

ANALYSIS OF EDUCATIONAL WASTAGE IN PUBLIC SECONDARY SCHOOLS IN OLORUNDA LOCAL GOVERNMENT AREA, OSUN STATE, NIGERIA

A. OLATOUN AKINSOLU

ABSTRACT

Educational wastage is like a canker worm that has eaten deep into the fabric of our educational system. Over the years, educational planners, school administrators and educational agencies are concerned about how to reduce this state of educational system inefficiency. This paper investigates wastage rate in some selected public secondary schools vis a viz its causes and its implications on educational planning in Nigeria with particular reference to Olorunda LGA of Osun state. Two schools were purposively sampled using rural and urban dichotomy while stratified random sampling was used to select teachers and pupils of the two sampled schools. Data for the study were collected through the use of a questionnaire titled “Wastage Rate in Public Secondary School Questionnaire (WRPSSQ)” and was administered to the teachers and the students of the two sampled schools. Findings from the study revealed that repetition was the major source of wastage in the two sampled secondary schools. The implications of this study on educational planning were made vide conclusion and recommendations in order to avert the alarming rate of wastage within the educational system. This will ascertain that the expectations of all stakeholders in turning out graduates with minimal wastage in the school system is achieved and will enable students spend only the minimum number of years expected of them for secondary education.

INTRODUCTION

Education globally has been given adequate attention with many countries contributing much investment to promote the awareness of political and socio-economic development of individuals and the nation as a whole. The expectation of all concerned is that students within any school setting should stay for the minimum number of years expected for that level of education within the school system.

Nigeria educational system is financed from both tax money collectable and allocation from the Federal Government revenue, although each tier of government has power over specific areas of taxing fields. The federal, state and local government, out of the revenue generated, allocated some amounts to education for sustainability. Education is viewed as a good investment for national development. Hence, between 7.6 % and 9.9 % of annual expenditure is devoted to education by Nigeria government.

Secondary education is meant for children between the ages of 11 and 16 years. This level of education started in Nigeria as far back as 1859 with the founding of Church Missionary Society (C.M.S.) Grammar School in Lagos and later with the establishment of secondary schools in other parts of the country including Abeokuta, Calabar, Ibadan, Ijebu-Ode, and Ondo (Taiwo, 1983). Secondary education is the second tier of Nigerian educational system. The measurement of its performance must be viewed in terms of its stated objectives in the National Policy on Education. While the broad aims of secondary education are: preparing for useful living within the society and, preparation for higher education (National Policy on Education (NPE), 2013 revised), the objectives are:

1. To provide an increasing number of primary school pupils with an opportunity for education of a higher quality irrespective of sex or social, religious and ethnic background
2. To diversify its curriculum to cater for the differences in talents, opportunities and roles possessed by or open to students after their secondary course;
3. To equip students to live effectively in our modern age of science and technology;
4. To develop and project Nigerian culture, arts and languages as well as the world's cultural heritage;

5. To raise a generation of people which can think for themselves, respect the view and feelings of others, respect the dignity of labor and appreciate those values specified under our broad national aim and live as good citizens;
6. To foster Nigerian unity with an emphasis on the common ties that unite her in diversity;
7. To inspire students with a desire for achievement and self-improvement both at school and later in life (NPE, 2013).

Recent happenings in our secondary schools in Nigeria reveal that there are some elements of inefficiency in the school system as there is a gap between the expectancy and the actual output. Inefficiency of an educational system constitutes a sort of waste to the system (Nwankwo, 1981). The act by which a student repeats a class and spends seven (7) years instead of the six (6) student-year, implies an additional cost to the government and other duty bearers. Apart from this, the most devastating of all is for those students that completed the secondary schooling but failed to gain admission into the tertiary level. Some students drop out of the system before completion year. All these are termed as wastages within the system.

The poor quality and inefficient conditions of our secondary schools were affirmed by Yusuf and Sofoluwe (2014), and Obemeata (1995), as they all agreed that only a small proportion of secondary school products are qualified to enter the university in Nigeria. Also, Adeoye (1983) lamented on the outcry by parents and media over the decline in standards of operation of our educational system leading to the poor quality of student performance in West African Examination Council (WAEC) and National Examination Council (NECO), and Senior Secondary Certificate Examinations (SSCE). What follow are their subsequent inability to secure gainful employment and admission into tertiary institutions at the completion of secondary schooling despite huge amount of resources invested into the educational system. Therefore, the purpose of this study to examine and analyze educational wastage in public secondary schools with particular reference to Olorunda Local Government Area (LGA) of Osun state, Nigeria.

REVIEW OF RELATED LITERATURES

Educational wastage implies the inefficient use of educational resources. Some of the noticeable signs of wastages include dropouts, repeaters, premature withdrawals, misguided types of education, non-employment of school leavers and even brain drain (Durosaro, 2012). According to Babalola, (2014), the term ‘wastage’ applied to education as an unfamiliar ring, and educationists may object to it as a depersonalizing of what is essentially an individual growth process. It comes from the language of economists and seems to liken education to industry, with capital invested in plant, and raw materials being processed into finished products.

Repetition and dropout rates are the commonly used parameters to measure educational wastage (Deribe, Endale, & Ashebir, 2015; Longe & Durosaro, 1986). According to then repeating a grade means utilizing more resources than allocated to a student and hindering the intake capacity of schools. Similarly, leaving a school (dropping) before completing a particular cycle/level of education is wastage in resources.

According to them, wastage in education indicates inefficiency of the educational system since an educational system is efficient when such system tries to reduce wastage to the barest minimum. Adigwe (1997), in his report on wastage, lamented that the poor conditions of secondary schools, such as poor teaching, poor motivation of teachers, lack of facilities and equipment have culminated into inefficiency in the system with students dropping out and repeating classes.

