

**ASSESSMENT OF DROPOUT RATE AMONG SENIOR SECONDARY
SCHOOL SCIENCE STUDENTS IN FEDERAL CAPITAL
TERRITORY (F.C.T) ABUJA, 2011 -2016**

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Abstract

The study was undertaken to assess the dropout rates of senior secondary school science students in FCT from 2011-2016. The study adopted survey research design. The population of the study comprised of all senior secondary schools science students in FCT, Abuja and sample size of 3516 senior secondary school science students from five Public Senior Secondary schools drawn across the FCT using multistage sampling procedure. Science Student Enrolment and Dropout Inventory Form (SSEDIF) was used for data collection. Data collected were analyzed using simple percentage, t-test and ANOVA. The results of the study revealed that the Rate of dropout of secondary school science students in FCT from 2011 – 2016 is decreasing in a very slow rate from 2011 to 2016. It was recommended that the government should be more proactive in their efforts to reduce the rate of dropout of senior secondary school science students in FCT, Abuja. Thus, government through her agency for science education should plan and introduce incentive measures that will help to retain, sustain and encourage senior secondary school science students, mostly the male science students towards successful completion of their programme. Such incentive may include scholarship, science grants and attractive graduation package. Government also create more job opportunities and enabling environments for graduates to be self-employed.

Introduction

It is unanimously agreed among scholars that education is the hub of development of every economy. Kareem and Egbeta (2014) regard education as an instrument for developing the nation and hidden talents in an individual. It is the only means of eliminating illiteracy in any society. Education is conceived as a preparation for life, is a productive activity and an investment in human resource. A progressive activity and welfare state would never ignore the indisputable need for socialization of its citizens, of which only education can offer. Isife and Ogakwe (2012) affirm that the importance of education in the national development cannot be over emphasized because it is a powerful tool or weapon that can be used to eradicate ignorance, poverty, and diseases to produce individual that can function effectively in the

society. Also Onwuka (2012) pointed out that education is the instrument that is used to free people from incapacitation and exclusion by influencing positive change in the behaviour of people which aim at making people to be more useful to themselves and the society at large. In the context of this study, education is therefore considered to be an important component of economic, social and human capital development that contributes significantly to human capabilities. It is a vital nation building ingredient required to achieve the visions and dreams of any nation. Without the spread of education, the dream of social economic development of the country can never be realized (Abdul, Muhammad & Faiza, (2004).

In every educational system of any country emphasis among others is laid on Secondary Education because of its transitory role to higher education (Universities, College of Education, Polytechnics others.) where labour force of the given economy are trained towards specialization. According to Abdul *et al.* (2004), Secondary education is an important sub-sector of the entire education system. It varies from one country to another. It is the schooling designed for students within the ages of 12 – 16 years. Secondary education is a stage of education that is dominated by students of adolescence age, the most crucial stage in one's personality development. It comes at a time when a child is in most impressionable and formative years. At this time the future of male and female are begin to appear and require full encouragement and help in development. The child becomes more aware of himself or herself, defines personal goal and makes their choice of like career.

Educational attainment at this level of education is very crucial to every economy. Thus failure of education at this stage will reflect negative impact in the economy and will definitely hamper the development of the nation. Nakpodia (2010) observed that a common feature among developed nations is higher attainment in education than the developing nations. For instance Egwunyenga and Nwadiani (2004) reported that Britain had 98% educational attainment United State of America 89% while Nigeria and Sudan has 59% and 33% respectively, in line with World Bank development indicators. In view of this report, a positive relationship between educational attainment of a country and her development is deduced. This informed the reasons Federal Government of Nigeria is seen to have priority attention to supply of Education in the first two level of education (Primary and Secondary).

Recently, it has being observed that due to Nigeria need for development in science, technology and industrialization, more emphasis have being given to science subjects and science students at secondary school level since it is the preparing ground (Stage) for science related careers at higher education. Secondary school science students according to 9 – 3 – 4 system of education refer to those students at senior secondary schools (starting from SSI – SSIII) who are offering science subjects with the intentions of graduating in secondary school as science students or furthering their career in science related field at higher level of education. Such set of students take such subjects like Biology, Chemistry, Physics and science subjects at their secondary school (National Policy on Education (2013). At this level of education students that offered science subjects are the only one that will further in Sciences, Engineering and Technical courses in the Universities, Colleges of

Education and Polytechnics. Senior secondary school is therefore an important phase for the nation's science education and technological development of Nigeria, for her industrial and all-round development. Thus opposed to these goals of development through education across nations is school science students' dropout.

