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Influence of Science Education on the Choice of Entrepreneurial Skills Among Undergraduates of Universities in Ekiti State, Nigeria

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Abstract

The study examined the influence of science education on the choice of entrepreneurial skills among undergraduates of Universities in Ekiti State. The descriptive research of the survey type was adopted in this study. The population for the study comprised all undergraduates of Science Education department in public universities in Ekiti State. The sample consisted of 300 respondents drawn from Science Education Department in two universities in Ekiti State. The sample was selected using multi-stage sampling procedure. The research instrument for this study was a self-designed questionnaire titled "Science Education and Choice of Entrepreneurial Skill Questionnaire" (SECESQ). The instrument for the study was validated by experts in the area of Tests and Measurement and Science Education. The reliability of the instrument was determined through test re-test method. A co-efficient of 0.83 was obtained and this is considered high enough to make the instrument reliable and useful for the study. The data collected through the instruments were analyzed using descriptive and inferential statistics. The study revealed that the level of undergraduates' choices of entrepreneurial skills among science education students in Universities in Ekiti State was moderate. Also, science education was beneficial to undergraduates' choice of entrepreneurial skill in Universities. It was recommended among

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others that Science Education students should be encouraged to exhibit positive attitude towards entrepreneurial skills. Also, courses on entrepreneurship studies should be incorporated into Science Education curriculum content by National University Commission.

Keywords: Science Education, Choice, Entrepreneurial Skills, Undergraduates,

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Introduction

The level of graduate unemployment in Nigeria has determinedly been on the rise despite the vast endowment of the country with natural and human resources. However, graduate unemployment is not unusual to Nigeria or developing nations; it is indeed an elongated standing global phenomenon hence it has been a common trend in many countries to see graduates of universities not able to get jobs several years after graduation (Twumasi, 2013). Unemployment has become one of the most current and thorny concerns in contemporary Nigeria. The unemployment circumstance has changed from previous situation marked by extended period of unemployment, to one in which graduates of higher institutions have to usually wait for a protracted time before getting a job, if at all.

The inability of the government of Nigeria to make available job opportunities, or train youths with self-sustaining capacities affect the youth to engage in forms of restiveness ranging from prostitution, drug use and drug abuse, ethnic violence, alcoholic, gangsterism, school dropouts, among others (Chiapaka , 2012). As it is said, an idle mind is the devil workshop. In order to arrest this unemployment, there is the need for the advancement of a form of education that endows, equip and provide the youth, with all-inclusive knowledge that would enable them contribute positively in the development of the nation's economy through collective responsibilities, personal development and communal approach. Youth unemployment has been ascribed partly to a disparity between inadequate educational and skill demands.

In recognition of the significance of the role of entrepreneurship in economic growth and development of a nation, most countries are now shifting interest on promoting Entrepreneurship Education (EE), both formal, that is inside school (Entrepreneurship Education) and informal, that is outside school (apprenticeship) as a tactic to solve the problems of unemployment, underdevelopment, high level poverty and other social problems in the economy (Fayolle & Gailly, 2008).

Entrepreneurship can be defined as the capability to generate something new with value by dedicating the required time and effort, assuming the associated financial, psychic and social risks, and getting the resulting rewards of monetary and personal satisfaction (Hisrich & Peters, 2002). Entrepreneurship is the capability of an individual to exploit an idea and form an enterprise, not only for personal benefit but also for socio-economic developmental benefit (Olagunju, 2004).

Entrepreneurship education at University level might have a positive influence in attitudes towards entrepreneurship, and in turn it might encourage entrepreneurship as a useful career for graduates. The growing importance of entrepreneurship education and its capability to contribute to economic development and job prospects have motivated many Universities to offer entrepreneurship education. It is therefore necessary for every undergraduate to have some idea and knowledge of a business enterprise (Essien, 2006; Jimah, Jimah & Onuwka, 2010).

Science education and entrepreneurship are practical oriented in nature that delivers the much desired skills for employment. Probably, the introduction of entrepreneurship training in many fields will expand the employment chances of its receiver. The prospect of this new orientation predicts who is most liable to undertake employment either as an employee or in personal business after higher education (Inegbenebor, 2007). The relative significance of entrepreneurship education to science students cannot be overstressed; for instance, it improves and enhances their career success, makes them comprehend the ethics

of business practices, puts their original inspiration and creativity into real life situation (Jones & English, 2004).