Akolo (1998) on the alarming rate of student failure in our secondary schools stressed that the root cause of failure in secondary schools stemmed from inadequately trained teachers and lack of needed instructional materials. This consequently contributed to the apparent poor students’ academic performance and reduction of graduation rates in public secondary schools in Nigeria. The above scenario confirms Eguridu’s position (2015) on the need to re-assess the mode of conduct of the Senior Secondary Certificate Examinations (SSCE) in Nigeria so as to reduce wastage and improve the quality of the certificates and thereby promoting the efficiency of secondary education. This

corroborates Durosaro's (1985) opinion that the concept of efficiency in education generally, refers to the capacity of the educational system to turn out graduates with minimal wastage. It also agrees with that production efficiency of all educational investment can be measured by students' academic performance.

There are three broad categories of efficiency; we have the social efficiency, production efficiency and educational efficiency in education. Social efficiency primarily relates to the goals of the society to promote education. Production efficiency deals with utilization of resources in education. It is mainly concerned with how resources are combined to achieve stated objectives. Hanushek (2013) explains further that educational efficiency or internal efficiency is usually seen or measured in terms of pupil academic achievement, i.e. learning outcome.

A recent survey, situation policy analysis of basic education (UNICEF, 2011), reveals that the retention rate is lower in primary classes than in the upper classes while the drop-out rate is higher in the upper classes probably because the students are more matured and are in their adolescence, a period of storm and stress. The survey also reveals that wastage rate in Nigeria Basic Education system is about 17% between 2009 and 2010 on average. It is discovered that about 46.6% of the pupils who withdraws from the system are girls. In the same vein, data available on retardation and attrition rate in our secondary schools indicate that most secondary school students do not complete the six years program while the percentage of successful completers is very low in terms of meeting the requirement for transition into tertiary institutions and the world of work as secondary school certificate holders. In the same vein, Oyetakin (2011) opined that wastage in the education system is improved when more education outputs are produced using given education resources or fewer education resources. He further stressed that wastage or leakage in the system are draining the limited financial and material resources that go into the system as inputs for transformation process.

Yusuf and Sofoluwe (2014), in their study on wastage analysis in Ekiti state secondary schools in Nigeria, reported that admittance into senior secondary schools should be modified to enable the school to admit good and intelligent students who can cope with the secondary school activities so as to reduce and minimize repetition and drop-out rates which are indices of high wastage rate in the school system.

There are several causes of educational wastage. According to Akinsolu (2005), Matage, Kyalo and Shandrack (2015), the following are identified as major causes of wastage in education system

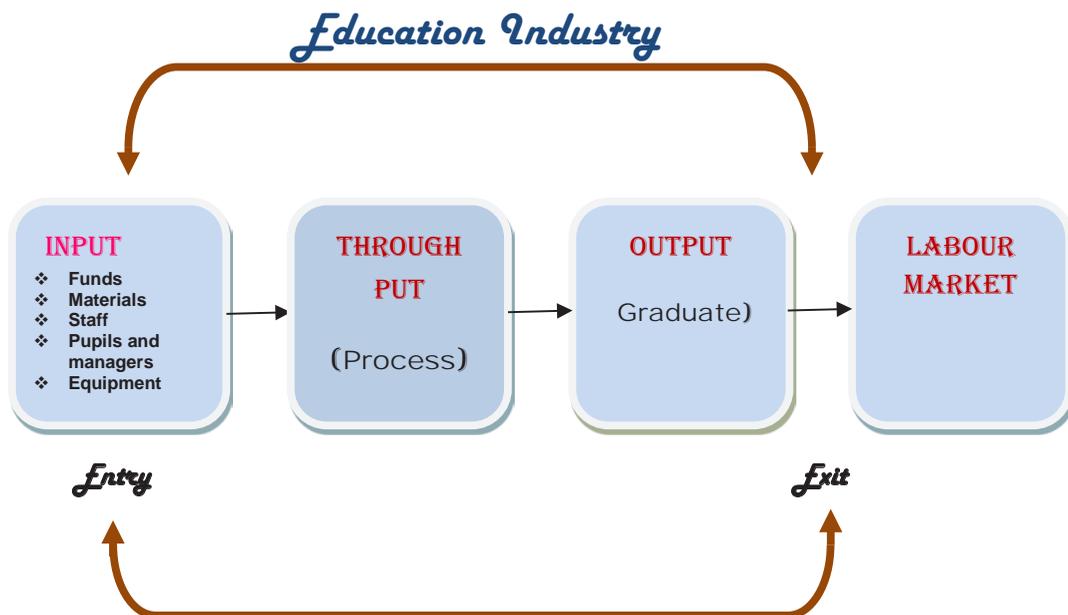
- The nature, ability and capability of students
- The nature of the schools
- The nature of the educational systems
- The socio- economic status of parents
- The resources available to education (merely teachers, equipment, etc.)
- The socio- physical environment

All these can be categorized under the following factors:

- School Factors
- Economic Factors
- Cultural factors
- Social factors

THEORETICAL FRAMEWORK: EDUCATION PRODUCTION FUNCTION

The study is guided by the theory of education production function. Many scholars shared this view; such as Ezekwesili (2006), Donald Winkler and Lars Sondergaard (2008), Agboola and Adeyemi (2012) and Durosaro (2012). The concept of wastage in educational services within the context of this paper is stemmed from the fact that education is a product. The educational production function includes inputs, the process and the output. Therefore any realistic discussion on educational wastage must be viewed from production function perspectives as illustrated in the schematic diagram below:



Source: Ezekwesill (2006), *The Nigerian Educational System should simulate a manufacturing model.*

Secondary school system, like any other system receives inputs (raw materials) from its environment, converts or processes it and afterwards, discharges the output (products) to the environment from where the inputs are obtained. Educational production function is a mathematical construct that mainstreams economists and educational researchers in understudying education investments. It relates some measure of education output such as student achievement to the various inputs and the processes used in education.

