

# RELEVANCE OF COUNSELLING IN MATHEMATICS STUDENTS CAREER CHOICE OF MATHEMATICS

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## **Abstract**

*This study investigated the relevance of counselling in mathematics students' career choice in mathematics. The population consist ninety (90) students of Federal College of Education, Okene. A sample of fifty (50) students was sampled out of the population and used for the study. Questionnaire was the main instrument used to obtain information from the students. Respondents were asked to respond to the questionnaire using yes or no and four point Likert scale of strongly agreed (4), agreed (3), disagreed (2), strongly disagreed (1). Statistical analyses were based on descriptive and inferential statistics; such as frequencies, percentages, means, standard deviation and chi-square at 5% level of significance. It was revealed that career counseling in secondary schools is ineffective and so students' career choice in mathematics does not depend on school counselors' services. It was therefore, recommended that counselors should not only be available in schools but that they should routinize their activities to benefit students the more.*

According to Makinde (1984) and Patterson (1977), 'guidance' refers to a broad area of all educational activities and services aimed at assisting individual students to understand themselves and adjust to school life. Mutie and Ndambuki (1999) defines 'counselling' as a learning-oriented process which usually occurs in an interactive relationship with the aim of helping the client learn more about him/herself. According to Bark (2003), guidance and counseling together are the assistances made available by qualified and trained persons to an individual of any age to help him to manage his own life activities, develop his own points of view, make his own decisions and carry his own burden.

Guidance and counselling services have been introduced in Nigerian secondary schools to address several issues. Moreover, a unit was thus established at the Nigerian ministry of education to undertake such services in schools. Guidance and counselling is therefore aimed at bringing about maximum development and self-realization of human

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potential for the benefit of the individual and the society. In a school, the programme assists students in harmonizing their abilities, interests and values and enables them to develop their full potential. It directs students on appropriate career and subject choices; solving discipline, education, social and psychological problems; and general adjustment to school life (Gorardo, 1996). In addition, Braddock (2001) states that, the purpose of guidance and counseling in schools is to improve academic achievement, foster positive study attitudes and habits, increase acquisitions and application of conflict resolution skills, and decrease school dropouts. However, counselling services at secondary schools are not only to students who are underachieving, maladjusted, but also to gifted children who do not know what to do with their abilities.

The development of guidance and counselling originated from Europe and the United States of America in 1900's. In Nigeria, the services started to be incorporated into some school systems way back in 1959. One of the essences was to eliminate overwhelming ignorance of many young people on their choices of career prospects and personality maladjustment among school children. Based on these and more, career officers and counselors were appointed to take the responsibilities in sensitizing students on the needs for effective career choice. Although these were untrained counselors, their efforts brought remarkable development in guidance and counseling in Nigeria that led to organized body of counselors (Oye, Obi, Mohamed and Gwadabawa, 2012).

Supporting literature on career development provide insight to the fact that career counselling is being challenged to meet the needs of a society that is experiencing vast changes in the work place that is rapidly becoming more diverse (Zunker, 2002). The changes in counselling needs have occurred because there is the need for quality work performance which is so pervasive in the lives of individuals since it influences all our life roles. This has expanded the role and scope of the career counsellor to include more than just helping someone find a job. Even though, finding an optimal career is of utmost importance, career counselling now provides a broad spectrum of concerns such as mental health issues that restrict career, changes in the work place and matching the needs of workers in a competitive global economy. These issues and many more provides challenging environment to the school career counsellor in the contemporary environment (Zunker, 2002). As a result, school counsellors are mostly expected to be a trained professional.

