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The acquisition of science process skills through entrepreneurial physics education in senior secondary schools

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ABSTRACT

The need for the acquisition of science process skills is gaining acceptance in secondary school as a crucial preparatory skill for promoting entrepreneurship. The problem of unemployment is a challenge facing many developing nations, with no exception to the developed nations. In the current study, the effect of the acquisition of science process skills through entrepreneurship education on 125 Nigerian senior secondary school students' achievement and retention in "Physics in Technology" was investigated. The study adopts the randomized pre-test-post-test control group quasi-experimental design. A group of students was taught using science process skills through the entrepreneurship method, while the other group was taught using the conventional lecture method. A researcher-made instrument, Achievement Test in Physics (ATP), was used to collect data for the study. Overall, this investigation reports that students who acquired science process skills through the entrepreneurship method achieved and retained significantly better than those students taught with the conventional method. The results indicate that science process skills acquisition and entrepreneurship education are indispensable towards self-reliance and sustainable development of the nation. Also, students taught science process skills using the entrepreneurship method retained what had been learned better than the other group, and the method did not segregate along student gender. This paper contributes to scholastic by making a case for incorporating entrepreneurship education into the senior secondary school Physics curriculum. This would assist in the production of secondary school students whose creativity, ingenuity, and resourcefulness can assist in reducing the problem of unemployment through the encouragement of entrepreneurship.

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INTRODUCTION

There is a growing body of research on science process skills and its importance to nation building, especially with the continuous call for the entrepreneurship education (Agommuoh & Ndirika, 2017; C. F. Okafor, 2018; N. Okafor, 2021). Science process skills have been identified as one major skill used by scientist in the 21st century to increase knowledge, find solutions to problems and also carry out investigation (C. F. Okafor, 2018). While many of these skills can be learnt and transferred, researchers have opined that there is the need to revise the curriculum to accommodate the teaching of these skills hence, providing a better platform for the technological development of the nation (C. F. Okafor, 2018). One of the major sciences where science process skills are most required is physics education. Admittedly, it plays great importance not only to the scientific development of the nation, but also employs the ability to create jobs for individuals without having to wait for white collar jobs. This will certainly affect the economy positively

because its practical application has the tendency to alleviate the problem of unemployment, which has plagued the financial economy negatively.

Physics is an aspect of science dealing with the basic questions on the structure of matter and the interactions of the element constituents of nature that are susceptible to experimental investigations (Akinbobola & Bada, 2017). The knowledge of physics is essential for the production of highly skilled manpower such as agriculturalists, engineers, pharmacists, medical doctors and environmentalists. This manpower need is important for the development of the nation. It is through the efforts of scientists that a country can have healthy populace, enough food and defend her people (Akinbobola, 2006). The laws, theories and principles of physics have contributed greatly to various inventions. For instance, studying the environment and the guard against natural disasters make use of the knowledge of upper and lower atmospheric physics. The principles and theory of semiconductors devices have led to the development of logic circuits, integrated circuits, diodes and rectifiers which are currently used for the production of various computers, modern day electronics and cellphones (Akinbobola, 2018b). Archimedes principles led to the development of sea transportation while the knowledge and theory of mechanical energy have led to the development of hydroelectric power through the use of turbines. Through the theories of electricity and magnetism, waves and acoustics, telephones and information communication technology were invented and developed. Also, the knowledge of nuclear energy is widely applied in medicine, industry, warfare, electric power generation and agriculture (Akinbobola, 2018b).

The foundation for good achievement in physics starts from the first year of the senior secondary school (Akinbobola, 2018a). The physics curriculum at this level of cognitive domain, that is, knowledge before moving on to the other two levels (comprehension and application) is crucial if physics is to be well understood at the early stage of introducing the subject. The contents in the new Nigerian senior secondary school syllabus are discussed under six themes. This is an improvement over the old Nigerian senior secondary school physics syllabus that was discussed under five themes. The introduction of "Physics in technology" as the sixth theme in the new Nigerian senior secondary school physics syllabus is a type of entrepreneurial physics education reform in order to meet the emerging needs and global competitiveness of learners (Akinbobola & Bada, 2017).