In addition, Adepoju (2000) described the production function in education as the maximum level of outcome, possible from alternative combinations of inputs. He stressed further that school system consists of four major components: the inputs are pupils, teachers, facilities and funding; the procedure throughput is the processing stage; the student achievement is the output of schooling; the evaluation is the feedback. He further opined that wastage can occur only in three of the four components and these are the inputs, the throughput (process) and the output, while the feedback is the appraisal of the whole process. Oluchukwu (2011) stated that the measurement of efficiency of the school system involves queries on the inputs and outputs from education. The outputs of the educational system are graduated students. He further stressed that the educational efficiency can be measured by cohort analysis of the educational system. This can be achieved by the collection of the school's history of the group of students based on specific years traced through the educational cycle.

The above implies that any lapses in any of the aforementioned factors constitute wastage within any educational system. Education wastage is a crisis facing Nigeria secondary schools and even the rest of African countries. In his study on Wastage Rates in Kenyan Secondary Schools: A Case of Kathonzwani District, Makueni County (2005 – 2007 Cohorts), Mumina (2013) affirmed that educational wastage is a cankerworm in the education sector in Kenya which requires affirmative action from all stakeholders towards the development of mitigation strategies. Likewise, Gbadamosi (2014) reported on the alarming rate of attrition in Nigerian secondary schools which call the major attention of all key stakeholders especially the educational planners. This confirms educational

wastage as part of the political, socio-economic and educational problems which many countries in the world have been grappling with as the output from the system seems not to justify the inputs.

Educational wastage ((Akinsolu, 2005) can be defined mathematically (algebraically) as follows:

$$(\text{Wastage}) W_g^t = \frac{E_g^t - P^{t+1}}{E_g^t} \times 100$$

Where

W_g^t refers to Wastage Rate in the year t (a particular year and in a particular class g)

E_g^t refers to enrolment in year t and for class g while

P^{t+1} refers to the number of students promoted to the next class g in the following year t .

Example: Computation of Wastage rate in Class 2 for 2010/2011 with enrolment of 450 students.

(Enrollment in Class 2 for 2010/2011) 450 - 380 (Students promoted to the next class for 2011/2012)

$$\frac{450 - 380}{450} \times 100 = 15\% \quad \Rightarrow \quad (\text{Repeaters and Dropouts})$$

Wastage rate = 15%

THE PROBLEM

Most nations in the world regard education as a form of social and private investment. Therefore all stakeholders of secondary education have invested in the system with the hope that all the inputs injected will ensure effective teaching and learning for quality assurance.

Quality assurance is the act of audit, reviewing the instructional program in an educational setting and getting convinced after critical examination/observations that what is expected has been done (Akinsolu, 2014). The present state of quality of education in most of Nigerian secondary schools has much to be expected. Many of the secondary schools' graduate outputs exhibit low quality education while the prevalence rate of students repeating and dropping out of the system calls for urgent attention.

Based on the aforementioned, this study is designed to investigate educational wastage in public secondary schools in Olorunda Local Government Area (LGA) of Osun state, Nigeria. The objectives of the study are:

- 1) To investigate the major sources of educational wastage in the selected sampled schools.
- 2) To investigate the proportion of wastage that could be accounted for viz-a-vis repetition, dropout and failure of students during the period of study.
- 3) To examine if there is any disparity between wastage rates of the two schools in this study.
- 4) To identify the major factor that could be attributed to the wastage indicators viz-a-vis, dropout, repetition and failures in the sampled schools

SIGNIFICANCE OF THE STUDY

The significance of this study lies greatly in the strategic position occupied by education globally and the need to clarify the currently assailing problem in Nigeria. The gap between the expected school quality and the actual quality of output is large. The study also focuses on the need for continuous appraisal to guide educational planners and managers on the necessary actions needed to ensure that the school turns out its output with minimal wastage.

Secondly, this study will assist in identifying the efficiency level of secondary school system with particular reference to Osun State, Nigeria.

RESEARCH QUESTIONS

The following questions will guide the conduct of this study;

- 1) What are the major sources of educational wastage in the sampled schools as perceived by both the teachers and the students?
- 2) What proportion of wastage could be accounted for through cohort analysis with respect to Repetition (R), Dropout (D) and Failure (F) of the sampled schools (A & B) during the period under study?
- 3) What is the Cumulative Average Percentage wastage rate in the two sampled schools?
- 4) What are the student graduation and fail-out rates in SSCE of the two sampled schools regarding the cohort of students from 2008/2009 to 2013/2014 academic sessions?
- 5) What is the crude-cohort wastage rate and input /output ratio in the two sampled schools?
- 6) Is there any difference between the wastage rates of the two sampled schools?
- 7) What is the major factor that could be attributed to the wastage rate in the sampled secondary schools as perceived by both teachers and students?

SCOPE OF THE STUDY

The study was carried out in two secondary schools in Olorunda Local Government Area (LGA) of Osun State. The two schools fall within the rural and urban area of the LGA respectively. School A is in the urban center of the LGA while school B falls within the rural area of the LGA under study. The two schools are:

- 1) School A: Ansarudeen Grammar School Osogbo - Urban
- 2) School B: Aderounmu Grammar School Oba Oke - Rural

METHODOLOGY

Design

The research design employed in this study was a descriptive survey involving the use of questionnaires and documents. This particular design was used, mainly because of the focus of the study. This corroborates with Nwagwu (1991) on the use of descriptive survey research in studying significant educational problems.

Sample and Sampling Procedure

The population of this study comprises all the secondary schools in Olorunda local Government area of Osun State. Two schools were purposively sampled out of the existing eight schools in the LGA using rural and urban dichotomy. Teachers and students of the two sampled schools were sampled using stratified random sampling procedure.