Despite the obvious importance of guidance and counseling, there are still challenges experienced in public secondary schools. Several studies have reported different achievements following introduction of guidance and counseling services in

schools. The survey conducted in Kenya after over three decades of inception of guidance and counseling services reveals that, most of the guidance teachers have a vague understanding of what really it entails or encompasses; and the students also do not fully utilize the services and do not understand its role (Ndegwa, 2013). The study further, reveals that since the introduction of the services, there has not been a change in behavior of students. Akinboye (1987) observes that a good number of adolescent and youths in many Nigerian secondary schools have incongruent patterns between their aspirations and subject combination for the school certificate examination. In addition, most Nigerian youths today engage in occupations not on the basis of reasonable choice but on the basis of fate. Cases of maladaptive behaviors like violation of school rule and regulation, bullying, truancy, drug abuse, alcohol addition, sexual abuse, rape are on the increase among school adolescents. This implies that the guidance and counseling services may not have been embraced or impacted students' lives properly. It is therefore the objectives of this study to ascertain the relevance of secondary school counselors in students' choice of career most especially in mathematics.

The counsellor thus can focus on career development interventions including career guidance, career counselling, career information, career education, career development program and career coaching (Isaacson & Brown, 2000). Since all these interventions help people to develop self-awareness, occupational awareness, learn career decision making skills, job search skills, cope and adjust with job stress, problem solving skills and others (Niles & Harris-Bowlsbey 2002), the students will at the end acquire the necessary skills of given such quality facilities. By doing this, the counsellors can facilitate the infusion of career exploration and knowledge into the students. Again Shoffne and Vacc (1999) posit that school counsellors can help increase family collaboration by working closely with parents to increase family-school communication, and by providing parents with the skills and attitudes necessary to encourage their children to make appropriate career choices. Parents' beliefs influence children's beliefs.

### **Statement of the Problem**

It is expected that by the time students leave Senior Secondary School (SSS), they should have decided on the occupation or career they intend to pursue. In contrast, it has been observed that most students complete Senior Secondary School without having an idea as to the career to pursue (Kelechie & Ihuoma, 2011). According to Kelechie, & Ihuoma (2011), students do not make informed career choice because they are largely influenced by their peers and parents' preference for certain careers. This has led to some career being over pursued and leaving some other with few people most

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especially, mathematics. Considering the problem of youth unemployment in Nigeria which may be linked to the confusion of so many school leavers with wrong choice of career, this study sought to find out the relevance of school counsellors role in students choice of career.

#### **Purpose of the study**

The study aimed at achieving the following specific purposes:

- (i) To find out how students choose a career in mathematics.
- (ii) To establish effectiveness of guidance and counselling programme in secondary schools as regards career choice.
- (iii) To ascertain specific roles school counsellors play in assisting students make career choice.
- (iv) To determine the students perceptions of school counsellors' role in the choice of a career.
- (v) To establish whether students' career in mathematics depend on the role played by the students' secondary school counselor.

#### **Research Questions**

Based on the purpose of the study, the following research questions were raised:

- (i) How did you choose a career in mathematics?
- (ii) What is the effectiveness of guidance and counselling programme in secondary schools as regards career choice?
- (iii) What specific roles does school counselor play in assisting students make career choice?
- (iv) What are mathematics students' perceptions of school counsellors role in the choice of a career?
- (v) Does the choice of students' career in mathematics depend on the role played by the students' secondary school counselor?

## **Research Methods**

The descriptive survey research design was used for the study. Sarantakos (1998) intimated that descriptive research is able to describe a phenomenon and make generalizations concerning a larger group where a sample was drawn. Amedahe (2003) also holds that in descriptive research, accurate description of activities, objects, processes and persons are the objectives. Therefore, quantitative and qualitative approaches which involve systematic and objective collection and analysis of data were adopted in this study. The rationale for this approach is that the quantitative data and their subsequent analysis provided a general understanding of the research problem whilst the qualitative data and their analysis refined and gave detailed explanation to the statistical results by exploring participants' views in more depth (Creswell, 2003).

## **Population and Sample**

The population for the study was all students of mathematics department of Federal College of Education, Okene, Kogi state. Thus, the target population consisted of total number of ninety (90) students.

