

ASSESSMENT OF CAUSES OF STUDENTS' FAILURE IN CHEMISTRY IN WEST AFRICA EXAMINATION COUNCIL (WAEC) IN SURU LOCAL GOVERNMENT AREA OF KEBBI STATE, NIGERIA

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ABSTRACT

The study aimed to investigate some of the causes of failure of students in chemistry in West African Examination Council(WAEC) in senior secondary school in Suru Local Government Area of Kebbi State, Nigeria following the persistence in poor performance of students in the examination. For the purpose of this research work, one hundred and twenty (120) students were selected by random sampling for the study from six senior secondary school in Suru Local Government Area in Kebbi State.. Descriptive inquiry design was used for the study. A questionnaire was designed titled Assessment of causes of failure of students in chemistry in West African Examination Council (WAEC) between 2020 to 2024. Two Research questions and hypothesis guided the investigation. Descriptive statistics employed includes frequency, percentages, mean, and standard deviation. The findings revealed that teacher's poor qualification, poor methods of teaching, lack of teaching experience, and inadequate instructional aids were some of the causes of students failure in chemistry. Therefore, the outcomes of the research work are of added value to the students, teachers Curriculum developer, examination bodies, and educators. It was recommended that government and proprietor of schools should ensured that qualified and competent teachers are employed and provide necessary instructional teaching aids.

Keywords: Assessment, causes, failure, Chemistry, WAEC Examination.

1. INTRODUCTION

Education helps to build the life of every individuals in the environment. Quality education help the students to perform well in the examination (UNESCO,2005). Teaching and learning of science pivot a significant role towards developing a nation and improves the economical, ecological and societal influence (Hofstein, 2011). The role of science education especially chemistry constitutes a part of academic curriculum studied in school with other subjects such as biology, physics and mathematics. Chemistry is a core science which is required by students to be admitted into tertiary institution in Nigeria to study courses such as medicine, pharmacy, biochemistry, microbiology, engineering etc (Osokoya, 2003). Chemistry is vital and recognized wide for the economic and national development (Burmeister,2012). Thus, chemistry is a great subject to many students and society at large (Baja, 1976). Chemistry required effectively teaching to attain high performance of students in the examination. Chemistry students should understand the theoretical part of the subjects and be able to manipulate the practical in the laboratory. Chemistry curriculum acquired during learning process will bring about the development and proper understanding of the subject. However, most chemistry textbooks are written by the foreign authors which makes the language to be complex and ambiguous. Hence difficult for students to comprehend (Ladanu, 1991).

The good performance of students in chemistry is as a result teachers who are equipped with quality method of teaching who will be able to have classroom control and students will concentrate very well (Garba,2004) . Aderoju and Olatunbosun (2008) find out that chemistry has been identified as a vital subject in scientific and national development. Ojo (2001) identified the major causes of failure of students in chemistry are lack of qualified teachers, poor teaching techniques, and lack of instructional aids.

The academic performance of students in West African Examination is a concerned to the parents and government of Nigeria (Ojokwu, 1994). The failure in external examination is a challenge to education sector in Nigeria (Fehintola, 2009). The poor academic performance usually brings about concerned to individual, parents, and every member of the

family. The importance attached to success of students in chemistry in examination and the inability of the students to pass has resulted to examination malpractices, cheating, buying of certificates, and so on (Ojokwu, 1994).

Ajileye (2006) stated that insufficient resources for teaching and learning of such as laboratories, science equipment, teaching aids are identified as a major cause of student poor results in the examination. Onuoha (1997) stated that shortage of qualified and competent teachers to teach both the theory and practical lead to poor understanding of chemistry and this can lead to failure in the subject. Akande (2006) find out that teachers method of teaching, curriculum development in chemistry and inability to construct examination question for the students constitutes the mass failure of the students in the WAEC examination.

WAEC (2013), reported that failure of chemistry students yearly is not encouraging. Every yearly WAEC or NECO reveals the results, there has been wide spread outcry as a consequence of failure in science subjects most especially chemistry (Salami, Mohammad, and Ogunlade, 2012). Njoku (2007) noted that this poor performance may be traced both to students in the secondary school and tertiary institution. Copriady (2014) revealed that poor performance of the students is linked with challenges such as teachers poor qualification, lack of teaching experience are some factors responsible for students failure in chemistry examination.