An entrepreneur is considered as an individual who either makes new combination of production factors such as new strategies of production, new market, find new sources of supply and organizational form or as an individual ready to take risks or an individual who make use of market opportunities, eliminates disequilibrium between aggregate demand and supply or an individual who owns and operates a business (Hassan, 2013). An entrepreneur is the innovator who implements change within markets through the carrying out of new combinations. The carrying out of new combinations can take different forms, which include the introduction of a new good or quality thereof, introduction of a new strategy of production, opening of a new market, conquest of a new method of supply of new materials or part and carrying out of the new organization of any industry (Orji, 2014). Entrepreneurship is equated with the concept of innovation applied to a business context. As such, entrepreneur moves the market. Entrepreneurship is described as a process through which individuals and/or government either on their own or jointly exploits available economic opportunities without being scared by associated risks or inadequate resources under their control (Etuk & Mbat, 2010). Entrepreneurship remains the gate way to sustainable wealth creation and if a country desires to move out of the disturbing level of unemployment and ravaging level of poverty, adequate attention must be given to the growth of entrepreneurship. Omolayo (2006) refers entrepreneurship education as a structured formal conveyance of entrepreneurial competencies, which in turn refers to the concept, skills and mental awareness used by individuals during the process of starting and developing their growthoriented ventures. Also, entrepreneurial orientation is described as the development of entrepreneurial skills, effec-

tive and efficient application of the skills in management of business to create a significant difference from other business, recognizing the skill and allowing it to function very well. Entrepreneurship education is a type of education that is used to prepare people to initiate creativity and changes in production and contribute to sustainable communities and economic security.

According to Fabunmi and Isah (2009), the objective of entrepreneurship education is to produce individuals who are self-employed and employers of labour. Therefore, the personality of an entrepreneur is important in achieving success. These include the willingness to take calculated risk in order to earn higher income, the ability to formulate effective venture dreams (high need achievement), vision to recognize opportunity where others sees confusion or chaos, the drive to get more done in less time, tolerance for ambiguity and believe in locus of control (not faith or luck). The entrepreneurial skills also include those of planning, negotiating, marketing, strategizing, delegation, leadership and communication. In Nigeria, there is a planned integration of policies of education with enterprise and self employment as a panacea for mass unemployment, rural poverty and empowering the populace economically.

Previous studies on entrepreneurship education has stressed the crucial height and competencies that comes with it (Anho, 2011; Asogwa & Dim, 2016). In the words of Izedonmi and Okafor (2010), they argued that entrepreneurship education is based on developing the youths with passion and multi skills that can ensure their survival in the modern realities of unemployment. Hence, entrepreneurship education is the gradual development of skills, knowledge and attitudes necessary for an individual to perform adequately in a given occupational or business oriented opportunities for improved performance of a country's economy. The necessity for entrepreneurship education arises when societies have to improve on their effectiveness, efficiency and safety of their economy for a greater economic development. Entrepreneurship education in a school curriculum makes sure that, each learner has a chance of becoming an entrepreneur and each learner is the architect of his fortune.

A review of relevant literature allures to the relevance of science process skills to alleviating the problems of unemployment that has blurred many developing nation (Avwiri, 2017). Çakır and Sarıkaya (2010) investigated science process skills of science teaching and found out that the skills vary on the basis of gender, secondary schools and universities attended. This implies that the number of skills acquired by secondary school students go a long way to determine the skill they will be bringing to entrepreneurship or as they proceed to the university to take up courses in the field of science. In what appears to be a support for the inclusion and enhancement of science process skills, N. Okafor (2021) argues that the acquisition of science process skills is crucial to ensuring a technologically driven economy. Okigbo and Igboegwu (2018) investigated secondary school students entrepreneurship development through the acquisition of science process skills and found out a low level of these skills among secondary school students. This situation perhaps, might not be good for a nation facing the problem of unemployment. The researchers therefore recommend the identification and inculcation of these skills for specific topics for onward integration into the students work.

In the field of physics, many opportunities await physicists in entrepreneurial development, few of which include; electrification, medicine, industry, peace, warfare, transportation, entertainment aviation among others (Akinbobola, 2018b). It also consist of areas in career and entrepreneurial development in any field of engineering; field of geophysics/seismology which generally involved undertaking seismic exploration and producing controlled source seismic data by creating a picture of what lies below the earth's surface; metallurgy concerned with the extraction and processing of various metals; radiating protection practitioner specializing giving advice and guidance about the possible hazards of ionizing radiation, such as x-rays, as well as radiation materials and waste. Other career opportunities in entrepreneurial Physics include; seismic interpreter which involve sending pulses of sound energy down through layers of rock beneath the earth's surface, research physical scientist studying non-living systems to increase the knowledge of how

the physical world works, investment analysts who provides research information to help traders, institutional teachers that offers to teach curriculum subjects to learners, meteorologists who study the causes of particular weather conditions using information obtained from the land, ocean and upper atmosphere and many other related professional development opportunities (Alasi et al., 2015).