Out of the ninety (90) students of mathematics department, fifty (50) students representing 55.56% were sampled out. In selecting the sample size for the study, proportional stratified sampling technique was used. Proportional stratified sampling was used for the selection of students because there were three (3) different levels (NCE I, II & III) with unequal population and each levels had to be proportionally represented. Like the random sampling, proportional stratified sampling technique is unbiased in terms of representation (Tryfos, 1996).

## **Instrument**

Data were collected through administration of questionnaire to the students. The instrument aimed at collecting specific information from the targeted respondents. The questionnaire used for the study contained Section A and B. Section A contained information on the bio-data of the respondents. In section B, the questionnaire contained information eliciting their responses on the relevance of school counselors in career choice. The responses were based on simple 'yes' or 'no' and a Likert Scale format ranging from strongly disagree(1), disagree(2), agree(3), and strongly agree(4). Students were instructed to tick as was applicable to their situations.

The questionnaires were amended after my colleague advice to ensure validity. In this study, the reliability coefficient of the items in the questionnaire was computed which yield figure above 0.6 and considered reliable (Cronbach, 2005).

### **Procedure for Data Collection**

The researcher briefly addressed the selected students before hand for acquaintance with the targeted respondents. This exercise assisted the researcher in encouraging the respondents to respond. Thereafter, data were then collected from the respondents using the questionnaire. The class representative in each level assisted in the distribution and collection of the completed questionnaire from the respondents. No one was compelled to take part in this study. The respondents were instructed to provide honest responses to increase the girth of reliability of the study. Fifty (50) copies of the questionnaire were distributed to the students. The questionnaire were duly completed and 100% of the questionnaire given out were collected from the students.

### **Data Analysis**

Data collected from the questionnaire were quantitatively analyzed in order to facilitate answering the research questions. This was done using both descriptive and inferential statistics. The descriptive analyses using frequencies, percentages, means and standard deviation were used to summarize and organize data and to describe the characteristics of the population. Inferential statistics were used in making deductions and generalizations about the whole population. Chi-square statistics was used in testing research question five (5) at 5% level of significance.

### **Research Question 1**

How did you choose a career in mathematics?

**Table 1:** Frequency and percentage of how students choose a career in mathematics

| <i>Statement</i>                             | <i>Yes<br/>N(%)</i> | <i>No<br/>N(%)</i> |
|--|---------------------|--------------------|
| <i>School counselor’s career counselling</i> | 5(10)               | 45(90)             |
| <i>Parental advice</i>                       | 2(4)                | 48(96)             |
| <i>Peer group influence</i>                  | 12(24)              | 38(76)             |
| <i>Mathematics teacher influence</i>         | 5(10)               | 45(90)             |
| <i>Personal decision</i>                     | 18(36)              | 32(64)             |
| <i>College admission office decision</i>     | 40(80)              | 10(20)             |

Table I revealed 90 per cent of the sampled mathematics students disagreed that Counselor’s career counseling was their reason for choosing mathematics as a career. Similarly, mathematics teacher influence has the same insignificant impact on the students’ choice of career in mathematics. Students also have shown that parental advice, peer group influence and personal decision were not their reasons for chosen mathematics as a career. This is revealed in the table where 96 per cent, 76 per cent and

64 per cent of the students respectively disagreed with the variables above. It is clearly shown in the table that most students (i.e 80 per cent) found themselves in mathematics not because they desired it but the decision of the college admission office.

### **Research Question 2**

What is the effectiveness of guidance and counseling programme in secondary schools as regards career choice?