In school A, out of the sixty-two (62) teachers in the school, twenty-seven (27) teachers were sampled, with thirteen (13) females and fourteen (14) males. This results in a sampled percentage of 43.5%. For the students, the school has student population of seven hundred and fifty (450). One hundred and fifty students (150) were sampled, given us a sampled percentage of 33%.

For school B, out of the existing forty-five (45) teachers in the school, fifteen (15) teachers were sampled given us a sampled percentage of 33%. For students in school B, out of three hundred and

sixty (360) students, one hundred and fifty (150) were sampled, giving us a sampled percentage of 43%.

The Instrument

To secure the needed information, a questionnaire tagged ‘Wastage Rate in Public Secondary School Questionnaire (WRPSSQ) was constructed to seek students’ and teachers’ opinion on factors responsible for student wastage in public secondary schools. The questionnaire was researcher-made and validated by experts in Educational Management. The questionnaire was found reliable using test re-test at a reliability coefficient of 0.76%.

Apart from the questionnaire, a specially designed table was used to obtain information on enrolment of the students, repeaters and dropouts in each of the year observed per classes from 2008/09 - 2013/2014 academic sessions.

In addition the Senior Secondary Certificate Examination (SSCE) results of the two schools for the sessions under study were used. Five credits including English Language and Mathematics served as the criteria for passed candidates because in Nigeria, it is only those that have such results can secure admission into tertiary institutions and at the same time secure gainful employment.

PROCEDURE FOR DATA COLLECTION AND ANALYSIS

The distribution and the collection of the questionnaires were conducted by the researcher. The data obtained from the questionnaire were analyzed using descriptive statistics, namely, percentage and mean. In addition, all information gathered in respect of enrolments, repeaters and dropouts from the two schools was analyzed using the reconstructed cohort- method based on successive year class data on enrolment by the researcher. For decision, in respect of the items for Research Question five (5), the criterion mean was taken to be 55%. Therefore, any item with a mean score of 55% or above was accepted as effective; otherwise it was not accepted.

RESULTS AND DISCUSSION OF FINDINGS

Research Question 1

What are the major sources of educational wastage with respect to repetition, withdrawal and failure in the sampled schools as perceived by both teachers and students?

Table 1: Sources of wastage in the two sampled schools as perceived by both teachers and students

| Sources | School A Responses | | School B Responses | |
|-------------|--------------------|------------|--------------------|------------|
| | Teachers | Students | Teachers | Students |
| Repetition | 18 (66%) | 77 (51%) | 8 (53.3%) | 59 (39.3) |
| Withdrawals | 7 (26%) | 48 (32%) | 3 (20%) | 31 (21%) |
| Dropout | 2 (7.5%) | 25 (16.6%) | 4 (27%) | 60 (40%) |
| Total | 27 (100%) | 150 (100%) | 15 (100%) | 150 (100%) |

Source: Fieldwork. Teachers and Students’ Response in Parenthesis

In Table 1, three sources of wastage were identified in the school system- Repetition, Withdrawals, and Dropout. Repetition within the context of this paper is the number of students who repeat a grade in the succeeding year as a percentage of the original enrolment in the same grade. Withdrawals are number of students who officially left the system based on one reason or the other while Dropout refers to the number of those students unaccounted for after deduction of the number promoted to the next class and the number meant to repeat from the total enrolled in the class.

In the above table, School A ranked repetition as the foremost source of wastage out of the three major sources of wastage identified with 66% and 51% by both teachers and students respectively; while in school B, findings revealed that both the teachers and students also reported repetition as the foremost source of wastage in their school with 53.3% and 39.3%. The findings in Table 1 affirm what Akolo (1998) observed, when he lamented about the alarming rate of student repetition and dropout in the Nigerian secondary schools. He further stressed that the root cause of this wastage in secondary schools is inadequately trained teachers and lack of needed instructional materials which consequently contribute to the apparent poor students' academic performance and thereby reducing graduation rates in public secondary schools in Nigeria. It also corroborates Yusuf and Sofoluwe, (2014) whose study revealed that repetition and dropout rates are indices of high wastage rate in the Nigerian school system.

Research Question 2

What proportion of wastage could be accounted for through cohort analysis with respect to Repetition (R), Dropout (D) and Failure (F) of the sampled schools (A & B) during the period understudy?

In Table 2, the cohort of the students studied in school A revealed that out of the 220 students that were in JSS 1 in 2008/2009 academic session, only 197 were promoted to JSS 2, 15 repeated the class and 8 students could not be accounted for they were therefore assumed to have dropped out for that session. The figure represents 89.5%, 6.8% and 3.6 of the total enrolment respectively. For session 2009/2010 school year, out of 197 enrolled in JSS 2, 118 were promoted, 69 repeated the class while 10 students were assumed to have dropped out of the system. For this session, the following figure represents 60%, 35% and 5% of the total enrolment for JSS II in that academic session.

Table 2: Cohort Flow of students in Ansarudeen Grammar School (School A)

| FLOW | Year 1997/98 | | Year 1998/99 | | Year 1999/2000 | | Year 2000/2001 | | Year 2001/2002 | | Year 2002/2003 | |
|------|-----------------|------|-----------------|-----|-------------------|-----|-------------------|-----|-------------------|-----|-------------------|-----|
| | J.S.S 1 | | J.S.S 2 | | J.S.S 3 | | S.S.S 1 | | S.S.S 1 | | S.S.S 3 | |
| | No | % | No | % | No | % | No | % | No | % | No | % |
| E | 220 | 100 | 197 | 100 | 118 | 100 | 110 | 100 | 97 | 100 | | |
| P | 197 | 89.5 | 118 | 60 | 110 | 93 | 97 | 88 | 90 | 92 | 90 | 100 |
| R | 15 | 7 | 69 | 35 | 5 | 4 | 11 | 10 | 5 | 5 | | |
| D | 8 | 4 | 10 | 5 | 3 | 3 | 2 | 2 | 2 | 3 | | |

Source: Computation from School Records- 2008/2009 – 2013 /2014 academic session in School A

Keys: E- Enrolment P- Promoters R- Repeaters D- Dropouts

In 2010/2011 academic session, out of 118 enrolled in JSS 3, only 110 were promoted, 5 repeated while 3 dropped out. These represents 93%, 4% and 3% of the total enrolled for that session. In 2011/2012 session, we have 110 students enrolled in SS 1. Out of the number enrolled, 97 were

promoted, 11 repeated while 2 dropped out, all these represents 88%, 10% and 2% of the total enrolled for that session.