Dropping out of school is a phenomenon common in educational system of countries as depicted in different studies such as Burkina Faso in 2003 and Niger (UNESCO, 2005). In Zimbabwe (Mawere, 2012); in Nigeria (UNICEF/FGN, 2012). In Bridgeland, Dilulio and Morison (2006) reported that the decision to drop out of school was referred to an open letter and the American people as a very dangerous one for the students as dropouts are much more likely than their peers who graduate to be unemployed, living in poverty, receiving public assistance in prison, unhealthy, divorced and single parents with children who drop out from school themselves. If America as developed country is in danger because of dropout, Nigeria as a developing nation should be more concerned of the impending dangers.

School dropouts include those whose schooling start late as a result of over age admission and those whose progression is delayed by repetition (Lewin & Little, 2011). Chivore cited in Maware (2012) defines dropout as pupils or students who ceases to attend school either temporary or permanently before completing the given educational cycle. Furthermore, Opia (2015) observed ugly trend in Nigeria Education that "A common feature in Nigeria educational is the issue of dropout". Dropout means one who withdraws or quits from school or given social group. According to Hornby (2008), school dropout means a person who leaves school or college before the period required to complete studies. In the context of this study, dropout referred to students who enrolled in schools but did not push through completion or graduation alongside with their counterparts. Hence school dropout rate simply means how often the students leave or stop attending to school for any reason. Either to engage in buying and selling while girls and boys may migrate in urban centers in search of greener pasture or other endeavors to make living. In other words, secondary school students who enrolled to study science subjects but withdrew without completing the planned secondary school curriculum either by diverting to social science, vocational studies or dropping from school entirely in this context is regarded as secondary school science dropout. Rate of dropout among secondary school science students therefore mean or refers to how often secondary school students who enrolled to do sciences in secondary school either drop science for other courses or withdraw from school entirely.

The rate at which science secondary school students dropout from schools calls for pro-activeness, if Nigeria must achieve her dreams of technological advancement. Determination of secondary school science students' dropout rate is important as it will help the government to know her fate and ascertain if the government is making a head-way in her ambition to develop in science and technology which is ruling the world in this recent era. Besides, to identify the factors or causes that influence school dropout among secondary school science students for better result. Sabates, Akyeampong, Westbaok and Hunt (2010) identified that there is no one single cause of school dropout. Dropout is more of a process rather than the

result of one single event, and therefore has more than one close causes (Hunt, 2008). Some of the causes of the dropout in among secondary school students to include, Parents socio-economic status, attitude of teachers to student, culture of the people, religious beliefs, distance of the school from students, early marriage, domestic work, parents literacy level, school infrastructure and teachers motivation (Erulkar & Matheka, 2007). Speculation has it that some of these factors mentioned above may also influence dropout among science students and the rate of dropout of secondary school science students.

However, according to the review of literature, the causes of school dropout among secondary school science students has not been empirically confirmed. Thus, indications are strong that good number of students who enrolled in science subjects in secondary schools withdraw along the line or divert to other line of courses for some reasons. In Nigeria, specifically in FCT located at the North Central Geopolitical Zone, there is no accessible record of national or state concerns of science secondary school dropouts in terms of empirical facts and figures on causes, rate and effect of dropout among Secondary School Science students.

Statement of the Problem

Recently, given the need for industrial and technological development need of Nigeria as a nation, more emphasis has been paid to science education at the basic and secondary school levels, with the believe that students who did well in secondary schools will proceed to higher education to receive more training in order to meet the science and technological needs of Nigeria. The target to meet the nation's demand of people with science and technological skills triggered proactive actions by the Federal and State government towards achieving the common goal. In Federal Capital Territory (FCT), despite all the efforts made towards the development of science education at secondary school level in such a strategic located area which earned her population from all parts of Nigeria, it is disheartening to observe that good number of students who enrolled as science students at the senior secondary school level withdraw along the line.

