

Measures for Improving the Acquisition of Entrepreneurial Skills in Technology Education by the Polytechnic Students in the South-South States in Nigeria

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Abstract

The study sought to identify measures for improving the acquisition of entrepreneurship skills in technology education by the polytechnic students in the south-south states. Structured questionnaire was the instrument used to collect data from the respondents. The population for the study comprised 35 teachers of technology; the sampling technique was of "convenience type". Data were analyzed through the use of mean and standard deviation while Analysis of variance (ANOVA) was used to test the hypotheses at 0.05 level of significance. The findings of the study revealed that entrepreneurship skills, creative, business techniques were needed in technology education. It was therefore recommended that graduates of technology education should be dedicated to creating a society as their future and fortune would be determined by their abilities and dedication to entrepreneurship skills.

Keywords: *Entrepreneurship, Technology education, South- South States, Nigeria*

Introduction

Today's increasingly competitive business environment, shortened product life cycle, global competition, increased market segmentation and re-structured industry creates a unique educational opportunity for students to get a targeted skills for self employment. The Federal Government of Nigeria being aware of the need for technology based environment among the Nigerian citizenry designed Polytechnic to train people who can apply scientific knowledge to solve environmental problems for the convenience of man. Hence they produce mainly middle-level technical workforce for various sector of the economy (Okerie, 2000). In consonance with the objectives of Polytechnic programme in Nigeria, there is need for quality of instruction at all level of education especially to be oriented towards the training and impartation of the necessary skills to individual who shall be self-reliance economically. This implies that the training environment should provide a total transformation of students from a relatively less sophisticated, less mature to a more experience and less dependent student. According to Olowe (2008) teachers of technology at Polytechnic level over the years trained graduates for employment in particular occupation or clusters of occupation. This makes Polytechnic education a unique level of education which equipped students with marketable skills needed for entry into the world of work as employees or as self-employed. Bar-yam, Rhoades, and Sweeny (2000) asserted that the key insight from a

complex demanding environment is to improve methodology in Polytechnic education through transmitting knowledge with entrepreneurship goal which emphasizes the development of the individual student for self employment.

However, United Nation Educational Scientific and Cultural Organization (UNESCO) with the International Labour Organization (ILO) in (2006) agreed that the immense scientific, technological and socio-economic development as envisaged within the present era should be given globalization and entrepreneurship education such that Polytechnic education will continue to gear toward life-long education. Globalization according to Thakur (2006) is a mark of paradigm shift in both economic/educational thinking. One often hears "The world is a global village" thanks to narrowing down the geographical distances and barrier in thinking pattern between developed and developing countries. Globalization from the technological perspective is the fast and significant technological process in the field of communication, which has permitted entrepreneur to have access and exchange of information at anytime and from any place in the world

Entrepreneurship could be said to be the process of producing something new, with value by devoting the necessary time, effort with social risk and resulting reward of monetary and personnel satisfaction and independence. Obeta (2006) ascertained that entrepreneurship education is the art of organizing a business opportunity, mobilizing resources and persisting to exploiting that opportunity. As ascertained by Baldwin (2002) entrepreneurship training is rapidly expanding and drives job creation with economic growth through accelerating innovation and promoting the full use of human, financial and other resources. The ability to run a business has been identified as important in checking graduate unemployment and self-reliance. For this reason all technology curricular should include entrepreneurship education. The objectives of entrepreneurship education according to Paul (2005) in Obeta (2006) are to:-

- Provide meaningful education for the youth to be self-reliance and encourage them to derive profit and be self employed.
- Provide graduates with enough skills that will make them to be creative and innovative in identifying new business opportunities.
- Provide graduate with enough training in risk management to make uncertainty bearing more possible and easy.
- Give young graduate training to establish a career in small and medium sized business.
- Provide graduate with training in skills that will enable them meet the manpower need of the society.
- Stimulate industrial and economic growth of rural and less developed areas.

In addition to these objectives, Baldwin (2002) asserted that there is an array of entrepreneurial skills for students to be self-reliance. These are:-

Marketing skills: - This involves thinking how to reach the targeted audience for product and services. This entails understanding what people wants, listening to the people's need and interacting well with other people.

Financial Resource skills: - This is the ability to handle money well. This includes knowing how to stretch the limited start-up capital that you have, spending only when needed, identifying the best pricing structure for your business in order to get the best return for your products and services.