Likewise in the year 2012/2013, out of the 97 enrolled, 90 were promoted to the final class, 5 repeated with 2 dropped out. This gives us 92%, 5% and 2.6% of the total enrolled respectively. From the students flow in the table above, 220 enrolled in the initial year, only 90 could reach the certificate class for 2013/2014 academic session. In addition, the magnitude of the wastage is more revealed in the 2009/2010 session. Out of 197 enrolled in JSS 2, only 118 students were promoted. The total number of repeaters recorded was 69 and 10 dropped out, making a sum total of 79 as wastage. This represents 36% of the total enrolled for that academic session.

Table 3: Cohort Flow of students in Aderounmu Grammar School (School B)

| FLOW | Year 1997/98 | | Year 1998/99 | | Year 1999/2000 | | Year 2000/2001 | | Year 2001/2002 | | Year 2002/2003 | |
|------|-----------------|-----|-----------------|-----|-------------------|-----|-------------------|-----|-------------------|-----|-------------------|-----|
| | J.S.S 1 | | J.S.S 2 | | J.S.S 3 | | S.S.S 1 | | S.S.S 1 | | S.S.S 3 | |
| | No | % | No | % | No | % | No | % | No | % | No | % |
| E | 150 | 100 | 138 | 100 | 130 | 100 | 80 | 100 | 75 | 100 | | |
| P | 138 | 92 | 130 | 94 | 80 | 62 | 75 | 94 | 71 | 95 | 71 | 100 |
| R | 9 | 6 | 7 | 5 | 48 | 36 | 5 | 37 | 3 | 4 | | |
| D | 3 | 2 | 1 | 1 | 2 | 2 | - | - | 1 | 1 | | |

Source: Computation from School Records- 2008/2009 – 2013 /2014 Academic session in School B

Keys: E- Enrolment P- Promoters R- Repeaters D- Dropouts

Table 3 above reveals that for 2008/2009 session in school B, 150 students enrolled in JSS1, out of which 138 were promoted, 9 students repeated and 3 were assumed to have dropped out from the system. The above figures represents 92%, 6% and 2% of the total enrolled for that academic session, whereas in the 2009/ 2010 session, out of the 138 students enrolled in JSS II, 130 were promoted, 7 repeated the class and 1 student was assumed to have dropped out of the system. All these account for the following percentage respectively 94%, 5% and 1%. In 2010/2011 session, 130 students were enrolled, 80 students were promoted and 48 students repeated the class while 2 students were assumed to have dropped out. This gives us 62%, 36% and 2% of the total enrolled for that session.

For 2011/2012, out of the 121 enrolled in SS 1, 75 were promoted, 45 repeated and 1 dropped out while in 2012/2013 session. Seventy-five students enrolled in SS 2. Seventy-one were promoted to SSS 3; 3 repeated and 1 dropped out. This gives us the following as percentage against the number enrolled, 95%, 4% and 1 % respectively. These indexes indicate that out of 150 students enrolled in JSS1 in school B in the year 2008/2009, only 71 could reach the certificate class for 2013/2014 academic session.

In addition, from the table, the magnitude of the wastage in school B is more in the year 2011/2012 session. Out of the 121 students enrolled in SS1, only 75 students passed with 45 repeaters. One student dropped out of the system. All this makes a total of 46, thus representing 38% of the total enrolled.

Research Question 3

What is the Cumulative Average Percentage of wastage rate in the two sampled schools?

Table 4: Analysis of Cumulative Average Percentage of wastage rate vide the flow of students in the two sampled schools in %

| Schools | Repeaters | Dropouts | Wastage (R+ D) |
|----------------------------|-----------|----------|----------------|
| School A | 12.2% | 3.5% | 15.7% |
| School B | 17.6% | 1.5% | 19% |
| Cumulative Average wastage | 29.8% | 5% | 34.7% |

Source: Computed from Table 2 and 3

From the above table, the proportion of wastage for repetition and dropout is shown. Findings revealed that in school A, the repetition rate is 7%, 35%, 4% , 10% and 5% for the consecutive five years. The summation of these values divided by five (5) gives 12.2% - average value for repeaters in School A. The dropout rate is as follows, 4%, 5%, 3%, 2% and 3%. The summation of these values divided by five (5) gives 3.5% - average value for Dropouts in School A. The sum total of these two average values (R&D) gives the wastage for School A which was 15.7%

For school B, we have the following repetition rates 6%, 5%, 36%, 37% and 4%. The summation of these values divided by five (5) gives 17.6% - average value for repeaters in School B while the dropout rate is as follows 2%, 1%, 2%, and 1%. The summation of these values, divided by four (4) gives 1.5% - average value for dropouts in School B. The sum total of these two average values (R&D) gives the wastage for School B which was 19%.

From these two sets of data analyzed, School B recorded more repeaters than School A while school A recorded more dropouts than school B. A closer look at the table further shows that school B recorded the highest wastage rate of 19% while school A recorded 15.7%.

