

# THE INTERNATIONAL JOURNAL OF HUMANITIES & SOCIAL STUDIES

## The Influence of Students' Choice of Career on Their Performance in Chemistry Education in University of Jos, Nigeria

**Kamshinen Joel Dewan**

Senior Chemistry Instructor, Government Senior Secondary School, Nigeria

**Dr. Ephraim Joel Gongden**

Lecturer, Department of Science and Technology Education, University of Jos, Nigeria

### **Abstract:**

*This study determined the influence of career choice on students' performance in chemistry education in the University of Jos, Nigeria. Descriptive design was used with a student sample of fifty eight (58) drawn from the 200, 300 and 400 levels. A five-point Likert scale questionnaire and students' cumulative grade point average (CGPA) scores were used as instruments. Three research questions were answered using mean responses while three hypotheses were tested using t-test for independent samples at 0.05 confidence level. The results show that majority of the respondents did not choose to study chemistry education as their career. It also shows that even though many of them are happy studying chemistry education, very few would like to be teachers after graduation. There was a significant difference in the mean performances of chemistry education students who chose chemistry education and those who chose other courses. The students studying their course of choice performed better than those studying the course given them. The study recommended the need for educational administrators, academic planners and admission officers to carefully admit students according to their programme of choice and the need for teachers to emphasize the importance of chemistry education as a career to create interest in the students.*

**Keywords:** Chemistry education, career, choice, performance

### **1. Introduction**

Career is the sequence of occupation, jobs and position occupied during a persons' working life. It is tied to one's occupation or work activities (Aminu & Timothy, 2014). The Oxford online dictionary defines career as an occupation undertaken for a significant period of a person's life and with opportunities for progress. The central feature of a career according to Care (2009) is that it involves work which one anticipates doing and staying with over a significant period of time, say a lifetime, which one expects will regularly consume substantial portion of one's time and energy and which one anticipates will affect one's way of life in salient respects. Career selection is one of the most important choices in students' lives. This choice of decision will have impact on them throughout their lives. Edward & Quinter (2011) noted that career choice has become a complex science with the advent of information technology, the emergence of post industrial revolution and job competition. It was a common practice in the olden days to find feudalism converting it into a family affair where the son of a blacksmith was destined to become a black smith and a feudal was born a leader. Wattles (2009), also noted that industrialization and post industrialization has made it possible for a common person to be rich in whatever field he wants as long as he has due skills and knowledge. Wattles (2009) also noted that nowadays One does not only make due career planning but also exhaustive career research before making a career choice so as to adjust to the evolving socioeconomic conditions. Career choice plays an important role in shaping the attitude of students towards any chosen discipline and in the subsequent achievements attained in the field (Aminu & Timothy, 2014). Studies have shown that many students fail because of an apparently unsuitable selection of the course of study. This may largely be due to the fact that a child's attitude is likely to be influenced by his interest in a particular discipline and in turn may influence his performance (Von-Mizner & Williams, 2009). It is possible to say, if students are interested in a field, they are more likely to be successful in that field because interest in a field may produce high motivation. According to Hewitt (2010), factors influencing career choice can either be intrinsic or extrinsic or even both. Edward & Quinter (2011) noted also that one consistent finding in research suggests that adolescents' own aspirations are influenced by their parents' expectations. Parental support and encouragement are important factors that have been found to influence career choice.

In educational institutions, success is measured by academic performance (Bell, 2013), which generally refers to how well a student is accomplishing his or her tasks and studies or how well a student meets standards set out by the institution itself (Bell, 2013). Academic performance is the best indicator for success in life; it reflects one's abilities. The

qualities it takes to have an excellent academic performance are those required to be successful in life, which includes consistency, determination, and focus (Abiola, 2012),

Chemistry is a branch of physical science that deals with the composition, properties and uses of matter. It also probes into the principles governing the changes that matter undergo (Ababio, 2001). Gongden (2016) noted that chemistry has played a major role in science, technology and society and that it still does so today. He also noted that there is hardly anything in nature that chemistry has no impact or influence over hence the assertion that without chemistry there will be no life. In selecting the contents of the Senior Secondary School Chemistry Curriculum, three major issues shaping the development of nations worldwide and influencing the world of knowledge today were identified as globalization, information/communication technology and entrepreneurship. The desire that Nigeria be identified with contemporary development worldwide have called for the organization of the contents of the curriculum around four themes which are: the chemical world, chemistry and environment, chemistry and industry and lastly, chemistry and life (Federal Ministry of Education, Nigeria (FME), 2009). It is clear that chemistry as a branch of science is key in science and technology, therefore any nation that desires development must pay attention to it. Students studying chemistry should be given the best education in order to be the best. One can easily say that the primary objective of the chemistry program in higher institutions is to produce successful graduates who possess substantial knowledge of chemistry with the required skills and capabilities demanded by employers. This is usually measured by academic performance of the students as established by Bell (2013).