Self-Motivation skills: - This involves the ability to be self confident with extra drive and commitment to make sure that you are taking the necessary steps to make your dreams of a successful business a reality. An entrepreneur must be able to focus energy and hard work toward each and every step that will make an enterprise a success.

Time Management Skills: - This involves the ability to plan and manage time with a clear idea of the things to be done in a day. The entrepreneur should have the ability to multi-task and prioritize the day's task.

Administrative Skills: - This involves skills in filling, billing, printing, invoices, collecting, payment, and managing receivables. The entrepreneur contributes his initiative, skills and ingenuity in planning, organizing, and administrating the enterprise.

Innovative Skills: - This is the act of introducing something new. This involves the integration and accumulation of new knowledge; casting a wider net for the discovery of potential opportunities.

Professional Skills: - These are necessary for success in a business. This is obtained in a cooperate arrangement between the school and the industries. This involves code of conduct, customer's care technique and opportunity recognition.

Practical Skills:-These skills involve the use of tools and equipment to transform materials into product and services. The practical skills provide the students with occupational abilities to ensure self-employment.

Entrepreneurship helps to prepare students to enter the business world with the knowledge and application of balance sheet, income statement, discount cash flow, capital budgeting, opportunity recognition, market segmentation, target market, sales, business planning, public speaking, team work and leadership (Hisrich, Peters, Shepherd, 2008). The starting point of any successful new venture is the basic idea that can be generated internally or externally through various techniques such as creative and business techniques. Creative technique according to Hisrich et-al (2008) is a method of obtaining new ideas, focusing on certain parameter. This is all about trying some techniques with a few colleagues. By practicing creative technique and attitudes, students will gain confidence and skills to build a company. Other creative techniques that allow generation of ideas and stimulation of creativity are:-Brainstorming, problem solving, check list of related questions, free association, free notebooks, and the big dream approach.

Meanwhile, business technique is a written document prepared by the entrepreneur that describes all relevant external and internal elements involved in starting a new venture. It is often an integration of functional plans such as marketing, finance, manufacturing and human resources. According to Krueger (2008) business technique addresses both short term and long term decision such as; where am I now? Where am I going? How will I get there? Does the idea make sense? Will it work? Who is my customer? Does it satisfy customer's need? What kind of protection can I get against imitation by competitors? Can I manage such business? This implies that business technique provides guideline and structure to management in a rapidly changing market environment. Technology education is a vital pivot in the preparation of an individual to positively fit into the ever increasing complexity of life as self employed but Ogbuanya (1998) and Usoro (2002) at separate findings noted that the story has not really changed partly due to the fact that:-

- The teaching/learning environment has not really supported the practical-based curriculum.
- Intensification of Industrial Training is poor.
- The training tools and equipment are obsolete.
- The training institution are still disseminating skills of the 19th century
- Students are half baked with skills that would have provided them with occupational abilities for self employment.
- Affective domain has not been given a fair place in technology education.

The above limitation is an indicator that there is less emphasis on entrepreneurship education which resulted in lack of self-employment skills as graduate of Polytechnic education are still

roaming the street for white collar jobs, sometimes join kidnapping and militancy business. If there won't be enough co-operate arrangement between the schools, industries for intensification of entrepreneurship education there is likelihood that the concept of self-reliance as enshrined in National Policy on Education (1998) would not be achieved.

Studies, such as Olewe (2008) and Obeta (2006) have been conducted on the need for proper training in technology education for skill acquisition. Polytechnic education which supposed to equipped students with marketable skills still continues to produce graduates with lack of self-reliance skills. Thus, this study is therefore designed to establish measures for improving the acquisition of entrepreneurial skills among polytechnic graduates in the south-south zone of Nigeria.

Purpose of the study

The purpose of the study is to establish measures for improving the acquisition of entrepreneurial skills in Technology Education by the Polytechnic Students in the South-South States in Nigeria. Specifically, the study sought to:

1. Identify the entrepreneurial skills that would be needed to improve self-reliance among Polytechnic Students.
2. Identify the Creative Techniques that would be needed to improve the acquisition of Entrepreneurial skills among Polytechnic Students.
3. Identify the Business Techniques that would be needed to improve the acquisition of Entrepreneurial Skills among Polytechnic Students.