Table 1. Population, Sample of selected Senior Schools offering WAEC for the Research work

S/N	School Name	Population of Students	Spl.of Students
1.	Government Science College Dakingari	245	20
2.	GovernmentGirls Science college Dakingari	275	20
3.	Government Science College, Suru	205	20
4.	Government Girls Science College, Suru	178	20
5.	Government College, Aljanare	201	20
6.	Solid Foundation Sec. Schools, Dakingari	84	20

Table 2. Chemistry WAEC Results (2020-2024) of Senior Secondary Schools in Suru Local Government Area of Kebbi State.

Years	Number of Candidates	A1 – C6	D7 – E8	F9
2020	1000	410 (41%)	160(16%)	430(35.2%)
2021	980	400 (40.8%)	135(13.8%)	445(45.4%)
2022	860	320(26.9%	110(12.8%)	430(50%)
2023	1020	500 (49%)	140(13.8%)	380(37.5%)
2024	1230	650 (52.8%)	120 (9.8%)	460(37.4%)

1.1 Statement of the problems

The researchers has focused on teacher-related problems in teaching chemistry subject (Usman, 2003). Other causes of failure of chemistry are poor study habit, poor interpersonal relationship between the teacher and the students, motivational orientation, and emotional problems (Aremu and Saka 2003). Nneka and Anaeka (2004) studied the impact of instructional materials, teaching methods, teaching of practical, students' interest, and lack of teaching qualification. It is necessary explore what the students identified as factors contributing to failure at West African Examination Council. This will proffer a better option for to solution to students' failure in chemistry in WAEC.

1.2 Objectives of the Study

The aim of the study is to identify the causes of students failure in chemistry in West African Examination Council (WAEC) in Suru Local Government Area, Kebbi State, Nigeria. The followings are the objectives of this study:

1. To identify the causes of failure of students in Chemistry,
2. To identify methods to enhance the students' academic performance in Chemistry,

1.3 Research Questions

The following research questions were raised to guide the study:

1. What are the identified causes of students' failure in Chemistry?
2. What are the methods to improve students' performance in Chemistry in WAEC?

1.4 Research Hypotheses

H₀: There will be no significant relationship between the identified causes of students' failure in chemistry and the WAEC Examination .

2. METHODOLOGY

The research design adopted in this study was a simple descriptive statistical survey design. Two research questions and one hypothesis guided the study. The targeted populations were all the senior secondary school students in Suru Local Government Area of Kebbi State, Nigeria who offered chemistry at the Senior Secondary School Certificate Examination conducted by West African Examination Council (WAEC). There are six Senior Secondary Schools in Suru Local Government, all considered and twenty (20) students were selected from each secondary schools to sum up one hundred and twenty (120) selected randomly for the study.

For the purpose of the study, a questionnaire tagged 'Investigation of identified Causes of Failure of Students in Chemistry in WAEC'. The instrument contain ten (10) items which the students are expected to rate.

The instrument was divided into two sections. Section A was designed to obtain students bio data, Section B captured information on what the students identified as causes of their failure in chemistry in WAEC. The section produced other information on teacher's years of experience, teacher's use of instructional materials, students' academic performance etc. The instrument was designed using a two-point Like-type scale with Agree, and Disagree.

The questionnaire was administered in the selected schools with the assistance of the chemistry teachers in the schools. They were properly filled and scored. The scoring was done by assigning 4, 3, 2, and 1 points. Academic performance of the students in chemistry was sourced from West African Examination Council results sheet of the selected five schools Suru Local Government, in Kebbi State for the past five years.

The data were analyzed using frequency counts, percentages, mean, and standard deviation. The mean cut of point was 2.80. All items with 2.80 and above was regarded as agreement and accepted while those with less than 2.80 were regarded as disagreement and rejected.

3. RESULTS

The results and findings of the study are presented below:

Research Question 1. What are the identified causes of students' failure in Chemistry?

The frequency, percentage, mean, and standard deviation of students' causes of failure was analyzed. The mean cut-off point was 2.80. All the items with 2.80 and above was regarded as agreement and acceptable while those less than 2.80 was regarded as disagreement and rejected.