Studies have shown that many students fail because of an apparently unsuitable selection of the course of study. This may largely be due to the fact that a child's attitude is likely to be influenced by his interest in a particular discipline which in turn may influence his performance (Von-Mizner and Williams, 2009). Research by Aminu & Timothy (2014), suggest that imposition of career on students by school authority affects students' performance and may be one of the reasons students failed. This is in view of the fact that career choice plays an important role in shaping the attitude of students towards any chosen discipline and the subsequent achievements attained in the field. The career choice of the students' need to be based on strong knowledge, complete information and appropriately guided, matching personality type and other intrinsic and extrinsic factors. Imposition of career on students by the school administrators does not take into consideration the students interest which is a driving force to students' choices of career. Students choose courses based on their interest and are given courses they might not have ideas about. It is disheartening to notice that students in the field of education are the ones directly affected and it prompts one to ask 'how on earth will a nation grow if its carriers of knowledge (teachers) are teaching not from their heart but because they had no choice and they do it as though they are compelled'.

Most students in university are found to be studying courses they never applied for but which they had to offer as they have no option. Given the opportunity, many would love to study medicine, pharmacy and other 'prestigious' courses but often end up in other courses they never applied for. The results of chemistry students often released has indicated poor performance by chemistry education students as indicated by their low Cumulative Grade Point Average (CGPA) scores and many carry over courses seen in the semester results placed on the departmental notice boards. Could this be due to the imposition of such courses on them against their wishes? Therefore, this study sets out to find how chemistry education students' career choice affects their performance.

### *1.1. Objectives of the Study*

The objective of the study is to investigate the influence of students' choice of career on their performance in chemistry education in university of Jos. Specifically, the study sought to:

- To find out if students are studying the courses they applied for.
- Establish whether or not students are happy with their courses of study.
- Find out if chemistry education students' choice of career influences their performance

### *1.2. Research Questions*

The following research questions guided the study:

- To what extent are students given their courses of choice for study?
- What is the opinion of students concerning their courses of study?
- What is the difference in the performance of students who chose chemistry education as their course of study and those who did not chose chemistry education?

### *1.3. Research Hypotheses*

The following null hypotheses were formulated and tested:

- Students studying chemistry education in university of Jos did not apply for such the course
- Chemistry education undergraduate students are not happy with their course of study
- There is no significant difference in the mean performance of students admitted to their courses of choice and those given courses other than their choices.

## **2. Materials and Method**

Descriptive survey design was used for the study in which data was collected at a particular time from a sample for the purpose of describing the population represented by the sample at that time. The population for this study consisted of all students of chemistry education unit of the department of science and technology education, faculty of

education in the University of Jos, Jos, Nigeria. A simple stratified random sampling technique was used to obtain a sample of 58 students from 200level, 300level and 400level. The 100level students were excluded from the study due to the fact that at the time this study was carried out, they had not obtained sufficient CGPA to determine their performance.

The instruments used for data collection was a five - point Likert scale questionnaire and the students' CGPA (Sessional results). The Likert scale questionnaire consisted of fourteen (14) was designed and standardized by the authors was used is suitable for collection of views of respondents on the topic of the study. The questionnaire consisted of three sections: section A, B, and C. Section A was based on personal information while sections B, and C were based on the research questions of the study. The questionnaire also consisted of the five options of the Likert mean, namely: Strongly Agreed (SA), Agreed (A), Undecided (U), Disagreed (D) and Strongly Disagreed (SD). Items 1-5 deal with students' choice of course or career. Items 6-14 concern students' feelings toward chemistry education which they have been offered to study.

Data from the questionnaire were reduced to percentages using descriptive statistic. Since the Likert attitude scale was used, it was considered necessary to report percentage responses by combining certain categories of responses, for example, Strongly Agree and Agree were considered as one. While Disagree and Strongly Disagree were considered as another, Undecided formed the third major category. Scores of 5, 4, 3, 2 and 1 were given to SA, A, U, D and SD respectively for positive statements while the reverse was given to negative statements. The mean is related to a standard mean of 3.