Various opinions have be given as regards to the causes or factors responsible for the ugly development in FCT. However, literature available to the researchers seem to have no record of study on the empirical data on the rate at which senior science secondary school students, dropout from schools. In view of the dearth of research studies in this area the researchers were poised to carry out this empirical study on the rate of dropout among senior secondary school science students with focus on Federal Capital Territory, Abuja.

Purpose of the Study

The main purpose of the study was to determine the rate of dropout among secondary school science students in Federal Capital Territory, Abuja. Specifically, this study was designed to:

1. Assess the rate of school dropout of senior science secondary school students in Federal Capital Territory, Abuja from 2011 – 2016.

2. Assess the rate of dropout of senior secondary school male science students in Federal Capital Territory, Abuja from 2011 – 2016.
3. Assess the rate of dropout of senior secondary school female science students in Federal Capital Territory, Abuja from 2011 – 2016.

Research Questions

The following research questions guided the study:

1. What is the rate of school dropout of senior secondary school science students in Federal Capital Territory, Abuja from 2011 – 2016?
2. What is the rate of school dropout of male senior science secondary school students in Federal Capital Territory, Abuja from 2011 – 2016?
3. What is the rate of school dropout of female senior science secondary school students in Federal Capital Territory, Abuja from 2011 – 2016?

Hypotheses

The two null hypotheses were tested at 0.05 level of significance

Ho₁: There is no significant difference in the rate of school dropout among senior secondary school science students in Federal Capital Territory, Abuja from 2011 – 2016.

Ho₂: There is no significance difference in the rate of school dropout of male and female senior secondary school science students in Federal Capital Territory, Abuja from 2011- 2016.

Methods

The study adopted descriptive survey design. The population of the study comprised of all the public senior science secondary schools in F.C.T, Abuja. The sample size for the study was 3516 public senior science secondary schools students drawn across the Federal Capital Territory, Abuja using multistage sampling procedure.

At first stage, the researchers adopted purposive sampling techniques to select public senior science secondary schools in Federal Capital Territory, Abuja.

At the second stage, the researchers adopted simple random sampling techniques to draw five public senior science secondary schools from Federal Capital Territory, Abuja whose entire science students formed the sample of this study. The sampling techniques was deemed appropriate for this study because the researchers tend to ensure manageability of data.

An instrument titled Science Students Enrolment and Dropout Inventory Form (SSEDIF) was developed by the researchers for data collection. The form was made up of two parts: part A, sought for the name of the school and location (urban or rural). While Part B is made of columns and rows which sought for the numbers of enrolment of students by gender as well as numbers of dropout per school across the five years of interest. The instrument was face validated by five experts: two in Educational Administration and Planning, two in Science Education and a statistician, all from University of Abuja. These experts were requested to look at the instrument

in terms of suitability of design of the instrument in line with the purpose of the study, the research questions and null hypotheses. The useful suggestions, made by validates were adhered to, in the construction of the final instrument (SSEDIF). The instrument were personally taken to the vice principal Administration of the sampled public senior science secondary schools by the researchers and five research assistants to help sought for data as indicated by the Science Student Enrolment and Dropout Inventory Form (SSEDIF). The researchers requested the vice principal Administration to help them with science class registers and withdrawal registers for science students from 2011 to 2016 to enable them to fill the number of science students enrolled and number that withdrew from each sampled school from which the inventory form were filled. The data collected were analysed using percentage, t-test and Analysis of variance (ANOVA) at 0.05 level of significance. All computations were carried out using Statistical Package for Social Science (SPSS) to ensure accuracy of the results. To answer the research questions, the result was interpreted in line with the guide line provided by Yao et el (2013), that for developing nations, dropout rate below 40% indicates low dropout rate; dropout rate of 40% to 45% indicates high dropout rate and above 45% indicates very high dropout rate.

Results:

Research Question One

What is the rate of dropout among senior secondary school science students in Federal Capital Territory, Abuja from 2011 – 2016?

Table 1: Dropout Rate Of Senior Secondary School Science Students in Federal Capital Territory, Abuja from 2011 – 2016.