Acquisition of experiences in science therefore has the potency to refine the students' ideas, thoughts and capabilities thereby increasing their preparedness and operational efficiencies to embrace entrepreneurial skills upon graduation and be able to tackle the increasing unemployment and economic challenges. Graduates of science education are expected to choose entrepreneurial skills that are activities based. A student that is not adequately prepared with basic scientific skills may not be interested in entrepreneurial skills that are activities based. Therefore, this study was carried out to examine the influence of science education on the choice of entrepreneurial skills of undergraduates Universities in the Ekiti State.

The purpose of this study was to examine the influence of science education on the choice of entrepreneurial skills among undergraduates of Universities in Ekiti State. Specifically, the study examined:

1. the benefits of science education to undergraduates' choice of entrepreneurial skill in Universities in Ekiti State;
2. the level of undergraduates' choices of entrepreneurial skills among science education students in Universities;
3. the relationship between benefit of science education and undergraduates' choice of entrepreneurial skills in universities; and
4. the influence of undergraduates' course of study in science education, level and gender on their choice of entrepreneurial skills.

Research Questions

The following research questions were raised to guide the study:

1. What are the benefits of science education to undergraduates' choice of entrepreneurial skill in Universities in Ekiti State?
2. What is the level of undergraduates' choices of entrepreneurial skills among science education students in Universities in Ekiti State?

Research Hypotheses

The following null hypotheses were generated for this study:

1. There is no significant relationship between benefit of science education and undergraduates' choice of entrepreneurial skills in universities in Ekiti State.
2. Benefit of science education will not significantly predict undergraduates' choice of entrepreneurial skills in universities in Ekiti State

Methodology

The descriptive research of the survey type was adopted in this study. The population for the study comprised all undergraduates of Science Education department in public universities in Ekiti State. The universities are Federal University Oye-Ekiti and Ekiti State University, Ado-Ekiti. The sample consisted of 300 respondents drawn from Science Education Department in two universities in Ekiti State. The sample was selected using multi-stage sampling procedure. In stage one, two universities were selected from the three universities in Ekiti State through simple random sampling technique. In stage two, Science Education Department was purposively selected from each of the universities. In stage three, 150 students were selected from each department using stratified random sampling technique.

The research instrument used for data collection was a questionnaire designed by the researcher, titled "Science Education and Choice of Entrepreneurial Skill Questionnaire" (SECESQ). The questionnaire consisted of three sections namely Section A, B and C. Section A sought for the demographic information of the respondents while section B consisted of 15 items focusing on the choice of entrepreneurial skills among undergraduates and section C consisted of 10 items on benefits of Science Education. Likert 4 point rating scale was used for section B and section C of the instrument as follows: Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2 and Strongly Disagree (SD) = 1.

The instrument for the study was validated by experts in the area of Tests and Measurement and Science Education. The experts determined its face and content validity to ensure the appropriateness of the instrument. The reliability of the instrument was determined through test re-test method. The instrument was administered in a university which was not part of the sample, though the university shared similar characteristics with the sampled universities. The instrument was administered on 30 respondents twice within an interval of two weeks. The data collected on the two administrations were collated and analyzed using the Pearson's Product Moment Correlation analysis. A co-efficient of 0.83 was obtained and this is considered high enough to make the instrument reliable and useful for the study.

The data collected through the instruments were analyzed using descriptive and inferential statistics. The research questions were answered using frequency counts, means, standard deviation and percentages. Hypothesis 1 was tested using Pearson's Product Moment Correlation Statistics while hypothesis 2 was tested using Linear Regression Analysis at 0.05 level of significance.

Results

Descriptive Analysis

Research Question 1: What are the benefits of science education to undergraduates' choice of entrepreneurial skill in Universities in Ekiti State?

Table 1: Descriptive analysis of benefits of science education

S/N	Items Science Education:	N	Agree (%)	Disagree (%)	Mean	S.D	Decision
1.	empowers undergraduates in the acquisition of various skills and attitude for national development	300	178 (59.3%)	122 (40.7%)	2.65	0.59	Agreed
2.	helps in identifying potentials and selection of career preference for self-employment	300	127 (42.3%)	173 (57.7%)	2.39	0.67	Disagreed
3.	helps in learning the process of evaluating opportunities properly for acquiring entrepreneurial skill	300	178 (59.3%)	122 (40.7%)	2.65	0.59	Agreed
4.	helps in developing entrepreneurial ideas and desire to achieve goal oriented leadership	300	255 (85.0%)	45 (15.0%)	3.04	0.71	Agreed
5.	helps in understanding the entrepreneurial approach for acquiring resources effectively for the success of small-scale businesses	300	286 (95.3%)	14 (4.7%)	3.25	0.44	Agreed

