Journal of Capital Development in Behavioural Sciences Vol. 5 Issue 2 (Dec, 2017) Faculty of Arts & Education, Lead City University, Ibadan, Nigeria ***ISSN Online:*** *2449-0679* ***ISSN Print:*** *2354-3981*

Girl-Child Education in Science, Technical and Vocational Programmes: An Imperative for Economy Security

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Abstract

This study examined the enrolment of girl-child in Science, Technical and Vocational Education (STVE) for economy security. Survey approach was adopted for the study. Samples comprised of all girls in Junior and Senior Secondary Schools in 2014/2015 academic session in Gombe State. Two instruments were used, Interview and Annual School census report for data collection. The data collected were analyzed through frequency count and simple percentage. The findings revealed that 74,467 students enrolled into Junior Secondary Schools and only 875 (1.2%) were girls of ages 12-14 in Vocational Schools. Also, the enrolment of students in Senior Secondary Schools was 52,581and only 1,856 (3.5%) were girls of ages 15-17 in Science and Technical Schools. Based on the findings of this study, it was recommended that the girl-child be given the needed attention and encouragement to enroll in STVE Programmes. The skills acquired from the School will help to provide them with the required strategies for job-creation and poverty eradication – through self-employment, employment in the labour market and pursuance of career in Science, Technology and Mathematics fields, which in turn, will improve the local and global economy.

Keywords: Economy Security, Girl-Child, Science, Technical and Vocational Education.

Introduction

One of the National education goals as enunciated in the constitution of Nigeria, is the provision of equal access to qualitative educational opportunities for all citizens, at all levels of Education within and outside the formal school system (FRN, 2014).

Science, Technical and Vocational Education (STVE) is a Secondary Education in Nigeria, which trains students in a variety of skills, especially in the electrical works, carpentry and joinery, welding and fabrication computer Technology, Food and Nutrition. The official ages for Vocational Education (VE) are 12-14 years, while those for Science and Technical Education (STE) are 15-17 years (Ministry of Education, 2015).

STVE paves way for Science, Technology and Mathematics Education at Tertiary level, of which after completion of studies in the Polytechnic, College of Education or University, the graduates will add to the number of human resources to meet the demands for manpower - locally or globally.

Secondly, STVE also fits an individual for gainful employment after Secondary School, in recognized occupation as semi-skilled worker such as technician or sub-professional. This practice can improve economic opportunities for students, of which the girl-child is one, who will not proceed to tertiary level. The completion of studies in STVE can lead to self-reliance through self-employment or have jobs. Job employers in most cases do not emphasize certificates much but what one can do (UNESCO, 2010).

STVE also facilitates the acquisition of practical and applied skills as well as basic scientific knowledge (Okafor, 2011). Nuru (2000) indicated that changes in Nigeria economy is required to prepare young people (girl-child inclusive) for jobs of the future.

STVE is aimed at providing skilled manpower to meet market demand. Youths who passed through STVE can work to earn their living through the knowledge acquired in school; hence, this can help in reducing poverty in society and bring about sustainable economy security. One of the development tasks of the girl-child is the attainment of economy independence which she can become gainfully employed by self or in the labour market; this will then contribute to economy security. The unemployment of a girl-child tends to have negative psychological effect on the girl herself, the family and the nation at large.

The girl-child is a biological female offspring from birth to eighteen (18 years). The period covers the pre-nursery or early childhood (0-5 years), primary (6-12 years) and Secondary School (12-18 years). During

this period, the young female is totally under the care of the adults, who may be her parents or guardians and, or siblings (Ocho, 2005). The growth of a girl-child is made up of infancy, childhood, early and late adolescence stages of development. During these periods, the girl is malleable, builds and develops her personality and character (Yuguda, 2016). Her physical, mental, social, spiritual, political, economic and emotional development starts and progresses to the peak at the young adult stage. The achievement of right Education requires that both male and female children be given the opportunity necessary for the acquisition of knowledge, skills, attitude and values. This will enable them live happy and productive lives as individuals and discharge their social duties for the betterment of life in the society. STVE is that aspect of Education which is skill acquisition oriented form of training, it prepares students in terms of self-employment also it gives opportunity for employment in the labour market and career development through the study of Science, Technology and Mathematics at tertiary level.

The neglect of girl-child access to STVE in the area of adequate personnel financial support and facilities robs the nation of her contribution to economy security.

STVE has effect on people's lifestyle; it affects the way people eat, drink, travel, work, play and sleep. It also carries alone with environmental implications such as pollution (Olaitan, 2007). Everyone in the society sees, hears, touches or uses various objects in the course of a single day. Such objects include soap, tooth paste, broom, knife, safety razors, hot water, mobile phones, cars, buses, train, and objects in the offices, factories, homes, schools, restaurants and theatres. In addition to all these, one is likely to touch and use such devices designed to save physical labour, as tractors, those designed to help in communication, entertainment, transportation, high-speed computers and medicines. All these and many more are called products of Technology (Awachie, 2001).