S/N	Academic session	No.of students enrolled Into science	No.of science students that graduated annual	Total No.of Secondary school science dropout annual	Dropout rate (%)
1	2011/2012	631	343	288	45.6
2	2012/2013	691	384	307	44.4
3	2013/2014	721	401	320	44.3
4	2014/2015	724	407	317	43.7
5	2015/2016	749	454	295	39.3
Total		3516	1989	1527	43.4

The summary of the result presented in Table 1 revealed that the rate of dropout of senior secondary school science students in Federal Capital Territory, Abuja from 2011-2016, were as follow: 2011/2012 (45.6%), 2012/2013 (44.4%),

2013/2014(44.3%), 2014/2015 (43.7%), 2015/2016 (39.3%) with average percentage of 43.7%. The Table shows high dropout rate of senior secondary school science students in FCT. Also the table indicated decreasing rate of senior science secondary school dropout from 2011-2016 respectively.

Research question Two

What is the rate of dropout of senior secondary school male science students in Federal Capital Territory, Abuja from 2011 – 2016?

Table 2: Dropout Rate of Secondary School Male Science Students in Federal Capital Territory, Abuja From 2011– 2016.

S/N	Academic session	No. of male students enrolled Into science	No. of male science students that graduated annual	Total No. of male Secondary school science dropout per annual	Dropout rate of male science students (%)
1	2011/2012	320	173	147	45.9
2	2012/2013	350	181	169	48.2
3	2013/2014	351	172	179	48.4
4	2014/2015	367	201	166	45.2
5	2015/2016	377	228	149	39.5
Total		1765	955	810	45.4

The analysis presented in Table 2 above shows the rate of dropout of senior secondary school male science students in Federal Capital Territory, Abuja from 2011-2016. 2011/2012 academic session had 45.9%, 2012/2013 academic session had 48.2%, 2013/ 2014 academic session had 48.4%. While 2014/2015 and 2015/2016 academic sessions had male secondary school science student dropout rate of 45.2% and 39.5% respectively. Thus the result of the data analysis indicated very high rate of male science student dropout among senior secondary schools in Federal Capital Territory, Abuja. The result of the analysis further indicated that the rate of dropout of senior secondary school male science students was highest in 2013/2014 academic session with 48.4% and least in 2011/2012 with 39.5%.

Research Question three

What is the rate of dropout of senior secondary school female science students in Federal Capital Territory, Abuja from 2011– 2016?

Table 3: Dropout Rate of Senior Secondary School Female Science Students in Federal Capital Territory, Abuja from 2011–2016.

S/N	Academic session	No. of female students enrolled Into science	No. of female science students that graduated annual	Total No. of Secondary school female science dropout per annual	Rate of dropout of female science students (%)
1	2011/2012	311	170	141	45.3
2	2012/2013	341	203	138	40.5
3	2013/2014	370	229	141	40.1
4	2014/2015	357	206	151	42.2
5	2015/2016	372	226	146	39.2
Total		1751	1034	717	40.9 %

The result presented in Table 3 shows the dropout rate of senior secondary school female science students from 2011-2016 as follow: 2011/2012 academic session had 45.3%, 2012/2013 academic session had 40.5%, 2013/ 2014 academic session had 40.1%. While 2014/2015 and 2015/ 2016 academic sessions had female secondary school science student dropout rate of 42.2% and 39.2% respectively. Thus the result of the analysis indicated high rate of dropout among senior secondary schools female science student in Federal Capital Territory, Abuja of FCT.

Result of the data analysis presented in the Table 3 above further indicated that the rate of dropout of secondary school female science students was highest in 2011/2012 academic session with 45.3%, and least in 2015/2016 academic session with 39.2%.

Hypothesis One

There is no significant difference in the rate of school dropout among secondary school science students on the sampled senior secondary school in Federal Capital Territory, Abuja from 2011 - 2016 at 0.05 level of significance.

Table 4: Summary of one-way Analysis of Variance of the rate of school dropout among secondary school science students on the sampled senior secondary school in Federal Capital Territory, Abuja

	Sum of Squares	df	Mean Squares	F	Sig.
Between groups	194.560	4	48.640	1.001	.430
Within groups	972.000	20	48.640		
Total	1166.560	24			

Table 4 revealed that there is no significant difference in the rate of school dropout among secondary school science students in Federal Capital Territory, Abuja. This is shown by the calculated F value of 1.001 with an associated probability level

of 0.430 which is higher than the set probability level of 0.05. Consequently the null hypothesis was accepted. This suggested that the observed differences in the dropout rate of senior secondary school science students among the secondary schools F.C.T were due to chance.