### 3. Results

The research questions were answered using the mean responses from the students' responses and the student t-test distribution was used to test the null hypotheses postulated and to compare the mean scores for significant difference at 0.05 level of significance. The students' performance (CGPA) was grouped into two: the first group consisted of the performance of those that applied to study chemistry education while the second group consisted of the others who applied to study other courses but who were given chemistry education to study.

The data collected from students using the questionnaire was analyzed appropriately. Table 1 shows information on gender, mode of entry and courses applied for initially.

G Gender	Male	Female	Total
Number	36	22	58
%	62.10	37.90	100

Table 1: Distribution of gender of the samples

G Entry Mode	UTME	Direct Entry	Total
Number	47	11	58
%	81	19	100

Table 2: Mode of Entry of the Students into the University

G Course Applied	Number	%
Chemistry Educ	13	22.40
Medicine & Surgery	24	41.40
Medical Lab Tech.	05	8.60
Pharmacy	07	12.10
Nursing	07	12.10
Biochemistry	02	3.40
Total	58	100

Table 3: Courses Applied By the Students and the Percentage of Students Who Applied

#### 3.1. Research Question One

To what extent are students given their courses of choice for study?

Tables 3 and 4 give the responses of students concerning their courses of choice and the courses they were admitted to study.

Item No	SA	A	U	D	SD	Total	X	A(%)	U(%)	D(%)	Remarks
1	18	19	04	10	07	58	3.53	63.8	6.9	29.3	Positive
2	11	02	00	06	39	58	1.97	22.4	00	77.6	Positive
3	04	08	04	09	33	58	1.98	20.7	6.9	72.4	Positive
4	15	12	01	17	13	58	3.02	46.6	1.7	51.7	Negative
5	16	23	02	10	07	58	2.47	67.0	23.5	29.3	Negative

Table 4: Students' Choice of Career (Items 1 -5)  
The Average Mean Response (X) = 2.59

Comparison of the average mean response of 2.59 obtained from table 3 above, with the standard mean of 3.0 reveals that most of the students are not offering the courses they applied for. Table 3 also shows that 77.60% of the

students did not apply to study chemistry education but were offered chemistry education; hence they are not studying the courses they applied for.

### 3.1.1. Hypothesis One

Students studying chemistry education in the University of Jos did not apply for the course.

Based on analyses given in tables 3 and 4, students studying chemistry education in the University of Jos did not apply for the course.

The result shows that 63.8% of the students were counseled before making their career choices, 29.3% were not counseled. 22.4% of the students applied to study chemistry education while 77.6% of the students applied to study other courses. While 20.7% of the students always wanted to go into chemistry education as a lifelong profession, 72.4% of them disagreed to this and 6.9% were undecided. 46.6% of the students prior to getting admission did not know about a course as chemistry education while 51.7% of them disagreed to this item. Lastly, 67.2% of the students had no choice but to come for the course after getting the admission and 29.3% disagreed to the item indicating that they came because they wanted to.

The analyses showed that the students studying chemistry education in the University of Jos did not apply for the course. Therefore hypothesis one failed to be rejected. Therefore the students studying chemistry education in the University of Jos did not apply for the course.

### 3.2. Research Question Two

What is the opinion of students concerning their course of study?

Item No	SA	A	U	D	SD	Total	X	A(%)	U(%)	D(%)	Remarks
6	14	34	07	01	02	58	3.98	82.7	12.1	5.2	Positive
7	29	14	07	05	03	58	1.95	74.1	12.1	13.8	Negative
8	01	10	11	16	20	58	3.76	19.0	19.0	62.1	Negative
9	06	11	00	14	27	58	3.78	29.3	0.0	70.7	Negative
10	06	12	04	17	19	58	3.54	31.0	6.9	62.1	Negative
11	23	28	03	03	01	58	4.21	87.9	5.2	6.9	Positive
12	25	25	04	02	02	58	4.19	86.2	6/9	6.9	Positive
13	16	11	18	05	08	58	3.38	46.6	31.0	22.4	Positive
14	09	18	06	16	09	58	2.97	46.6	10.3	43.1	Negative

Table 5: Students Feelings about Their Course of Study  
Average Mean Response (X) = 3.53

The average mean response of 3.53 which is above the standard mean of 3.0 indicates that students are happy studying chemistry education.