**Table II:** Frequency and percentage of effectiveness of guidance and counseling programme in secondary schools as regards career choice.

| <i>Statement</i>  | <i>Yes<br/>N (%)</i> | <i>No<br/>N (%)</i> |
|---|----------------------|---------------------|
| <i>School counselor is available in my school.</i>  | 38(76)               | 12(24)              |
| <i>The students are aware of the existence of guidance and counseling services in my school.</i>        | 30(60)               | 20(40)              |
| <i>The school counselor is readily available to address students' personal career decision- making.</i> | 19(38)               | 31(62)              |
| <i>The school counselor is accessible to the students.</i>  | 22(44)               | 28(56)              |
| <i>The school counsellor privately counsel students' problem of career choice.</i>                      | 13(26)               | 37(74)              |
| <i>The school counselor meets the students on assembly to provide useful career guidance.</i>           | 24(48)               | 26(52)              |
| <i>The school counselor organizes career conference for the students.</i>                               | 10(20)               | 40(80)              |
| <i>Students usually go to school counselor for personal career decision-making.</i>                     | 8(16)                | 42(84)              |
| <i>The school counselor often solve students' problems of career choice.</i>                            | 5(10)                | 45(90)              |

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The result revealed that 38 (76%) of the sampled 50 mathematics students confirmed the availability of school counselor in their former secondary schools with 30 (60%) of them aware of their services. However, the result revealed lack of effective implementation and functioning of guidance and counseling programme as regard students' career choice; since 31(62%), 28(56%), 37(74%) and 45(90%) mathematics students respectively disagreed that the school counselors are readily available, accessible, privately counsel students and solve students' problems of personal career decision-making. The results further revealed the same trend as 26(52%), 40(80%), and 42(84%) mathematics students negatively responded that the school counselors rarely meets the students on assembly, organizes career conference and students also rarely go to school counselor for personal career decision-making.

### **Research Question 3**

What specific role does school counselor play in assisting students make career choice?

**Table III:** Means and standard deviations of the roles school counselors play in assisting students make career choice.

| <i>Role of School Counsellor</i>            | <i>Mean</i> | <i>Standard Dev.</i> |
|---|-------------|----------------------|
| <i>Guidance &amp; counseling on career</i>  | 3.82        | 1.23                 |
| <i>Identification of career goals</i>       | 3.80        | 1.37                 |
| <i>Information on future opportunities</i>  | 3.66        | 1.49                 |
| <i>Career decision making</i>               | 3.27        | 1.52                 |
| <i>Help in self assessment</i>              | 3.00        | 1.56                 |
| <i>Awareness day on career</i>              | 2.98        | 1.34                 |
| <i>Career field trips</i>                   | 2.87        | 1.43                 |
| <i>Occupational interest inventory</i>      | 2.80        | 1.58                 |
| <i>Career conference</i>                    | 2.69        | 1.65                 |
| <i>Personality and career aptitude test</i> | 2.53        | 1.66                 |
| <b><i>Mean of Means</i></b>                 | <b>3.14</b> | <b>1.48</b>          |

The results of the study revealed that out of the ten (10) roles of the school counsellor presented to mathematics students, the respondents agreed that all of the roles of the counsellor are capable of contributing immensely in choosing their career. This is because, each of the items' means are above 2.50. The responses indicated that the students agreed that guidance and counseling on career was the intervention activity that helped them most to choose a career among the counsellor's roles with a mean of 3.82 and a standard deviation of 1.23. This is followed by Identification of career goals (Mean = 3.80; SD = 1.37), information on future opportunities in the career area (Mean



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= 3.66; SD = 1.49), self assessment (Mean = 3.27; SD = 1.52), Awareness day on career (Mean = 3.00; SD = 1.56), Career field trips (Mean = 2.87; SD = 1.43), Occupational interest inventory (Mean = 2.80; SD = 1.58), Career conference (Mean = 2.69; SD = 1.65) and Personality and career aptitude test (Mean= 2.53; SD=1.66) as roles of the counsellor in assisting the students to choose the desired career.

**Research Question 4**

What are mathematics students' perceptions of school counsellors role in the choice of a career?

