



Career Aspiration, Family Environment and Cultural Factors: Influence on Senior Secondary Achievement in Chemistry in Rivers State

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ABSTRACT

The study identifies career aspiration, family environment and cultural factors as non-cognitive factors that may be influencing academic achievement in a core science subject like chemistry. The study is therefore set to determine the influence of career aspiration, family environment and cultural factors on academic achievement in chemistry. The study is a survey and a sample of 300 senior secondary school students were selected from the three senatorial district of Rivers State using the multi-stage sampling techniques. Three valid and reliable instrument were used for data collection and they are; Student Career Aspiration Questionnaire (SCAQ), Student Family Environment and Cultural Factors Questionnaire (SFECFQ) and Chemistry Achievement Test (CAT). Four research questions were raised and answered in this study. Data were analyzed using appropriate statistical tool. The result revealed that all the independent variables were correlated to the chemistry achievement test in chemistry. The finding also reveals that the three predictor variables jointly correlates student achievement in chemistry. Based on the findings of the study, it was recommended students should be allowed to pursue careers in area they can perform better and harmful cultural belief and superstition should not be allowed to influence the study of chemistry.

Keywords: Career aspiration, Family Environment, Cultural Factors and Senior Secondary Achievement

INTRODUCTION

Education is often seen world-wide as a vehicular instrument for social, economic, political, scientific and technological, development. Nigeria cannot shy away from this and remain stagnant in spite of the dynamism of the field of education. The children, youth and even adult in the country cannot fold their arms and watch the rest of the world dominate and interplay in all human endeavors, including job competition and mobility of individuals in the global market as well as the development of the nation. In recent years, growing body of empirical findings has attested to the relevance-of career exploration, awareness, aspirations/expectations and interests during childhood (Conroy, 1997). It has been observed that from childhood, young people make choices that influence whether their potentialities are cultivated or remain untapped.

Traditional theories of career development propose that career aspirations develop in specific stages from childhood to adulthood. Career aspirations thus represent an individual's orientation towards a desired career goal under ideal conditions. According to Silvia (2001), aspirations refer to an

individual's expressed career related goals or intentions and also include motivational components which are not present in mere interests. Aspirations are especially important because they allow children to evaluate the degree to which various choices help or hinder their chances of attaining desired goals as they increase in age and develop their cognitive ability. Skorikov (2007) found that career preparation is an important precursor for successful career development across the life span and is closely related to adolescence adjustment and well-being.

Aspirations begin to be shaped early in a child's life, but are modified by experience and the environment. Thus, the notion of aspiration can be vague, from dreams and fantasies to concrete ambitions and goals. So from childhood, young people need easy access to advice and guidance and the involvement of professionals or Volunteers for example, in a mentoring role when necessary. Involvement in positive activities also provides important socialising experiences that encourage high aspirations. It is therefore important, to understand further factors that determine children's career aspirations in order that parents, teachers and professionals involved in the lives of these children, provide support and guide them at different points in time for them to be alive to their career aspiration.

Aspirations do not exist in isolation but rather occur within a cultural context. Individuals draw their aspirations from the lives of others around them. In this way, individuals have aspiration window through which they view the possibilities that exist within their social space (Ray, 2006). Their window is usually based on the opportunities available to them in their communities using their peers as means of comparison. In light of this fact, this study is conceptualized within theories that more readily recognise the influence of contextual factors. Previous researchers found that there are many factors influencing student's career aspirations including family factors, teacher, peer, school environment, socio-economic status, socialisation and students factors.

The family is the primary social system for children. Family environment variables in this study include parental education, family psychological environment (parental occupation, parenting style, family- socio-economic status, religiosity, parental beliefs) mid family size which can influence parents' career aspiration and academic achievement for their children. And researchers have attempted to understand the variables that influence - students' academic achievement (e.g. family, level of parental education, school, peers, personality and socioeconomic status). Research indicates that parents are active agents in influencing their children's career development (Kempa & Diaz, 1990). For example, children choose career that match their parents' expectations or that correspond with the kind of the mother's occupation. Identification with parents' occupations or their aspiration for the children is particularly strong ' among young and rural elementary school children (Trice, 1995).

Parents are influential figures with whom, whether intentionally or unintentionally, children become aware of and get exposed to occupations or career opportunities and implied expectations.