6.	helps in understanding the entrepreneurial approach for managing resources effectively for the success of small-scale businesses	300	178 (59.3%)	122 (40.7%)	2.65	0.59	Agreed
7.	helps in getting adequate practical and theoretical oriented education	300	287 (95.7%)	13 (4.3%)	3.25	0.44	Agreed
8.	helps in acquiring entrepreneurial skills which will enable beneficiaries live a meaningful life	300	263 (87.7%)	37 (12.3%)	3.06	0.24	Agreed
9.	provides knowledge in financing business and organisation	300	259 (86.3%)	41 (13.7%)	3.05	0.22	Agreed
10.	helps in acquiring entrepreneurial skills needed for national development	300	169 (56.3%)	131 (43.7%)	2.56	0.50	Agreed
	Mean Average				**2.86**		

Mean Cut-off: 2.50

Table 1 revealed the benefits of science education to undergraduates' choice of entrepreneurial skill in Universities in Ekiti State. Based on the mean cut-off mark of 2.50, majority of the respondents agreed to all the 10 items raised since the mean mark of each of the items was greater than mean cut-off of 2.50 except for item 2 which mean mark was less than the mean cut-off. The mean average of the 20 items is 2.86 which was greater than the mean cut-off. The mean average shows that science education is beneficial to undergraduates' choice of entrepreneurial skill in Universities.

Research Question 2: What is the level of undergraduates' choices of entrepreneurial skills among science education students in Universities in Ekiti State?

In analyzing the question, respondents' scores on choices of entrepreneurial skills were used. Frequency counts, percentages, mean and standard deviation score were used to illustrate the responses to items 1 – 15 in section C of SECESQ. To determine the level of choices of entrepreneurial skills (low, moderate and high), the mean score and standard deviation of the responses were used. The low level was determined by subtracting the standard deviation from the mean score (40.41 – 3.66 = 36.75). The moderate level of choices of entrepreneurial skills was determined by the mean score (40.41) while the high level of choices of entrepreneurial skills was determined by adding the mean score and standard deviation (40.41 + 3.66 = 44.07). Therefore, low level of choices of entrepreneurial skills starts from 15.00 to 36.75, the moderate level starts from 36.76 to 44.06 and the high level of choices of entrepreneurial skills is from 44.07 to 60.00. The level of undergraduates' choices of entrepreneurial skills among science education students in Universities in Ekiti State is presented in table 2b while the mean analysis of individual items was presented in table 2a.

Table 2a: Mean analysis of undergraduates' choices of entrepreneurial skills

S/N	Items	N	Mean	S.D	Decision
1.	I have interest in technical skill	300	2.30	0.63	Disagreed
2.	I make use of the technical skill in my day to day activities	300	2.35	0.63	Disagreed
3.	I render services to others based on my technical skill	300	2.62	0.73	Agreed
4.	My technical skill is a good source of self-employment for me	300	2.62	0.74	Agreed
5.	I can easily transfer my technical skill knowledge to others	300	2.35	0.63	Disagreed

6.	I am interested in the operation of small scale enterprise	300	2.82	0.74	Agreed
7.	I am interested in starting a business from the lowest level	300	2.40	0.64	Disagreed
8.	I have the courage to take risk in investing in business	300	3.02	0.79	Agreed
9.	I already have a personal business I am currently running	300	2.82	0.91	Agreed
10.	I am interested in going into full business after graduation	300	2.62	0.57	Agreed
11.	I have adequate knowledge of at least one form of agricultural business	300	2.65	0.59	Agreed
12.	I have much interest in Agriculture	300	2.97	0.82	Agreed
13.	I am currently involved in agro-based business	300	2.65	0.59	Agreed
14.	I am eager to acquire agro-vocational skill	300	3.13	0.71	Agreed
15.	I am certain I could get my source of living through entrepreneurial skill	300	3.09	0.73	Agreed
	Mean Average		**2.69**		

Mean Cut-off: 2.50

Table 2b: Level of undergraduates' choices of entrepreneurial skills

Level of undergraduates' choices of entrepreneurial skills	**No of Respondents**	**Percentage**
Low (15.00 – 36.75)	33	11.0
Moderate (36.76 – 44.06)	229	76.3
High (44.07 – 60.00)	38	12.7
Total	**300**	**100**

Table 2a revealed the mean analysis of the level of undergraduates' choices of entrepreneurial skills while Table 2b revealed the level of undergraduates' choices of entrepreneurial skills among science education students in Universities in Ekiti State. The result showed that out of 300 respondents, 33 respondents representing 11.0 percent had low level of choices of entrepreneurial skills. Those who had moderate level of choices of entrepreneurial skills were 229 respondents representing 76.3 percent while 38 respondents representing 12.7 percent had high level of choices of entrepreneurial skills. This showed that the level of undergraduates' choices of entrepreneurial skills among science education students in Universities in Ekiti State is moderate. Figure i further revealed the level of choices of entrepreneurial skills.

