational institutions and government agencies which are no longer in use could be sent to basic schools to be used as teaching and learning materials.

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