82.7% of the students agreed that they are happy studying chemistry education, 12.1% are undecided while 5.2% disagreed to the item showing that they are not happy studying the course. While 74.1% said they would have been happier studying their course of choice, 12.1% are undecided while 13.8% disagreed showing that they would not have been any happier studying chemistry education. 86.2% of the students believe they will make it in life with chemistry education, 6.9% are undecided while 6.9% also disagreed. Lastly, 46.6% of the students want to be teachers after graduation from the university, 31% of them are still yet to decide on it whereas, only 22.4% will not want to practice the profession after graduation. These results show that even though the students are not studying the courses of their choice, yet they are happy doing so.

### 3.2.1. Hypothesis Two

Chemistry education undergraduate students are not happy with their course of study.

The analyses in table 5 show that the chemistry education students are happy reading the course. Hypothesis two is therefore rejected in favor of the alternate hypothesis. Therefore, chemistry education students are happy studying the course (chemistry education).

### 3.3. Research Question Three

What is the difference in the performance of students who chose chemistry education as their course of study and those who did not chose chemistry education?

Since the population consisted of two set of students; those that applied to study chemistry education and those who did not apply for it. The sample was grouped into two. Group 1 consisted of those that applied to study chemistry education and group 2 consisted of those who applied other courses such as medicine.

Group	N	Mean(x)	Variance (S <sup>2</sup> )	df	t (calculated)	t (critical)
1	13	2.31	0.4778			
2	45	1.84	0.5815	56	2.1218	2.009

Table 6: Summary of T Test Results for Hypothesis Three

The mean CGPA of group 1 is 2.31 while that of group 2 is 1.84. The difference between the two is 0.47. Considering that this is CGPA (on a 4-point scale), 0.47 is not negligible. The difference in the performance of students who chose chemistry education as their course of study and those who did not chose chemistry education is 0.47.

### 3.3.1. Hypothesis Three

There is no significant difference in the mean performance of students admitted to their courses of choice and those given courses other than their choices.

From table 6, the  $t$  – calculated is greater than  $t$  – critical ( $2.1218 > 2.009$ ) at  $p = 0.05$  level of significance. This means that the difference between the means is significant. Hypothesis three is rejected in favor of the alternate. Therefore there is a statistically significant difference in the mean performance of students admitted to their courses of choice and those given courses other than their choices.

## **4. Discussion of Results**

One of the findings of this study is that most of the students did not apply to study chemistry education which implies that they did not chose chemistry education as a career. This result ends support to the belief of Aminu & Timothy (2014) that school authorities impose career on students. This is reflected in the responses of the students where 46.6% of them feel they were compelled to study chemistry education. This may be explained by the fact that every year, thousands of applicants apply to the University of Jos through the Unified Tertiary Matriculation Examination (UTME) formally Joint Admission Matriculation Board (JAMB) to study medicine and surgery, pharmacy and other related courses. Unfortunately very few (less than a thousand) are usually admitted into such courses as the faculties must not exceed the recommended number by the various professional bodies such as Nigeria Medical Association (NMA). This makes the admission into these courses very competitive such that thousands who are qualified are usually pushed into other faculties and courses which were not their choices. For instance, very few candidates usually apply for admission into the faculty of education. In order to meet the admission requirement (number) of the faculty, candidates who could not gain admission into the medical or pharmaceutical sciences are usually admitted to various programs in the faculty of education, chemistry education being one of the programs. Students therefore find themselves reading courses they didn't apply for. Majority of the students in this study are victims to this. This may likely affect their attitude towards the program and hence their performance. The study showed that students that got admitted through direct entry to study chemistry education were mainly those who applied to study chemistry education. This may not be unconnected with the fact that they have had some form of educational training probably from colleges of education and wished to further their studies in the field.

The study also revealed that even though the students seem to be happy offering the course, very few wish to practice the teaching profession after graduation. A significant percentage (31%) is yet to decide on this while (46.9 %) will not practice it. This agrees with Aminu & Timothy who suggested that some students studying courses other than their choices may eventually go back to study what they initially wanted while others may venture into other endeavors in life.

Another finding of the study is that students who applied to study chemistry education as their course of interest (choice) performed better than students who didn't choose chemistry education but were made to study it as seen in their CGPAs. This is in line with Von – Mizner & Williams (2009) assertion. They believe that choice of career affects the attitude and interest of students. This in turn affects their performance in the course. Obomanu and Adaramola (2011) also pointed out that interest in a course or program can affect students' performance.