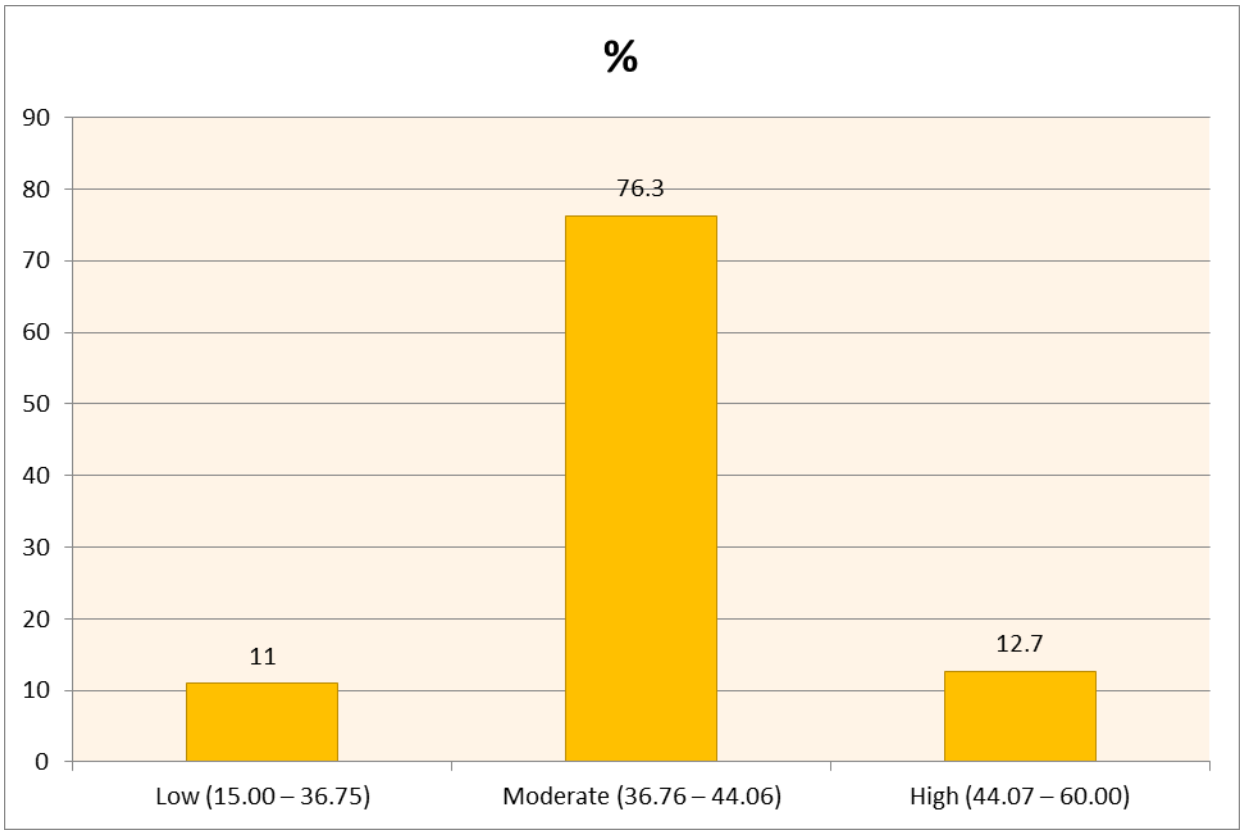

Figure i: Bar chart showing the level of undergraduates' choices of entrepreneurial skills among science education students

Testing of Hypotheses

Hypothesis 1: There is no significant relationship between benefit of science education and undergraduates' choice of entrepreneurial skills in universities in Ekiti State

In testing this hypothesis, data on benefit of science education were collected from the responses of the respondents to items under Section C of SECESQ (item 1 – 10) in the questionnaire. Data on choice of entrepreneurial skills were collected from the responses of the respondents to items under Section B of SECESQ (item 1 – 15) in the questionnaire. Both were compared for statistical significance using Pearson Product Moment Correlation at 0.05 level of significance. The result is presented in table 3.