Hypothesis Two

Ho₂. There is no significance difference in the rate of school dropout of secondary school male and female science students in Fedral Capital Territory, Abuja from 2011- 2016 at 0.05 level of significance.

Table 5: Summary of t-test on The Rate of Dropout of Senior Secondary School Male And Female Science Students in Federal Capital Territory, Abuja From 2011- 2016 At 0.05 Level of Significant.

Gender	Numbers	Mean	SD	df	t	Sig	Discision
Male	25	30.44	6.00	48	-222	0.684	Not sig.
Female	25	30.80	5.44				

The Table 5 above showed the result of senior secondary school dropout of male and female science students in Federal Capital Territory, Abuja. From the Table, the t- value obtained is -222, with an associated probability value of 0.68 which was higher than the alpha value (0.05). Hence, the null hypothesis was accepted that there is no significant difference in the rate of school dropout among senior secondary school science students in Federal Capital Territory, Abuja from 2011 - 2016 at 0.05 level of significance.

Discussion

The result of the study revealed that the rate of dropout among senior secondary school science students is high, though decreasing slowly. The reduction in the dropout of secondary school science students in Federal Capital Territory, Abuja may be as a result of the recent government policy and proactive measures to encourage the study of science and technology at the secondary school level across the nation.

It was revealed that the rate of dropout of senior secondary school male science students in Federal Capital Territory, Abuja is very high with average rate of 45.4%. Thus, the study revealed that the dropout rate of male science students increased from 2011/2012 to 2013/2014 academic session and decreased from 2014/2015 – 2015/2016 academic session. The reasons for high rate of dropout of senior secondary school male science students as revealed by literature review include: pressure of high senses of responsibility of the male child in Nigeria, high rate of unemployment and age in line with findings of Christian (2015).

The study revealed that the dropout rate of senior secondary school female science students in Federal Capital Territory, Abuja is still high with average dropout rate of 40.9%. Though, dropout rate of the female students appreciably decrease from 2011-2016. This is an indication that the recent government encouragement for

science and technology studies at the secondary is positive among the female science students since their rate of dropout is decreasing.

It was found that the dropout rate of male science students is higher than their female counterparts. Table 6 (summary of t-test), revealed that there was no statistical significant difference between the dropout rate of male and female senior secondary school students at 0.05 level of significant. This implies that male science students drop out of school more than their female counterpart. This finding is line with the findings of Osakwe and Osagie (2010), that “The rate of dropouts is higher among male students than female students in Delta State.” and Christian (2015), that gender is a factor in the dropout rate of secondary school students. This maybe be as a result of high sense of responsibility associated with age on the part of the male students coupled with high rate of unemployment in Nigeria. Hence the fear of being or suffering unemployment after years of education discourages some male science students from furthering education.

Conclusion

The extent at which the Nigeria government achieves the rate of advancement in science and technology depends to a large extent on the rate of successful and effective completion of her science students at the secondary school level which is the prerequisite for specialization of students in science and technological. As stated in the Federal Republic of Nigeria (FRN), 2004) National Policy on Education, that science education should:

- *Equip students to live effectively in our modern age of science and technology.*
- *Produce scientist for national development.*
- *Service studies in technology and cause technological development*
- *Provide knowledge and understanding of the complexity of the physical world.*

The above mentioned goals of science education can only be achieved through effective science education, but opposed to the achievement of the above stated objective is high rate of dropout among secondary school science students as it is in the case of Federal Capital Territory, Abuja.

Recommendations

Based on the findings of this study, it was recommended that the government should be more proactive in their efforts to improve science education at the secondary school level thus:

1. Government should be more proactive in her efforts to reduce the rate of dropout of senior secondary school science students in F.C.T, Abuja.
2. Government through her agency for science education should plan and introduce incentive measures that will help to retain, sustain and encourage senior secondary school science students, mostly the male science students

towards successful completion of their programme. Such incentive may include scholarship, science grants and attractive graduation package.

3. Government should create more job opportunities and enabling environments for graduates to be self-employed.

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