It is interesting to note that before such products developed, a significant scientific discovery had been made. Each of these examples demonstrates a symbolic relationship between Science and Technology. For example, knowledge obtained from the scientific disciplines of

Mathematics and Electronics were used to produce high-speed computers. Female children should be given the needed attention and encouragement to attend STVE programmes. Men alone cannot bring about economy security but when they work together with their female counterparts, it will be possible because the females will contribute their quota in it. Under-representation of girls in STVE shows a double talent loss both for the industries which will need skilled workers and for the females themselves, because both male and female gender play complementary roles.

Girl-child education is a necessity – not a luxury because of the roles women play within the family, society and the country at large (Sulaiman and Aliyu, 2001). This is what made Dasheen and Dasheen (2004) to affirm the saying that when a girl-child is educated, a nation and the next generation of men and women will be educated. However, Sidiku (2000) observed that some parents refuse the female children going to school because they feel that no matter what they achieve in life, they still need to bow for and depend on their husbands who are sole determinants of their faith.Kunhiyop (2008) stated that male child preference is a prevalent practice because male children are said to maintain family lineage, so, some parents would prefer to educate the boys rather than girls, especially when they are faced with choice of sending a girl or a boy to school. Girls may be asked to stay at home so that they can nurse relatives that are sick or to look after young siblings and doing house chores (Anyanwu, 1999).

In some cases, the girl child may be married out at teenage in quest of dowry from the husband. Some parents may deny girls of their right to education; claiming that it will prevent them from bringing shame to the family through unwanted pregnancy. The education of girls and women is regarded as “valueless” they are rather seen as “birds” of passage, so, investing in their education is considered as a waste (UNICEF, 1993).Both male and female gender should be given equitable opportunity to Education.

In terms of courses offered in schools, there is a lingering but largely unapproved feeling that female gender cannot cope with studies in Science, Technology and Mathematics orientated courses (Chibuzor,

2005). The female gender themselves sometimes have negative attitude to these courses (Akinroye, 2001). Lesser number of females are found in professional career of Engineering, Medicine, Geology, among others (Sidiku, 2000).

Many females have poor self- concept and low self–esteem which prevent them from coping adequately with challenges of learning and life situation. They are unduly influenced by the negative impressions the society place on them (Ogidi, 2001& Okereke, 1991). This then becomes a very serious impediment to their learning and educational pursuits (Akpan, 2001).

Statement of the Problem

The main purpose of education according to FRN (2014) is to develop individuals so that they can be useful to themselves, their families and the society at large. This includes contribution to both local and global economy. However, there is an inadequate number of girl-child in Schools in Gombe State particularly, in Science, Technical and Vocational programmes. This study therefore, seeks to find out the population of girls in Science, Technical and Vocational Schools in Gombe State.

Objective of the Study

This study is designed to achieve the following objectives:-

(i) To identify the number of girls in public Junior Secondary Schools of ages 12-14years.

(ii) To determine the population of girls whose age ranges between 12-14 in Vocational Schools.

(iii) To find out the population of girls of ages 15-17 in Senior Secondary Schools.

(iv) To identify the number of girls of ages 15-17 in Science and Technical Schools.

Research Questions

(i) What is the population of girls whose age ranges between 12-14, in public Junior Secondary Schools in Gombe State?

(ii) What is the total number of girls of ages 12-14 in public Vocational Schools in Gombe State?

(iii) How many girls, ages 15-17, are in public Senior Secondary Schools in Gombe State?

(iv) What is the population of girls of ages 15-17, in public Science and Technical Schools in Gombe State?

Methodology

This study adopted a descriptive survey design. The area of the study is Gombe State, north-eastern part of Nigeria. The population of students in all the public Junior and Senior Secondary Schools in Gombe State, 2014/2015 academic session was 74,467 (for JSS) and 52,581 (SSS) giving a total of 127,048 (Annual School Census, 2015 by Ministry of Education, Gombe State).

The samples for this study are all girls of ages 12-14 and 15-17 in both Junior and Senior Secondary Schools in Gombe State. Ten officials of the Ministry of Education Gombe State were selected by stratified random sampling and interviewed by the researcher. These officials included five School inspectors and five officials of the Directorate of Planning, Research and Statistics. The instruments for data collection were interview questions and School reports. The interview questions were a twenty (20) item questions developed by the researcher to solicit for responses from the interviewees. The questions were divided into two sections, A and B. Section A consisted of five (5) statements on personal information of the respondents.