Table 3: Relationship between benefit of science education and undergraduates' choice of entrepreneurial skills

Variables	N	Mean	Stand Dev	r-cal	Sig.
Benefit of Science Education	300	28.56	2.14	0.336*	0.000
Choice of Entrepreneurial Skills	300	40.41	3.66		

*P<0.05

Table 3 showed that r-cal value of 0.336 is significant because the P value (0.00) < 0.05. The null hypothesis is rejected. This implies that there is significant relationship between benefit of science education and undergraduates' choice of entrepreneurial skills in universities in Ekiti State. Hence, benefit of science education is positively and moderately related to undergraduates' choice of entrepreneurial skills in universities.

Hypothesis 2: Benefit of science education will not significantly predict undergraduates' choice of entrepreneurial skills in universities in Ekiti State.

In testing this hypothesis, data on benefit of science education were collected from the responses of the respondents to items under Section C of SECESQ (item 1 – 10) in the questionnaire. Data on choice of entrepreneurial skills were collected from the responses of the respondents to items under Section B of SECESQ (item 1 – 15) in the questionnaire. Both were compared for statistical significance using Simple Regression Analysis at 0.05 level of significance. The result is presented in table 4.

Table 4: Simple regression analysis between benefit of science education and undergraduates' choice of entrepreneurial skills

	Unstandardized Coefficients		**Stand. Coefficients**				
Variables	**(B)**	**Std Error**	**(Beta)**	**t- Stat.**	**R**	**R^2**	**F**
Constant	24.041	2.670	-	9.005			
Benefit of Science Education	0.573	0.093	0.336	6.149	0.336	0.113	37.813

In table 4, the calculated F-value of 37.813 is significant at P<0.05, therefore the null hypothesis is rejected. It implies that benefit of science education significantly predicted undergraduates' choice of entrepreneurial skills in universities in Ekiti State. The result of the analysis shown in Table 4 indicated the predictors accounted for 11.3 percent of the undergraduates' choice of entrepreneurial skills (R^2 = 0.113). It contributed 33.6% to the criterion variable in predicting undergraduates' choice of entrepreneurial skills.

The regression equation derivable from table 4 is Y= 24.041 + 0.573X

where:

Y = Undergraduates' Choice of Entrepreneurial Skills

X = Benefit of Science Education

Discussion

The findings revealed that level of undergraduates' choices of entrepreneurial skills among science education students in Universities in Ekiti State was moderate. The probable reason could be as a result of the benefit of science education which has been recognized as a pre-requisite in technological development. In consonance with this finding, Agbogidi (2007) and Garba (2010) concluded that level of choices of entrepreneurial skills among students was moderate.

It was also revealed that there was significant relationship between benefit of science education and undergraduates' choice of entrepreneurial skills in universities in Ekiti State. The probable reason for this finding could be because science education improves one's knowledge about environment and development of one's skill of systematic inquiry as well as natural attitudinal characteristic. Cheng, Chan and Mahmood (2009) and Agu, Chiaha, and Ikeme (2013) concluded that entrepreneurial skills must be nurtured through proper science education. The implication of this finding is that the more the benefit of science education, the more the improvement in undergraduates' choice of entrepreneurial skills.

Summary of Findings

i. Science education was beneficial to undergraduates' choice of entrepreneurial skill in Universities

ii. Level of undergraduates' choices of entrepreneurial skills among science education students in Universities in Ekiti State was moderate

iii. There was significant relationship between benefit of science education and undergraduates' choice of entrepreneurial skills in universities in Ekiti State.

iv. Benefit of science education significantly predicted undergraduates' choice of entrepreneurial skills in universities in Ekiti State

Conclusion

Sequel to the findings of this study, it was concluded that level of undergraduates' choices of entrepreneurial skills among science education students in Universities in Ekiti State was moderate. Also, science education was helpful to undergraduates' choice of entrepreneurial skill in Universities.

Recommendations

Based on the findings of this study, the following recommendations were made.

1. Science Education students should be encouraged to exhibit positive attitude towards entrepreneurial skills.
2. Scientific approach should be embedded into entrepreneurial skills exposed to Science Education students in Universities.
3. Courses on entrepreneurship studies should be incorporated into Science Education curriculum content by National University Commission.

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