Overall cumulative average wastage rate for the two schools between 2008/09 to 2013/2014 academic session for this cohort was 34.7% out of which 29.8% were repeaters and 5% were dropouts. Table 4 finding corroborates Obemeata (1995), Gbadamosi (2014) and UNICEF (2011) on the retardation and attrition rate in public secondary schools in Nigeria. They opined that the rate of repetition is very alarming which grossly affects the percentage of successful completers of secondary education in Nigeria.

Research Question 4

What is the student graduation and fail-out rate in (SSCE) in respect of the examined cohort of students from 2008/2009 to 2013/2014 academic sessions in school A and B?

In Table 4, following the two schools cohort analysis, the student graduate output percentage of school A is 48% while that of school B is 68%. The table further shows that 52% of the examined candidates in school A failed the 2013/2014 SSCE exams while 32% failed in School B respectively. Findings from Table 4 revealed that the two schools experience wastage with the percentage of fail out in SSCE. The expectation of stakeholders and duty bearers is to invest in education and get the desired output. This confirms Yusuf and Sofoluwe (2014), Akolo (1998), Adeoye (1983), Akinsolu (2005) and Durosaro (2012) on their outcry of key stakeholders and the media over the decline in standards of

operation of our secondary education system, the poor performance of students in Senior School Certificate Examination (SSCE) and their subsequent inability to secure admission at the completion of their secondary school career despite the huge investment in form of inputs that goes into the secondary education production function. This seems worrisome and calls for serious attention by various stakeholders.

Table 4: Senior School Certificate Examination (SSCE) Result Analysis for 2013/2014 for school A and B

| Year | No. Enrolled at the Final Class for SSCE | No. Passed | % | No. Failed | % |
|----------|--|------------|----|------------|----|
| School A | 90 | 43 | 48 | 47 | 52 |
| School B | 71 | 48 | 68 | 23 | 32 |

Note: Enrolment for the exam excludes the external candidates.

Research Question 5

What is the crude-cohort wastage rate and input/output ratio in the two sampled schools?

Crude-cohort wastage rate (C-CWR) is the percentage of repeaters and drop-outs from the first year to the final year of academic sessions of a given cohort of students. The crude wastage rate of the two sampled schools was computed from the two schools cohort table using the formula below:

$$\text{Equation} = \text{C-CWR} = \frac{Et^1 - Et^6}{Et^1} \times 100$$

where

C-CWR - means Crude-Cohort wastage rate

Et means Enrolment

Et^1 means Enrolment in the initial year (the 1st year of secondary schooling).

Et^6 means Enrolment in the final year (the 6th year of secondary schooling).

School A

$$\begin{aligned} \text{CCWR} &= \frac{220 - 90}{220} \times 100 \\ &= \frac{130}{220} \times 100 = 59\% \end{aligned}$$

$$\text{CCWR} = 59\%$$

(This is the percentage of repeaters and drop-outs from the first year to the final year of academic sessions of a given cohort of students from 2008/2009 to 2013/2014 in school A)

School B

$$\begin{aligned} \text{CWR} &= \frac{150-71}{50} \times 100 \\ &= \frac{79}{150} \times 100 = 52\% \\ \text{CCWR} &= 52\% \end{aligned}$$

School A

$$\begin{aligned} \text{CCWR} &= \frac{220-90}{220} \times 100 \\ &= \frac{130}{220} \times 100 = 59\% \end{aligned}$$

$$\text{CCWR} = 59\%$$

(This is the percentage of repeaters and drop-outs from the first year to the final year of academic sessions of a given cohort of students from 2008/2009 to 2013/2014 in school A)

School B

$$\begin{aligned} \text{CWR} &= \frac{150-71}{50} \times 100 \\ &= \frac{79}{150} \times 100 = 52\% \end{aligned}$$

$$\text{CCWR} = 52\%$$

(This is the percentage of repeaters and drop-outs from the first year to the final year of academic sessions of a given cohort of students from 2008/2009 to 2013/2014 in school B).

From the calculation, the student crude cohort wastage rates in the two schools were 59% and 52% respectively.

The Input /Output Computation: Within the context of this paper, this is a literacy computation for a particular flow set of students based on the assumption that the number of students enrolled (student input) in the initial year should complete the secondary six year cycle. For instance, if 200 students were enrolled in year one, it is expected that all the 200 enrolled students should complete their secondary education.

$$\text{Input/Output Ratio Equation} = \frac{Et^1}{Et^6}$$

Et^1 means- Enrolment in the initial year (the 1st year of secondary schooling).

Et^6 means- Enrolment in the final year (the 6th year of secondary schooling).

School A

Input/Output Ratio =

$$\frac{220}{90} \quad \begin{array}{l} \text{(Input value for year 1)} \\ \text{(Output value at the final year)} \end{array}$$

$$= \frac{2.44}{1}$$

$$= \frac{4.8}{2} \quad \approx \quad \frac{5}{2}$$

$$= 5:2$$

The input / output ratio for student cohort flow in School A is 5:2. The above finding implies that for every five (5) students that got enrolled only 2 completed the secondary education which connotes wastage.

School B

$$\text{Input/Output Ratio} = \frac{150}{71} \quad \begin{array}{l} \text{(Input value for year 1)} \\ \text{(Output value for the final year)} \end{array}$$

$$= \frac{2.1}{1}$$

$$\text{Input/Output ratio} = \frac{2}{1}$$

$$= 2:1$$

The input / output ratio for student cohort flow in School B is 2:1. The above finding implies that for every two (2) students that got enrolled only 1 completed the secondary education which likewise connotes wastage as obtained in school A.

From the calculated input and output ratio of the two sampled schools, school A and school B, the two schools experienced educational wastage.

Research Question 6

Is there any difference between the crude cohort wastage rate and input /output ratio of the two sampled schools?