Research Questions.

The study sought to answer the following research questions:

- 1) What are the Entrepreneurial Skills that would be needed to improve self-reliance among Polytechnic Students?
- 2) What are the Creative Techniques that would be needed to improve the acquisition of Entrepreneurial Skills among Polytechnic Students?.
- 3) What are the Business Techniques that would be needed to improve the acquisition of Entrepreneurial Skills among Polytechnic Students?

Hypotheses.

The following hypotheses were tested at 0.05 level of significance:

1. There is no significance difference in the mean rating of Teachers of Technology on the Entrepreneurial Skills that would be needed to improve self-reliance among Polytechnic Students.
2. There is no significance difference in the mean rating of Teachers of Technology on the Creative Techniques that would be needed to improve the acquisition of Entrepreneurial Skills among Polytechnic Students.
3. There is no significance difference in the mean rating of Teachers of Technology on the Business Techniques that would be needed to improve the acquisition of Entrepreneurial Skills among Polytechnic Students

Methodology

The study made use of survey research design. The design was considered suitable for the study because survey design solicited information from Teachers of Technology on the Entrepreneurial Skill needed for self-reliance among Polytechnic Students.

The study area was south-south geo political zone. The study was conducted at Akwa Ibom State Polytechnic, Ikot Osura and Rivers State Polytechnic, Bori. The choice of these institutions was informed by the fact that these institutions operate National Board for Technical Education Curriculum, with large population of teachers and resource materials needed to carry out the research study.

The population for this study was teachers of technology classified under two groups: group A-comprised of 23 lecturers and group B comprised of 12 instructors. Entire population was used for collection of data for the study, as the population size was rather small.

Sample and Sampling Technique

The population was made up of all teachers of Technology in the two states polytechnic (Akwa Ibom State and Rivers State) of the south-south geo- political zone. Simple Random Sampling Technique was used to select the two poly techniques within the zone. Since the population was small the sampling technique was of the "convenience type."

Instrument for Data Collection

Structured questionnaire was used to collect the data for the study. The questionnaire items generated contained information gathered from the review of literature. The response scales for the skills needed were as follows: very highly needed=5, highly needed=4, averagely needed=3, moderately needed=2, not needed at all=1, mean=3.00

The instrument that was validated by three experts, two from the department of Vocational Education University of Uyo and one from Vocational Teacher Education University of Nigeria Nsukka. It was trial tested on 20 vocational education teachers who were not part of the main study. The analysis of the data obtained from the testing using Cronbach Alpha formula for internal consistency of non-dichotomous response modes yielded a reliability index .75 for the instrument.

Method of Data Collection

Copies of the questionnaire were administered to the respondents with the help of two research assistants. The completed questionnaires were collect from the respondents by hand after two weeks. A total number of 34 copies of the instrument were correctly filled and returned. It was this number that was analyzed to generate data used for answering the research questions and testing the null-hypotheses

Method of Data Analysis

The data collected from the respondents were analyzed using mean, standard deviation. The mean of the responses on 5-point scale was 3.00. The lower limit of the scale was 3.50. Thus, any skill item with a mean of 3.50 and above was regarded as needed by technology teachers for use in entrepreneurship training. Any skill item with a mean less than 3.50 was regarded as skills not

needed for use in entrepreneurship training. The standard deviation was to determine the closeness or otherwise of the opinion of the respondents from the group mean. The one way analysis of variance (ANOVA) was used to test the null hypotheses at probability level of .05 level of significance. Any hypothesis whose calculated t- value was greater than table t-value stands rejected and otherwise accepted with relevant degree of freedom.

Research Question 1

What are the entrepreneurial skills that would be needed to improve self-reliance among polytechnic students?

Table 1: Mean rating of teachers of technology on the entrepreneurial skills needed by polytechnic students for self-reliance.

s/no	Entrepreneurial skills for self-reliance	X	SD	RMK
1	Marketing skills	4.10	0.64	Agree
2	Financial resources skills	4.33	0.63	Agree
3	Self-motivational skills	4.48	0.76	Agree
4	Time management skills	3.88	0.79	Agree
5	Administrative skills	3.98	0.90	Agree
6	Innovative skills	4.00	0.70	Agree
7	Creative skills	3.53	0.68	Agree
8	Professional skills	3.55	0.66	Agree
9	Practical skills	3.54	0.71	Agree

The data presented on Table 1 above revealed that the nine entrepreneurial skills had a mean range of 3.53 to 4.48 with standard deviation 0.63 to 0.90. This revealed that the entrepreneurial skills were needed by teachers of technology and should be used to improve skills acquisition in technology education.