Table 3. shows the frequency, percentages of students' causes of the failure. However, 50% was set as the bench mark for agree and disagree. In item 1, 90% of respondents agreed while 10% disagree that teachers' poor educational qualification have effect in their teaching as well as students' performance in chemistry. It was accepted that teachers' educational qualification have effect on the students' performance. Other items with positive acceptance and having effect on the performance of the students are teachers methods of teaching 85% as agree against 15%, teachers use of instructional aids 65% agree against 35% disagree and 95% agree teaching experience as against 5% disagree. Other items are low retention 90%, emotional problem 75%, lack of interest in the subject 65%, and difficult level of the subjects 80%. Finally, two items poor study habits and inadequate to cover the syllabus with 70% and 75% respectively disagree. and were rejected.

Table 3. Students' perspective towards the causes of their failure in chemistry

S/N	Item	Agree %	Disagree %	Mean	SD	Decision
1.	Teachers' poor education qualification	90	10	3.50	0.432	Accepted
2.	Teachers' poor method of teaching	85	15	3.40	0.561	Accepted
3.	Teachers' failure to use teaching aids	65	35	3.20	0.95	Accepted
4.	Teachers' years of experience	95	5	3.75	0.35	Accepted
5.	Students' poor study habit	30	70	2.56	0.654	Rejected
6.	Students' low retention	90	10	3.50	0.432	Accepted
7.	Students' emotional problem	75	25	3.30	0.85	Accepted
8.	Students' lack of interest in the subject	65	35	3.32	0.95	Accepted
9.	Inadequate to cover syllabus	25	75	2.35	0.837	Rejected
10.	Difficult level of the subject	80	20	3.40	0.650	Accepted

Table 4. Students' perspective on methods to enhance their academic performance in chemistry

S/N	Items	Agree%	Disagree %
1.	Teachers methods of teaching	90	10
2.	Teachers' use of teaching aids	90	10
3.	Teachers to use proper lesson planning	80	20
4.	Teachers to ask for feedback from students	75	25
5.	Teachers to utilize real world examples	65	35
6.	Teachers to encourage collaborative learning	70	30
7.	Teachers to incorporate practical in the lesson plan	85	15

Table 4 shows the percentage count of respondents' opinion on the methods to be adopted to enhance students' performance in chemistry. According to item 1, 90% of the respondent agreed while 10% disagreed that students' performance in chemistry is affected by teachers' method of teaching. In item 2, 90% of respondents agreed while 10% disagreed that students' performance in chemistry will be improved and they will perform better if teachers use the teaching aids. 80% agreed that students who are taught with correct lesson plan will perform well in chemistry in WAEC Examination. 75% of the respondent agreed and accepted that getting feedback from the assessment given by the teacher will enhance good performance of the students in the examination. 65% agreed that using real world examples in teaching chemistry will enhance better performance of the students. 70% of the respondents also agreed that teachers encouraging collaborative learning will enhance better performance in WAEC Examination. 85% of the respondent agreed that incorporating practical in lesson plan, will improve better performance of the students in chemistry in WAEC Examination.

4. DISCUSSION

The aim of this study was to investigate the identified causes of failure of students in chemistry in WAEC Examination. It was observed that the identified causes of failure were the teachers' educational qualifications, their methods of teaching, failure to use instructional aids and their teaching experience. These findings support the previous research of (Usman, 2003., Nneka and Anakwo, 2004). Moreover, teachers with teaching qualification do not possess the necessary experience to make use of the teaching aids for effective teaching and learning, hence failure will be recorded by students in the subject in WAEC Examination. Findings on the methods to enhance students performance in chemistry in WAEC Examination showed that teachers should improve on their methods of teaching. They should teach and conduct practical. They should use instructional aids as these methods will make the teaching and learning of chemistry interesting, attractive, and enhance students performance in chemistry.

5. CONCLUSION AND RECOMMENDATION

Chemistry is very important and required in courses such as medicine, pharmacy, engineering, biological sciences, and agriculture. However, the performance of students in chemistry in WAEC Examination is a great concern to parents, society, educational institution, government and students. Hence a study to investigate the identified causes of students failure in chemistry. Findings showed the needs for more qualified and experienced teachers who will teach using instructional aids in teaching chemistry in the school. The problems of students failure would be reduced when teachers are qualified and competent to use instructional aids in teaching the chemistry.

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