## **5. Conclusion**

Career selection is one of the major choices in students' plans which impact them throughout their lives. It is an important decision that must not be rushed into or forced on an individual. The purpose of education is to make an individual develop his various faculties that will make him useful to himself and the society (Ezeani, 2013). Wrong choice of career whether induced or by any form of false consciousness generates frustration in work place, the individual become the workman who quarrels with his tools each day. Therefore, career choice plays an important role on the performance of the students in the course of study and subsequently in the field. It is important to say at this point also that any nation that desires to grow must pay attention to education. This will mean that individuals who will want to be teachers are well checked before admitted to ensure that people going into the profession are passionate about knowledge, teaching and learning. It should be noted that for society, if the social system must function smoothly and efficiently, sufficient number of people must be attached into the various occupations. This will mean then that parents, teachers, and counselors will have to be up and doing to ensure that the younger ones are guided in the proper direction bearing in mind that the changing needs of the society will continue to increase the number of occupational career choices.

The study recommends that school administrators should try as much as possible to ensure that students are placed to study courses they applied to study to avoid improper imposition of careers on students which might go against students' interest. Learning institutions at all levels should be well equipped with counseling personnel/facilities and guidance counselors to ensure the students are properly guided as they make their choices. Those who are offered courses other than choice should be counseled, guided and encouraged before they commence the program. Parents should watch their kids properly as they grow in order to help direct their interest in the right direction. Also, they should provide adequate counseling to their wards concerning career opportunities and career choice because the home is the first point of socialization for the child. of how and where to spend the rest of their lives. Lecturers in chemistry education should encourage the students admitted to study the course, giving them hope by talking of the many opportunities they may

have after graduation. Government can do well to improve the welfare of teachers so that it is not looked down upon among other professions and schools of education are not regarded as dumping grounds for those rejected into other professional schools of study.

## 6. References

- i. Ababio, O. Y. (2007). *New school chemistry for senior secondary schools* (2007 ed.). Lagos: Africana first publishers.
- ii. Abiola, O. (2012). Academic performance the best indicator of potential for success in life. Retrieved from <http://www.fogs.com/articles/academic-performance-the-best-indicator-of-potential-for-success-in-life-1622>
- iii. Aminu, M., & Timothy, J. (2014). Career choice and academic performance of Microbiology students in a Nigerian university. *International Journal of Science and Technology Educational Research*, 5(5), 58-66.
- iv. Bell, M.J. (2013). Define academic performance. Retrieved March 6, 2014 from [http://www.ehow.com/about\\_4740750\\_define-academic-performance.html](http://www.ehow.com/about_4740750_define-academic-performance.html).
- v. Care, N.S. (2009). Career Choice. *JSTOR Chicago Journals*, 94 (2), 283-302.
- vi. Career. (2018). In *OxfordDictionaries.com*. Retrieved from <http://definition/english/career>
- vii. Edwards, K., & Quinter, M. (2011). Factors Influencing Students Career Choices among Secondary School Students in Kisumu Municipality, Kenya. *Journal of Emerging Trends in Educational Research and Policy Studies*, 2(2), 81-87.
- viii. Ezeani, N. S. (2013). Career Choice: A basic issue in primary and secondary level. *Arabian Journal of Business and Management Review (Nigerian Chapter)*, 1 (2). 18-28.
- ix. Federal Ministry of Education (FME). (2009). *National Curriculum for Senior Secondary Schools*. NERDC, Lagos.
- x. Gongden, E.J. (2016). The Effects of Analogy on Male and Female Chemistry Students' Problem-Solving Ability in Electrolysis. *International Journal of Science Research in Education (IJSRE)*, 9(1), 1-6.
- xi. Hewitt, J. (2010). Factors influencing career choice. Retrieved February 15, 2014 from <http://www.ehow.com>
- xii. Obomanu, B. J. & Adaramola, M. I. O. (2011). Factors related to underachievement in science, technology and mathematics education (STME) in secondary schools in Rivers state, Nigeria. *World Journal of Education*, 1(1). 102
- xiii. Von-Mizner, B. H. & Williams R. L. (2009). The effects of students' choices on academic performance. *Journal of Positive Behaviour Intervention*, 11 (12), 110-128.
- xiv. Wattles, D.W. (2009). The science of getting rich. Retrieved October 26, 2014 from <http://www.thescienceofgettingrich.net>