Research Question 2

What are the creative techniques that would be needed to improve entrepreneurship skills among polytechnic students?

Table 2: Mean rating of teachers of technology on the creative techniques needed to improve entrepreneurship skills among polytechnic students.

s/no	Creativity Techniques	X	SD	RMK
1	Provide advice to students about becoming creative	3.88	0.69	Agree
2	Begin by trying to be creative.	4.33	0.72	Agree
3	Decide on issue that need fresh thinking.	4.55	0.83	Agree
4	Experiment with what is best for you.	4.48	0.76	Agree
5	You don't have to be related to the problem you trying to solve.	4.45	0.65	Agree
6	Share your thought with your association	4.10	0.80	Agree
7	Encourage students as they improve.	4.00	0.74	Agree

8	Practice creative technique.	3.98	0.90	Agree
9	Provide advice that innovation is building future blocks.	4.18	0.40	Agree

Table 2 showed that all the respondents rated all the creative techniques item listed as being relevant to teachers of technology for improving entrepreneurship skills among graduates of technology education. The mean rating for these items ranged from 3.88 to 4.55 with standard deviation of 0.40 to 0.90. This revealed that the creative techniques were appropriate for teachers of technology for improvement of entrepreneurship skills acquisition in technology education.

Research Question 3

What are the business techniques that would be used to improve entrepreneurship skills among polytechnic students?

Table 3: Mean rating of teachers of technology on the business techniques needed to improve entrepreneurship skills among polytechnic students.

s/no	Business Technique	X	SD	RMK
1	Define the goals and objectives of the venture	3.58	0.69	Agree
2	Encourage the students that business technique is essential to launching a new venture.	3.51	0.59	Agree
3	Students should carry out feasibility study to see any barrier to success	3.56	0.65	Agree
4	Develop attitude in recognizing business opportunity.	3.57	0.85	Agree
5	If you have any one to review your business plan, let non-disclosure agreement be sign.	4.45	0.65	Agree
6	Students should specify performance criteria that would be monitored and controlled.	4.20	0.83	Agree
7	Students should be encouraged to accept risk and failure.	4.09	0.75	Agree
8	Students should tolerate ambiguity and uncertainty	3.55	0.67	Agree
9	Students should be encourage to be self regulating and dynamic	4.12	0.49	Agree

Table 3 showed that all the respondents rated all the business techniques item listed as being relevant to teachers of technology for improving entrepreneurship skills among graduate of technology education. The mean rating for these items ranged from 3.51 to 4.45 with standard deviation of 0.49 to 0.85. This revealed that the business techniques were appropriate for teachers of technology for improvement of entrepreneurship skills in technology education.

Hypotheses 1

There is no significance difference in the mean rating of teachers of technology on the entrepreneurial skills that would be needed to improve self- reliance among poly technique students.

Table 4: summary of ANOVA Calculation for testing null hypothesis 1

Source of variance	Sum of squares	df	Mean sum of squares	Calculated F-value	tabulated critical F
Between group	3155.45	2	295.92	23.10	1.90
Within group	2402.35	33	15.85		
Total	5557.80	35			

Table 4 showed that calculated f- value of 23.10 was greater than the critical f-ratio of 1.90 for 33 df at 0.05 level of significance. The null hypothesis of no significant difference was rejected. Thus there is a significance difference in the mean rating of teacher of technology on measures to improve the acquisition of entrepreneurship skills in technology education.

Hypotheses 2

There is no significance difference in the mean rating of teachers of technology on the creative techniques that would be needed to improve the acquisition of entrepreneurial skills among polytechnic students.

Table 5: summary of ANOVA Calculation for testing null hypothesis 2

Source of variance	Sum of squares	df	Mean sum of squares	Calculated F-value	tabulated critical F
Between group	1654.02	2	192.65	15.73	1.90
Within group	1218.85	32	14.11		
Total	2872.87	34			

Table 5 revealed that the calculated f-value of 15.73 was greater than the tabulated critical f-ratio of 1.90 for 32 df at 0.05 level of significance. Thus the null hypothesis of no significance was therefore rejected. This indicated that there was a significant difference in the mean rating of the two main groups of respondents on the creative techniques needed to improve the acquisition of entrepreneurship skills in technology education.