From the analysis of RQ5, the result indicates that there is a marginal difference in the crude cohort wastage rate of the two sampled schools. While school A is having 59%, school B has 52% giving a difference of 7%. The input output ratio of school A is higher than school B. In school A for every 5 enrolled; only 2 reached the final class while in school B, for every two, one completed the secondary school cycle. With school A having a higher crude cohort wastage rate despite being in the urban centers, the findings agree with Berstecher (1992), Mumina (2013), Adeyemi (2011), and Deibe, et al (2015) on factors that can be attributed to educational wastage in some of the urban secondary schools such as: overcrowded classrooms, poor staffing and high prevalence rate of truancy and juvenile delinquency.

Research Question 7

What are the major factors that could be attributed to educational wastage in the sampled secondary schools as perceived by both students and teachers?

From Table 6, teachers' and students' opinions on factors that are responsible for educational wastage based on the established criterion mean of 55%, five out of the eight proposed items were accepted. These were items 3, 2, 5, 8 and 4 with the following shares 90.5%, 87.5%, 73.5%, 57.6% and 54.5% respectively with an overall mean (X) 'yes' score of 63.1.

The proposed items were generally regarded as factors accounting for wastage. The finding conforms with those of Akolo (1998), Mumina, et al (2013) and Gbadamosi (2014) that the root cause of failure in secondary schools is a fall-out of inadequately trained teachers and non-provision of the needed instructional materials. These consequently contribute to the apparent poor students' academic performance and thereby reducing graduation rates in public secondary schools in Nigeria. It also corroborates Akinsolu (2005) and UNICEF, (2011) on predicting factors that signal student failure as well as propensity of their withdrawal in the schooling process. These are constant failures in school subjects, teachers' poor attitude, inability to pay school fees due to parental socio-economic status and poor school learning environment may cause low academic ability resulting in repetition, failure and drop-out of the school system by students.

The WRPSSQ contained eight (8) items from which teachers' and students' opinions were sought. Table 6 below reveals the result.

Table 6: - Students' and teachers' opinions on factors that could be attributed to educational wastage (School A & B)

| Items | Students' Response | | | | Teachers' Response | | | | Composite Response of Teachers And Students | |
|---|--------------------|----|-----|----|--------------------|----|----|----|---|------|
| | Yes | | No | | Yes | | No | | % | % |
| | No | % | No | % | No | % | No | % | Yes | No |
| 1) School administrative styles has an impact on education wastage | 115 | 58 | 85 | 42 | 15 | 36 | 27 | 64 | 47 | 53 |
| 2) Government policy of credit in Mathematics and English Language account for poor transition of students to tertiary institutions failure in SSCE | 170 | 85 | 30 | 15 | 38 | 90 | 4 | 10 | 87.5 | 12.5 |
| 3) Truancy and absenteeism account majorly for wastages in the school setting | 167 | 83 | 33 | 17 | 41 | 98 | 1 | 2 | 90.5 | 9.5 |
| 4) Peer pressure account for poor performance of public secondary students | 80 | 40 | 120 | 60 | 29 | 69 | 13 | 31 | 54.5 | 45.5 |
| 5) Fear of examination contribute immensely to high wastages in secondary schools | 141 | 71 | 59 | 29 | 32 | 76 | 10 | 24 | 73.5 | 26.5 |
| 6) Socio – economic status of the parents to high wastages in secondary schools | 60 | 30 | 140 | 70 | 25 | 60 | 17 | 40 | 45 | 55 |

| | | | | | | | | | | |
|--|-----|------|----|------|----|------|----|------|------|------|
| 7) Most of the students help their parents in farm work or petty trading with less time for studying | 130 | 65 | 70 | 35 | 18 | 43 | 24 | 57 | 54 | 46 |
| 8) Teachers commitment to work has reduced nowadays | 125 | 62.5 | 75 | 37.5 | 18 | 42.8 | 24 | 57.2 | 57.6 | 42.4 |
| Overall Mean (X) | | 61.8 | | 38.2 | | 64.3 | | 35.7 | 63.1 | 36.9 |

CONCLUSION AND RECOMMENDATIONS

From the findings of this study, educational wastage is evident in the two schools: School A: Ansarudeen Grammar School, Osogbo (Urban) and School B: Aderounmu Grammar School, Oba Oke (Rural). Findings further revealed the following factors: schools, home, students' truancy, repetitions, socio-economic status of parents, and low commitment of teachers are contributing to educational wastage in the school system. In addition, it was observed that schools experienced wastage regardless of their locations because school A in the urban metropolis of Osun State experienced higher wastage rate than school B located in one of the rural areas of the State.

The need to minimize wastage in secondary schools calls for prompt action by all relevant stakeholders in the state since secondary education is compulsory for any child with willingness to gain admission into tertiary institutions. The need to meet all the necessary requirements is essentials before being given admission. Hence, the need to combat wastages in public secondary schools in Osun state and in Nigeria as a nation is essential.

In combating wastage in Nigeria secondary schools, the following recommendations are hereby made;

- Extensive sensitization and awareness programs should be conducted on quarterly basis to enlighten parents on the need to support their children schooling by providing these children with needed materials to aid their active participation and retention in schools.
- Teachers' welfare should be looked into by government. This is to boost their morale and makes them more committed to their job. This will encourage them to put in their best in the profession and thereby improve the teaching and learning process in public secondary schools
- Proper admission policies should be made to ensure that intakes into secondary schools are of the right quality to ease student flow from one grade to another as well as smooth transition to the next level of education with quality outputs.
- Schools' mangers should ensure that discipline is maintained in our secondary schools, since this will assist in combating truancy and peer pressure among our secondary school students thereby minimizing wastage.
- School Based Management Committees (SBMCs), parent unions, women leaders and other related groups need to work towards ensuring that the enabling environments are created for access, retention and completion of education by the students.
- The school counselors should prepare a program to work with students before they sit for both internal and external examinations to allay their fears and phobia for examinations.
- Lastly, all key stakeholders' attention should shift from enrollment to active participation and retention of students in the school system to ascertain quality assurance thus paving way for good academic performance.