The second part, which is section B, consisted of fifteen items. The items sought for information on the number of secondary schools in Gombe State, the population of students in the schools, and the number of boys and girls in every school. The items also focused on knowing the number of students in Vocational, Science, and Technical Schools in the State. In addition, the number of girls in Vocational, Science and Technical Schools was demanded from the respondents.

The information collected was analyzed using frequency count and simple percentage. The participants were randomly sampled. The instruments measured the number of female students in Science, Technical, and Vocational Schools in Gombe State.

Results

The data collected are presented in tables in accordance with the research questions.

Research question one: What is the population of girls of ages 12-14 in Junior Secondary Schools?

Table. 1: Public Junior Secondary School enrolment, Ages 12-14 by gender and Local Government Area (L.G.A).

LGA	All students	Total		Ages12-14		
		Girls only	Girls Only %	All students	Girls only	% of Girls
Akko	9,603	3,729	39%	7,575	2,970	39%
Balanga	7,349	3,396	46%	5,366	2,577	48%
Billiri	5,866	2,928	50%	3,108	1,490	48%
Dukku	2,791	1,048	38%	2,129	801	38%
Funakaye	3,613	1,037	29%	2,604	798	31%
Gombe	22,343	10,505	47%	17,269	8,118	47%
Kaltungo	5,954	2,960	50%	4,371	2,165	50%
Kwami	4,349	1,647	38%	3,560	1,350	38%
Nafada	2,559	522	20%	1,953	398	20%
Shongom	4,459	2119	48%	3,464	1,649	48%
Y/Deba	5,581	1,951	35%	4,080	1,397	34%
Total	74,467	31,842	43%	55,479	23,713	43%

Source: Ministry of Education, 2015

Table 1. revealed the enrolment of students in public Junior Secondary Schools by gender and LGA in Gombe State. The total population of students is 74,467, while that of females students is 31,842 (43%).In addition, the total number of students within the ages of 12-14 is 55,479 while that of girls only is 23,713(43%).

Research Question Two: What is the total number of girls of ages 12-14 in Vocational Schools?

Table 2: public Vocational Schools (Junior Secondary) enrolment, Ages 12-14 by Gender and LGA

LGA	All students	Total		Ages12-14		
		Girls only	Girls only %	All students	Girls only	% of Girls
Akko	165	41	25%	160	39	24%
Balanga	397	137	35%	324	113	35%
Billiri	248	63	25%	132	34	26%
Dukku	109	24	22%	98	22	22%
Funakaye	396	109	28%	312	81	26%
Gombe	1,600	534	33%	1,310	342	26%
Kaltungo	317	130	41%	258	105	41%
Kwami	-	-	-	-	-	-
Nafada	270	60	22%	163	36	22%
Shongom	85	13	15%	48	8	17%
Y/Deba	313	120	38%	268	95	35%
Total	3,900	1,231	32%	3,073	875	28%

Source: Ministry of Education, 2015

The result on Table 2 above indicates that there are 3,900 students of all age groups in all the eleven local Governments of Gombe State, while the population of girls only is 1,231 (32%). However, the Total number of students within age bracket of 12-14 is 3,073, while that of girls only is 875 (28%).

Research Question Three: How many girls of ages 15-17 are in public Senior Secondary School?

Table 3: Enrolment of students in public Senior Secondary Schools (Ages 15-17) by gender and LGA

LGA	All students	Total		Ages15-17		
		Girls only	Girls only %	All students	Girls only	% of Girls
Akko	6,000	2,338	39%	3,673	1,540	42%
Balanga	3,697	1,231	33%	2,590	2,590	30%
Billiri	3,710	1,331	36%	2,640	759	29%
Dukku	2,1710	631	29%	1,627	478	29%
Funakaye	2,802	702	25%	1,913	490	26%
Gombe	17,382	6,373	37%	13,270	4,818	36%
Kaltungo	4,854	2,682	55%	3,592	1,976	55%
Kwami	3,548	902	25%	2,637	702	27%
Nafada	1,485	195	13%	1,106	103	9%
Shongom	2,259	10,771	47%	1,500	723	48%
Y/Deba	4,669	1,833	39%	3,575	1,442	405
Total	52,581	19,288	37%	38,129	13,911	36%

Source: Ministry of Education, 2015

The data on Table 3 above revealed that there are 52,581 students of all ages enrolled in public Senior Secondary Schools, while that of girls only, is 19,288 in all the eleven (11) Local Government Areas of Gombe State. However, students of ages 15-17 are 38,129 in all the 11 LGAs, while 13,911 (36%) out of the total number are only girls.

Research Question four

What is the population of girls of ages 15-17 in Science and Technical Schools?