Hypothesis 3

There is no significance difference in the mean rating of teachers of technology on the business techniques that would be needed to improve the acquisition of entrepreneurial skills among polytechnic students

Table 6: summary of ANOVA Calculation for testing null hypothesis 3

Source of variance	Sum of squares	df	Mean sum of squares	Calculated F-value	tabulated critical F
Between group	3190.32	2	398.17	45.65	1.90
Within group	977.29	33	9.54		
Total	4167.61	35			

Table 6 revealed that the calculated f-value of 45.65 was greater than the tabulated critical f-ratio of 1.90 for 33 df at 0.05 level of significance. Thus the null hypothesis of no significance was therefore rejected. This indicated that there was a significant difference in the mean rating of the two main groups of respondents on the business techniques needed to improve the acquisition of entrepreneurship skills in technology education.

Findings/Discussion of the study

The following findings emerged from the study based on the research questions and hypotheses tested:-

1. The respondents agreed that the skills found in entrepreneurship were needed by teachers of technology to improve self-reliance among polytechnic students.
2. The respondents agreed that the creative techniques were needed by teachers of technology to improve entrepreneurship skills among polytechnic students.
3. The respondents agreed that the business techniques were needed by teachers of technology to improve entrepreneurship skills among polytechnic students.
4. There was significance difference in the mean rating of teachers of technology on the skills found in entrepreneurship which were needed by teachers of technology to improve self-reliance among polytechnic students.
5. There was significance difference in the mean rating of teachers of technology on the creative techniques needed to improve entrepreneurship skills among polytechnic students
6. There was a significance difference in the mean rating of teachers of technology on business techniques needed to improve entrepreneurship skills among polytechnic students.

Entrepreneurship Skills for Self-Reliance

The findings of the study as presented on Tables 1 and 4 revealed that all the entrepreneurship skills identified by of teachers of technology were needed to improve self-reliance among graduates of technology education. This finding is in consonance with the work of McGrath (1999) that the observed skills will enhance the acquisition of entrepreneurship, hence entrepreneurship education should be pursued vigorously in all tertiary institution offering engineering and technical subjects.

Creative techniques for improvement of entrepreneurship skills

The findings of this study as presented on tables 2 and 5 revealed that creative techniques as identified by of teachers of technology were needed to improve entrepreneurship skills among graduates of technology education. This finding is in parripassua with the work of Kruegen (2000) that the creativity techniques with regular innovation in understanding all forces at work within the environment would usher in an improvement of entrepreneurship skills in technology education.

Business Techniques for improvement of entrepreneurship skills

The findings of this study as presented on tables 3 and 6 revealed that business techniques as identified by of teachers of technology were needed to improve entrepreneurship skills among graduates of technology education. This finding is in line with the work of Hmieleski, and Corbet (2006) that the business techniques is an important strategy needed to translate window opportunity into a viable business venture. This show that business techniques identify individual morality and behavioural habits that is related and essential of existence in business.

Educational implication of the study

The findings of the study have implication for teachers of technology and official of the state ministry of education as follows:-

- The entrepreneurship skills identified in the study would provide a skill oriented activities that will stimulate student's interest in self-employment venture.
- The graduate of technology education would be self-regulated, self-aware, and self-confident to undertake a business venture.
- Teachers of technology would develop positive attitude and customers' care plans among the students.

Recommendations

On the strength of the above findings the following recommendations were made:

- Tertiary institution should continue to inculcate and develop proper value for survival of the individual in the society.
- Students should not be afraid to take entrepreneurship risk.
- Students should be encouraged to be creative and innovative.
- Teachers of technology should be re-trained to acquire effective skills in entrepreneurship education.

Conclusion

The outcome of the study was closely related with the major purposes of the study. The study of entrepreneurship has relevance today not only because it helps technology students to better their personal needs but because of the economic contribution of the self employment it offers. Therefore, the skills and techniques identified would equip the students with job and work place skills after graduation thereby helping the students to be self-reliant.

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