However, there were varying opinions and findings to which specific family characteristics influence academic achievement in science. For instance, conflicting data exist regarding the influence of socio economic variables (Mau *et al*, 2000) posited that both parents' education and income influence career aspirations, whereas, Hossler & Stage, (1992) indicated only parents' education as an influence. Other family variables to have shown influence of academic performance include the parents' occupation (Trice, 1991) and family size (Downey, 1995)

Culture is a set of shared attitudes, values, goals, and practices that characterizes an institution, organisation or group. Culture also includes beliefs and behaviour and it forms the attitude of members in every given society. Zuga (2000), claimed that, in a complex and pluralise Nigerian culture, some traditional practices, beliefs and custom or values, are bound to influence students' attitude and behaviours in school and academic achievement

Also, Zumve (2009), reports that the cultural and superstitious belief among students in some parts, of the country influence their academic achievement. Indeed, the cultural practice and religious belief in northern Nigeria influence students to use weapons and charms in examination hall. According to Zumve (2009), some people are culturally bound from standardize public examinations. This belief gives students opportunity to smuggle foreign materials into examination hall.

Wadeh (2010), in his study on the causes of poor performance in Biology among secondary school students in Makurdi metropolis, discovered that 41 % does not take active participation in some practical Biology lessons because it is culturally prohibited to touch some animals and plants. The study revealed that such dogma affects their learning ability in the subject. This means that, for these students to pass the subject in WAEC, they may indulge in examination malpractice.

It is in this vein that the study seeks to find out to what extent career aspiration, family background and cultural factors influence academic achievement in senior secondary school chemistry in Rivers State.

Statement of the problem

The crisis of underachievement of student in chemistry has been a major issue that has bedevils the effective study of the course at secondary school level. Series of researches had been conducted on the likely causes but still no conclusive outcome has been achieved. However, it has been observed that students' career aspiration, family environment and cultural factors could influence their achievement in chemistry.

This study therefore, investigated the influence of career aspiration family environment and cultural factors on achievement in chemistry at the senior secondary school.

Research Questions

The study aimed at answering the following research questions.

1. To what extent do career aspiration influence students' academic achievement in chemistry at the senior secondary school?
2. To what extent do family environment influence students' academic achievement in chemistry at the senior secondary school?
3. To what extent do cultural factors influence students' academic achievement in chemistry at the senior secondary school?
4. What is composite contribution of career aspiration, family environment and cultural factors on academic achievement in chemistry at the senior secondary school?

METHODOLOGY

Research design

The study is a survey research.

The variables

The independent variables are career aspiration, family environment and cultural factors. The dependent variable is the academic achievement in chemistry.

Population, sampling procedures and sample

The target population for the study comprises all senior secondary school students across the three senatorial zones of Rivers State. All the senior secondary school students from both public and private school constituted the target population for the study. The study employed multi-stage sampling technique in selection of location governments, school and respondents as representative in the study. The schools were selected from three local government areas across the three senatorial zones using sample random sampling techniques.

From the three local government areas selected, twelve (12) schools (4 schools from each local government area) were purposively selected. 25 respondents were selected from each of the 12 selected making 300 samples.

Instrumentations

The following instruments were used in the study

Student career Aspiration Questionnaire (SCAQ) Adams (1997)

The (SCAQ) was adapted from Career Decision Scale developed. It is a 20 item scale, consisting of two section A and B. section A consists of the student bio data while section B is a Likert scale consisting 20 items designed to elicit information on the preferential treatment given to the students by their teacher. The SCAQ was validated and the reliability index was 0.861 Cronbach alpha.

Student Family Environment and Cultural Factors Questionnaire (SFECFQ)

The (SFECFQ) was developed by the researcher. It consists of 30 items scale. Section A consists of the student bio-data while section B is a likert scale consisting of 30 items designed to elicit information on student family environment and cultural factor questions. The instrumentation was subjected to Cronbach’s alpha reliability estimate thereby giving reliability co-efficient of 0.912.

Chemistry Achievement Test (CAT)

This comprises of 25 item object test adopted from past WASCE and GCE objective for the past 3 years. The instrument was revalidated by the researcher using test-retest method, a reliability of 0.931 was obtained

Method of Data Collection and Analysis

Data for the study was collected by the researcher, assisted by two research assistants who were trained on the use of the instruments. The researcher handled the administration of the instrument in one senatorial zone while the remaining senatorial zone was administered by the two research assistants.

Analysis of data was done using correlation, t-test, chi-square and multiple regression.

RESULTS

Research Question 1: *To what extent does career aspiration influence student achievement in chemistry at the senior secondary school?*

Table I: Relationship between career aspiration and students’ academic achievement in chemistry

Variables	N	Df	r-cal value	r-critical value	Level of Sig	Remark
Career aspiration Students’ academic achievement	300	296	0.249	0.126	<0.05	Significant

Table I: Shows that the r-calculated value of 0.249 is greater than the r-critical values of 0.126 at 0.05 level of significant. Hence, there is a positive relationship between career aspiration and students’ academic achievement in chemistry.

Research Question 2: *To what extent does family environment influence students' academic achievement in chemistry at the senior secondary school?*

Table 2: Relationship between family environment and students' academic achievement in chemistry

Variables	N	Df	r-cal value	r-critical value	Level of Sig	Remark
Family environment Students' academic achievement	300	297	0.271	0.133	<0.05	Significant

Table 2 shows that the r-calculator value of 0.271 is greater than the r-critical value of 0.133 at 0.05 level of significant. Hence there is a positive relationship between family environment and academic achievement in chemistry.