Table4: public Science and Technical Schools (SS level) enrolment, ages 15-17 by Gender and LGA

LGA	All students	Total		Ages15-17		
		Girls only	Girls Only %	All students	Girls only	% of Girls
Akko	1,736	809	47%	1,413	527	37%
Balanga	-	-	-	-	-	-
Billiri	282	127	45%	269	121	45%
Dukku	-	-	-	-	-	-
Funakaye	-	-	-	-	-	-
Gombe	3,149	1,267	40%	3,489	1,070	43%
Kaltungo	961	92	10%	697	57	6%
Kwami	164	28	17%	157	28	18%
Nafada	-	-	-	-	-	-
Shongom	-	-	-	-	-	-
Y/Deba	284	109	38%	124	53	43%
Total	6,575	2,432	37%	5,149	1,856	36%

Source: Ministry of Education, 2015

Table 4 above indicated the enrolment of students in Science and Technical Schools (SSI-III) of ages 15-17 by gender and LGA. Five out of the11 LGAs had no Science and Technical Schools. The LGAs are Balanga, Dukku, Funakaye, Nafada and Shongom.

The other six (6) LGAs (i.e. Akko, Billiri, Gombe, Kaltungo, Kwami and Yamaltu/ Deba) have a total of 6,575 students; that of girls only is 2,432 (37%). The enrolment of students of ages 15-17 stood at 5,149, while that of girls only is 1,856 (36%).

Discussion of Findings

The result presented on Table 1 revealed the total number of enrolments in public Junior Secondary Schools as 74,467 while that of girls only is 31,842 (43%). The enrolment of students of ages 12-14 stood at 55,479, while that of girls only is 23,713 (43%). This result shows that there is good enrolment of girls in Schools. This is in line with what Sulaiman and Aliyu (2001) stated that girl-child education is a necessity not a luxury,

because of the roles women play within the family society and the country at large.

Table 2 indicated the total population of students in Vocational Schools as 3,900 while that of girls only is 1,231 (32%). However, the population of students in Vocational Schools of ages 12-14, stood at 3,073, while that of girls only is 875 (28%). The population of girls only (ages 12-14) is 875 (i.e 1.2%) when compared to the total number of students in public Junior Secondary Schools (74,467). The percentage of girls only (ages 12-14) is insignificant. This therefore, indicates that very few students are into STVE especially girls. This result confirms what Sidiku (2000) stated, that lesser number of females are found in professional careers of Engineering, Medicine, Geology, among others.

The result on Table 3 revealed that there are 52,581 students in public Senior Secondary Schools (SSI-III) out of which 19,288 (37%) are females. 38,129 of the students are between ages 15-17, while girls only are 13,911 (36%).

Table 4 indicates that the total number of students in Science and Technical Schools is 6,575, while that of girls only is 2,432 (37%).

However, students of ages 15-17 in Science and Technical Schools are 5,149, while girls only are 1,856 (36%).

When the number of girls only (1,856) of ages 15-17 is compared to the total population of students in public Senior Secondary Schools, the figure indicated 3.5% only.

This finding is in line with Chibuzor (2005), who frowned at the discrimination meted out to female gender in some aspects which are critical to life especially Science, Technology and Mathematics courses. In the same vein, Sidiku (2000) observed that some parents refuse the female children going to School because they feel that no matter what they achieve in life, they still need to bow for and depend on their husbands who are sole determinants of their faith.

Likewise, Kunhiyop (2008) stated that male child preference is a prevalent practice because male children are said to maintain family lineage, so, some parents would prefer to educate the boys rather than girls, especially when they are faced with choice of sending a girl or a boy to school. Girls may be asked to stay at home so that they can nurse relatives that are sick or to look after young siblings and doing

house chores (Anyanwu, 1999). In some cases, the girl child may be married out at teen age in quest of dowry from the husband. Some parents may deny girls of their right to education claiming to prevent them from bringing shame to the family through unwanted pregnancy.

Conclusion

Change in Nigeria's economy is required to prepare the girl-child for jobs in the future so that she can have economy security. Science, Technical and Vocational Education will help produce skilled manpower to meet market demand and also help to provide required strategic skills for job creation and poverty eradication. In the light of the findings of this study, it is hereby recommended that all stakeholders (government, teachers and parents) should give the needed attention and encouragement to female gender to attend Vocational Science and Technical programmes so that they can have economy security and also contribute their quota to both the local and global economy.

Recommendations

In the light of the findings of this study, it hereby recommended that:

- All stakeholders (Government, Teachers and Parents) should give the needed attention and encouragements to female gender to attend vocational, science and technical programmes so that they can have economy security and also contribute their quota to both the local and global economy.
- The government should establish more science, technical and vocational schools for the girl-child in Gombe State in additional to the existing ones.
- Parents should encourage their wards to pass through vocational and technical schools so that they can become employers after graduation.
- The girl-child should be encouraged to develop interest in science, technical and vocational education so that she can be trained in variety of skills such as computer technology, carpentry, auto-mechanic, food and nutrition among others for self employment or to gain employability.

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