**Table IV:** Frequency and percentage of the mathematics students' perceptions of school counsellors roles in the choice of a career.

| <i>Statement</i>   | <i>Yes<br/>N (%)</i> | <i>No<br/>N (%)</i> |
|--|----------------------|---------------------|
| <i>My school counselor is trust worthy enough to keep my career decisions as secret.</i>       | 15(30)               | 35(70)              |
| <i>My school counselor can help me make good career choice since he/she is knowledgable.</i>   | 35(70)               | 15(30)              |
| <i>My school counselor can help me because he/she can provide information that I required.</i> | 30(60)               | 20(40)              |
| <i>My school counselor is transparent to help me make choice of my future career.</i>          | 34(68)               | 16(32)              |
| <i>My school counselor considered my interest in making choice of career.</i>                  | 21(42)               | 29(58)              |
| <i>My school counselor can help me make choice of my future career.</i>                        | 37(74)               | 13(26)              |

The results in Table IV indicated that 74% of the respondents agreed that their former school counsellors could help them make decisions concerning their career. For the same reason, 70%, 68% and 60% of the mathematics students respectively considered their school counselor as knowledgable, transparent and adequately furnished with information to enable him/her help them in making wise decision in their career choice. However, despite this apparent faith in the school counsellor to be able to help,

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70% of the students do not trust counselors. Also, 58% of the sampled mathematics students believed that their school counselors may not consider their interest in their choice of career.

**Research Question V**

Does the choice of students' career in mathematics depend on the role played by the students' secondary school counselor?

**Table V:** Chi-square test for dependence of the choice of students' career in mathematics on the role played by the students' secondary school counselor

| <i>Chose Maths as career due to</i> |                                   |                         |           |                |          |                    |
|-------------------------------------|-----------------------------------|-------------------------|-----------|----------------|----------|--------------------|
|                                     | <i>Sch. Counsellor counseling</i> | <i>Other influences</i> | <i>df</i> | $\chi^2_{.05}$ | $\chi^2$ | <i>Remark</i>      |
| <i>Yes</i>                          | 5                                 | 15                      | 1         | 3.84           | 6.25     | <i>Significant</i> |
| <i>No</i>                           | 45                                | 35                      |           |                |          |                    |

The computation in the table have shown that the calculated Chi-square ( $\chi^2$ ) = 6.25 is greater than the table Chi-square ( $\chi^2_{.05}$ ) = 3.84 with degree of freedom (df) = 1. This difference is statistically significant at  $\alpha = 0.05$ . Thus, we can conclude that the choice of students' career in mathematics is evidently independent of the role played by the students' secondary school counselor.

**Findings**

The research findings are:

- (i) All the schools have established guidance and counselling programme and the school counselors are available in the schools.
- (ii) There is no effectiveness of guidance and counseling programme in secondary schools.
- (iii) Students are aware of the Counsellors' roles (or services) in the school and believed that their roles are capable of helping them make career choice.
- (iv) Students do not go to school counselors for personal career decision-making due to lack of trust for the school counselor that he/she will keep their career choice as secret.

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- (v) Students are not comfortable in involving counselors in their career choice because they believed that their interest might not be considered in their choice of career.
- (vi) The choice of students' career in mathematics is independent of the role played by the students' secondary school counselor.

**Discussion**

The availability of school counselor is based on the fact that Ministry of Education in Nigeria has directed all secondary schools to implement guidance and counselling programme. In this study, the responses have shown that all their formal secondary schools have established guidance and counselling programmes in the schools and a teacher is assigned as a school counselor.

However, the result revealed lack of effective implementation and functioning of guidance and counseling programme in secondary schools as regard students' career choice. This is because majority of the sampled students disagreed that the school counselors are readily available, accessible, privately counsel students and solve students' problems of personal career decision-making. The results further revealed ineffective implementation and functioning of guidance and counseling program in secondary schools as larger number of the sampled students negatively responded that the school counselors rarely meets the students on assembly, organizes career conference and students also rarely go to school counselor for personal career decision-making. This finding is in agreement with the findings of Nwokolo et al (2010), Fia (2011) and Fox and Butler's (2007) when they asserted that there is low publicity implementation of guidance and counselling services in schools. Also, Setiawan (2006) and Frank (2013) confirm that confidentiality can be a hindrance to access to counselling.