Research Question 3: *To what extent does cultural factors influence student academic achievement in chemistry at the senior secondary school?*

Table 3: Relationship between cultural factors and academic achievement in chemistry

Variables	N	Df	r-cal value	R critical value	Level of Sig	Remark
Cultural factors Students' academic achievement	300	298	0.271	0.133	<0.05	Significant

Table 3 shows the r-calculated value of 0.136 is less than the r-critical value of 0.233 at 0.05 level of significant. Hence, there is a negative relationship between cultural factors and academic achievement in chemistry.

Research Question 4: *What is the composite effect of career aspiration, family environment and cultural factors students' academic Achievement?*

Table 4: Regression of career aspiration, family environment and cultural factors on students achievement in chemistry

Model		Sum of Square	Df	Mean Square	F	Sig
	Regression	12457.730	3		36.365	.000
	Residual	22141.161	431			
	Total	34598.891	434			

R = .531

R Square=.270

Adjusted R Square =.253

Table 4 shows that there is significant statistical effect between career aspiration, family environment and cultural factors on students' achievement in chemistry. The Adjusted R Square = 0.253 which implied that 25.3% of the variance in the students' achievement in chemistry can be attributed to the combined effect of the three independent variables. These findings indicate that

there is a positive composite effect of career aspiration, family environment and cultural factors students' achievement in chemistry.

DISCUSSIONS

The first result shows that career aspiration determines academic achievement in chemistry. It collaborated the finding of Solomon (1986), Aghadiuno (1995) and Salami (1998) who in their separate studies found out that most of the secondary school students preferred high status (prestigious and high salary occupations) male and female students had been found to differ significantly in their interests in the following areas-outdoor, mechanical, literary, musical and clerical (Salami, 1998). In a separate studies, Osokoya (2010) reported that male students were found to be more interested in scientific, computational, persuasive, literacy, mechanical profession in that order regardless of their academic capability. They were found to indicate low interest in the area of clerical social service, outdoor and artistic in that order.

This could imply that student's achievement in chemistry could therefore be linked to a direct function of their future career aspiration. In order words, students are offering and studying chemistry not because of their peculiar interest in the subject but for what they can make out of it.

However, this contradict the findings of Abe (1995) who found out that locus of control, career aspiration and test anxiety did not have significant contribution to the prediction of achievement basic sciences. Kempa and Diaz (1990) however, while investigating the influence of students' teachers and school variable on science achievement using a set of Kenyan secondary school. Students found out a strong relationship between career aspiration and science achievement.

The second results show that family psychological environment significantly determines achievement in chemistry. It further revealed that children with large family size but good texts, motivation will have good academic achievement but if the child has a large family size but poor family psychological environment and if the child does not have textbooks and motivation, he will perform badly academic achievement.

Research had continuously demonstrated that parents have been the largest influence on their children, typical the main source of motivation in the area of academic achievement.

The next result revealed that cultural factors show a negative significant relationship with academic achievement in chemistry. These factors which includes gender discrimination, traditional occupation, chieftaincy affairs, superstitious and tradition believe system make student prepare less for public examination. This is in consonance with the finding of Wadeh (2010) who is his study of the causes of poor performance in Biology in Benue state reported cultural practices prohibit the touching of some plant and animals.

Moreso, the study revealed that when career/aspiration, family environment and cultural factors are combined, they contributed significantly to academic achievement in senior secondary school chemistry. This result also confirms finds out career aspiration and cultural factors influence academic achievement in secondary school subject.

CONCLUSION

Based on the findings of this study, career aspiration is attributed to social factors such as prestige esteem, social status, employment opportunities and monetary rewards. The family environment which includes family size, family psychological environment and parental education significantly predicts achievement in chemistry. The cultural beliefs, value and practice of people influence academic performance. Therefore, it important to encourage academic achievement in senior school chemistry in Nigeria, career aspiration, family environment and cultural factors should be properly addressed for effective teaching and learning of chemistry.

RECOMMENDATIONS

1. Guidance counsellors in the school system should endeavor to consider the sex of the students in their effort to motivate and effectively monitor students' progress to their aspired careers.
2. Schools administrator should know that children career aspiration will be greatly influenced if there is good rapport in the school setting, therefore provide avenues of good interpersonal relationship.
3. Explore ways that vital familiar, social, cultural and other contextual phenomena may affect the unique career development issues.
4. Government should make secondary education free and compulsory for students across the country. This may help students from poor family background not to take up some traditional occupations as a mean to survive in school.
5. School administrator should frequently supervise, inspect and monitor classroom teachers to ensure that teachers attend their lesson and use appropriate teaching methods for instructional delivery

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