Technology and construction industries require the knowledge of physicist for planning and developing enterprises. There is also opportunity in the aviation industry and military. A physicist can work in the ministry of education and ministry of science and technology as educator, educationist, scientific adviser and planner. Physicist can work in libraries and publishing houses as editor of scientific works and can be used in radar control at airports. Physicists can be serve as officer, senior technical staff, production officer, banking officer, programming officer and marketing officer to mention just few in private sector after writing the aptitude test conducted by sector since the private sector is not only concerned about the area of specialization of applicants but also their quality (Abubakar, 2012). There are many aspects of Physics education curriculum that are vocation and technical oriented for instance, electronics and circuit network are concept that have direct bearing with electrical, electronic and computer jobs. A Physics education graduate can go for further studies through apprenticeship to learn the mode of repairing radio, television, handsets, generators, computers, and other electronic and mechanic devices. Physics education has provided the prerequisite knowledge of the mechanics of these devices. Physics education graduates veered into computer technology and internet networking as self-employed individuals. Also, the general studies education provided by the institutions will assist in proper organisation and coordination of business (Abubakar, 2012).

Skill acquisition is the capability to learn or acquire skills. It aims at the development of a new skill, and practice of a method of doing things which usually gained through training or experience. Science process skills are various psychomotor and cognitive processes required to undertake meaningful scientific enquiry. They are developed rather than being natural. The skills are supposed to be inculcated in the students as they are guided through scientific processes (Akinbobola & Afolabi, 2010). Science process skills are described as a set of broadly, transferable abilities appropriate to many science disciplines and reflective of the behaviour of a scientist. There are two major forms, namely basic science process skills and integrated science process skills. Basic science process skills provide the foundation for learning the integrated (more complex) skills. Examples of such skills include observing, inferring, measuring, communicating, classifying and predicting. Integrated science process skills are more advanced abilities that are required by scientist to display. Examples include controlling variables, defining operationally, formulating hypothesis, interpreting data, experimenting and formulating models (Akinbobola & Bada, 2017). Traditional method, also known as conventional method is a type of expository method teacher centred technique where students learn various concepts, principles and theories by rote and memorization without being able to apply it to everyday life situation (Akinbobola, 2018b). It is a method in which the teacher gives a pre-planned lesson to the students with or without the use of instructional materials. It involves a one-way communication pattern in which learner's participation is virtually non-existent. Traditional method does not enhance learning when compared to the use of other learner centered and innovative methods because many intellectual and manipulative skills are not learnt and also, it kills the spirit of discovery and investigation (Afolabi & Akinbobola, 2009; Akinbobola, 2006; Bada, 2022; Bada & Akinbobola, 2020; Ogunleye & Babajide, 2011).

The new Physics curriculum in Nigerian provides a platform where secondary school education learner would be equipped for higher education and world of work with suitable technical, vocational and entrepreneurship skills. This has led to the introduction of Physics in technology in the curriculum and community resources (human and non-human) and field trips to factories, workshops, industries and research institute are recommended in order to provide first-hand,

hands-on experiences in a happy expectancy and also to promote self-reliance individuals after they have left secondary schools. Hence, this study examined the acquisition of science process skills through entrepreneurial Physics education in Nigeria senior secondary schools.