REFERENCES

- Adeoye, J. M. (1983). *Trends in cost and productivity of secondary education in Ogbomosho Central Local Government Area of Oyo state*. Unpublished M.ED thesis. University of Ibadan, Ibadan.
- Adepoju, T. L. (2000). Improving educational efficiency in Nigeria: A planners' view. In J. O. Fadipe & E. E. Oluchukwu (Eds.) *Educational planning and administration in Nigeria in the 21st century*. Ibadan: Daily Graphics Nig. Ltd. (p. 98- 102)
- Adigwe, O. A. (1997, July). A report to the 1997 Joint Consultative Committee on Education on 'Exam ethics project', University of Lagos. Lagos.
- Agboola, B. M., & Adeyemi, J. K. (2012). Analysis of private cost of education in a selected Nigerian university. *Journal of Research in National Development*, 3 (10), 45-56
- Akinsolu, A. O. (2005). *Resource utilization and internal efficiency of public secondary schools in Nigeria*. Unpublished PhD thesis submitted to Department of Educational Management, University of Ilorin, Ilorin.
- Akinsolu, A. O. (2014) Result-based management: A sine qua non for total quality assurance of Nigeria's education sector", *African Journal of Educational Management*, 1(16), 162- 171.
- Akolo, F. O. (1998). *Solution to falling standard of education in Nigeria*. Herald, Wed, May 24.
- Babalola, J. O. (2014). *Trends and issues in educational planning*. A paper presented at the Conference of Directors Planning, Research and Statistics (DPRS), National Institute for Educational Planning and Administration (NIEPA), Ondo, Nigeria.
- Berstecher, D. (1992). Wastage in primary education: a comparative look at three developing countries. *Journal of Comparative Education*, 8(20), 75-84.
- Deribe, D. K, Endale, B. D., & Ashebir, B. E. (2015). Factors contributing to educational wastage at primary level: The case of Lanfuro Woreda, Southern Ethiopia. *Global Journal of Human – Social Science: Linguistic & Education*, 15(6), 9-19
- Durosaro, D. O. (1985). *Resource allocations and internal efficiency of secondary education in Bendel state, Nigeria*. Unpublished PhD thesis. Department of Educational Management, University of Ibadan.
- Durosaro, D. O. (2012). *Cost of education: Where the shoe pinches*. (103rd Inaugural) University of Ilorin, UniIlorin Press.
- Eguridu, C. M. (2015, October). *The impact of technology on the validity of assessment in large scale public examinations: The West African Examinations Council's experience*. A paper presented at the International Association for Educational Assessment. 41st Annual Conference. University of Kansas, Lawrence, Kansas, USA.
- Ezekwesili, O. (2006, October). *Educational system should simulate a manufacturing model*. A paper presented at the Education forum. Organised by Federal Ministry of Education. Abuja.
- Gbadamosi, L. (2014, October) *Educational planning in the 21st Century*. A paper presented at the Conference of Directors Planning, Research and Statistics (DPRS) held at National Institute for Educational Planning and Administration (NIEPA), Ondo.
- Hanushek, E. (2013) *Endangering prosperity: A global view of the American school*, Brookings Institution. USA
- Longe, R. S., & Durosaro, D. O. (1986). Analysis of internal efficiency of secondary education in Nigeria: A case study of Bendel State. *African Journal of Educational Management*, 2(1), 107-114.
- Matage, J. M., Kyalo, B. W., & Shandrack, S. S. (2015). Factors influencing educational wastage among girls in secondary schools in Kenya: A case of Kisii Central District. *European Scientific Journal*, 11(16), 398- 405
- Mumina, M. C. (2013). *Wastage rates in Kenyan secondary schools: A Case of Kathonzweni district, Makueni County (2005–2007 Cohorts)*. Retrieved from: URI: <http://ir-library.ku.ac.ke/handle/123456789/7290>
- National Policy on Education. (2013). Federal Government of Nigeria, NERDC, Abuja.

- Nwagwu, W. A. (1991). *U.P.E, issues, problems and its prospects*. Benin: Ethio Publishing Corporation.
- Nwankwo, J. I. (1981). *Educational planning, theory and methods*. Lahore. Karachi: Izharsons printers.
- Obemeata, J. O. (1995). *Education: an unprofitable industry in Nigeria*. Postgraduate School Interdisciplinary Research Discourse, University of Ibadan. Ibadan.
- Oluchukwu, E. E. (2011): School mapping and planning for efficiency in the school system. In J. O. Fadipe & P. K. Ojedele (Eds). *Management of Nigeria Education: Personnel Administration and Quality in Education*. Ondo: NIEPA press. (p. 99-112).
- Oyetakin, A. I. (2011). Cost of education: Determinant of free education and human infrastructure in Nigeria. *Educational Thought, Faculty of Education, Adekunle Ajasin University*, 8(1), 171-185.
- Taiwo, C. O. (1983). The Nigerian education system: Aims, plans and implementation. In S. Adesina, K. Akinyemi & K. Ajayi (Eds). *Nigerian Education: Trends and Issues*. Ile Ife: University of Ife Press Ltd. (pp 67 – 75).
- UNICEF (2011). *Situation analysis of basic education*. (SITAN). UNICEF, Country Office, Nigeria.
- Winkler, D., & Sondergaard, L. (2008) “An Efficiency Framework,” *The efficiency of public education in Uganda*, WorldBank. Washington, DC. Available at <http://www.documents.worldbank.org/curated/en/723581468121508727/uganda>. Assessed August 25th 2016
- Yusuf, M. A., & Sofoluwe, A. O. (2014). Wastage of secondary education in Ekiti South Senatorial District of Ekiti State. *International Journal of Asian Social Science*, 4(12), 1155-1162