These situations have led to students not making informed and intelligent decision before accepting mathematics as a career. The finding of this study has shown that majority of mathematics students of colleges of education, ignorantly accepted the offer of the admission (mathematics) without knowing the implication of their acceptance. The result as normal experienced as a lecturer in a college of education is that most students are unable to graduate at the right time. Even when they finally graduate, they came out with very low grades and most time they are found unsuitable to be employed as mathematics teacher.

However, the results of this study also revealed that out of the ten (10) roles of the school counsellor presented to students, the respondents agreed that all of the roles of the counsellor are capable of influencing their choice of career. This is because, each of the items' means are above 2.50. These research findings are in agreement with the findings of Rashid, Baker, Asimiran and Tieng (2009) which considered the role of the counsellor as advisory interventions designed to provide direction, resolve impediments, or sustain playfulness in students about their career goals for the future. Also, Niles & Bowsbey (2002) stated that all the intervention roles help people to develop self-awareness, occupational awareness, learn career decision making skills, job search skills, cope with job stress, adjust and implement problem solving skills and make a choice. The intervention roles that were identified in this study to help the students' choice of career was in line with the principles of Krumboltz' (1996) learning theory of career choice which provides a guide for career counsellors as to the kind of assistance they can give to people troubled with career related concerns.

In line with this, the students have shown agreement in the ability of their formal school counsellors to help them make intelligent life career choice. The reason being that the majority of the students considered their school counselor as knowledgeable, transparent and adequately furnished with information respectively to enable him/her help them in making wise decision in their career choice. The findings of this study is similar to the report of Agi (2014) who stated that lack of knowledgeable counsellors lower students' perception about counselor's role. Also, Ogunlade and Akeredolu (2012) and Eliamani, Richard, and Peter, (2014) viewed that informed counsellors impact the decisions of students better

However, despite this apparent faith in the school counsellor to be able to help, the students do not trust their counsellors as they believe that the school counselors may not keep their choice of career as secret. The implication is that the students may not be encouraged to seek career advice from their counselors. That is why Fox and Butler (2007) and Badu (2011) confirmed that bad counselling relationship like, lack of trust worthiness discourage the students decision to seek career advice. Also, respect for the interest of individual choice of career by the counsellor was taken seriously by students as informing whether they involved counsellors in their career choice or not. In this study, more than half of the sampled mathematics students (58%) believed that their school counselors may not consider their interest in their choice of career. The implication is that such students will therefore feel not comfortable in involving counsellors in their career choice since they know they are not important in the eye of the counsellor. As a result, this study has shown lack of dependence on school counselor

by mathematics students in their choice of career in mathematics. Egbo (2015) contention that respect for the unique individuality of counselees is a catalyst for improving counselees' perception of counselors' role which has been validated strongly. Patterson and Levy (2007) stated that effective counselors were those who took a genuine students' interest into consideration.

### **Conclusion**

Although guidance and counselling services are available in most secondary schools, students' frequency of access was not encouraging. However, if students have positive view about the role of counselors in making career choice as indicated in this study, it means that guidance and counseling will flourish in schools; most especially if the school counselors' personality, trust worthiness and professional commitment to their duties become very attractive and convincing.

### **Recommendations**

From the above research findings and conclusions, the following recommendations were proffered:

- Guidance and counselling services should not only be available in schools but that counsellors must routinize their activities to benefit students the more.
- Counsellors and school authorities should cooperate and create the necessary institutional and psychological foundations that enable students find it easier to access professional counselling.
- The location of counselling offices should be encouraging to students to want to seek professional advice.
- Counselors must do well to improve their personality and trust worthiness to woo more students to the counselling centers in schools.
- Frequent intervention programmes need to be organized for students in order for them to make well informed choices.
- There is need for the teacher counsellors to implement all the services required for a guidance and counselling programme.

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- School counselors should take advantage of the positive perception of the students about their roles to enhance career counseling in schools.
- Guidance and counselling programme should be strengthened by minimizing the challenges facing the programme in order to improve informed career decision-making by school students.

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