This present study comes on the background that most secondary school students are deficient in the science process skills which might assist them in overcoming the current reality of unemployment that is been experienced in many developing nation (Ekon & Eni, 2015; Oloyede & Adeoye, 2012; Walters & Soyibo, 2001). The acquisition of these skills might encourage the springing up of more entrepreneurs, whose activities could go a long way in alleviating the unemployment problem. As it stands today, it appears that the education obtained by these youth, especially physics education, is unable to provide job since they are without creative, resourcefulness and innovation skills for self reliance. This study argues that the adverse effect of unemployment might be tackled through the provision of an entrepreneuship Physics education and science process skills program. This paper has the following objectives: (1) to investigate the effect of the acquisition of science process skills through entrepreneurship method on students' achievement in Physics in Technology, (2) to access the effect of the acquisition of science process skills through entrepreneurship method on students' retention of "Physics in Technology", (3) to examine if students' gender influence achievement in "Physics in Technology" when taught using science process skills through entrepreneurship method. In order to do justice to the three objectives, three null hypothesis were tested for acceptance or otherwise at 0.05 significance level: (1) There is no significant difference in the mean achievement score of students that acquire science process skills through entrepreneurship method and those taught with conventional method in Physics in Technology. (2) There is no significant difference in the mean retention score of students that acquire science process skills through entrepreneurship method and those taught with conventional method in Physics in Technology. (3) There is no significant difference in the mean achievement score of male and female students that acquire science process skills through entrepreneurship method in Physics in Technology.

METHOD

The study adopt the randomised pretest-posttest control group quasi experimental design. The population of the study consisted of 778 senior secondary three (SS 3) Physics students in the 12 co-educational secondary schools in Ife South Local Government Area of Osun State, Nigeria. A total of 125 Physics students from four (4) randomly selected secondary schools in their intact class setting took part in the investigation. Simple random sampling technique was used to select four secondary schools used for the study because it was impossible to reach the whole population of physics teachers in Ife South Local Government area of Osun State. The schools were randomly assigned to experimental and control groups. A researcher designed instrument titled Achievement Test in Physics (ATP) was used to obtain data (posttest and retention test) for this study. ATP consist of 50 multiple choice items which were constructed on "Physics in Technology", a newly added theme in the Nigeria senior secondary physics curriculum. Physics in Technology consists of electrical continuity testing, solar collector, musical instruments, application of lenses and plane mirrors, battery, electroplating, application of electromagnetic field, transmission systems, uses of machines, repairs and maintenance of machines, dams and energy productions, rockets and satellites, Niger-SAT 1 and NICOM – SAT 1. The instrument (ATP) was validated by two (2) experienced secondary school Physics teachers with over 15 years of classroom experience. The validity of ATP was further ensured by using the test blueprint (Table of Specification) in order to achieve its content validity. ATP was trial tested with 20 students who were not used for the main study. The data collected from the trial test were analysed using Kuder-Richardson formula 21 and the result indicated an internal consistency of 0.74. Item analysis was also conducted on the instrument to determine its difficulty power and discrimination index. The result from 20 students who were not part of the main sample was used to

determine the item analysis. A 55.72 difficulty power and 0.53 discrimination index showed that the instrument was good and appropriate for use in this study (Chauhan et al., 2013; Kheyami et al., 2018; Taib & Yusoff, 2014).

The Physics teachers in each of the selected schools used for the experiment were trained on the use of acquisition of science process skills through entrepreneurial Physics education by the first author after approval to conduct the research had being giving by the selected school authorities and also, after the consent of the students have been taking from the students and with agreement with their parents/guardians. Possible pre-existing differences in the learning outcomes between the experimental and control groups were accounted for by administering a pretest to the two groups before treatment was given to the experimental group and the results were used as covariate measure. After the administration of the pretest, the teaching commenced and the experimental groups were asked to acquire science process skills through apprenticeship after school hours. These include acquiring skills in electroplating of metals and purification of impure metals, for example, cutlery such as spoons, knives and forks are often coated with silver to prevent rusting. Others include acquisition of skills in electrical house wiring, making a junction box and sockets, production of solar collector, and repairs and maintenance of various machines. The teaching of the concept, Physics in technology was done for ten weeks after the administration of the pretest. The control group was taught with the conventional lecture method. The posttest was administered immediately after the completion of teaching to both experimental and control groups. Retention test was administered three weeks after the posttest. The pretest, posttest and retention test contained the same items except that, it was reshuffled before administration in each case. The data collected were analysed using Analysis of Covariance with pretest scores as covariates. This investigation lasted for a period of 14 weeks and the three null hypotheses were tested for acceptance or otherwise at .05 level of significance.

FINDINGS AND DISCUSSION

Findings

Research Hypothesis 1: There is no significant difference in the mean achievement score of students that acquire science process skills through entrepreneurship method and those taught with conventional method in Physics in technology.

Table 1. ANCOVA Analysis of the Achievement Scores of Students in the Experimental and Control Group

Sources of Variation	Sum of Squares	Df	Mean Square	F-cal	P-value	Decision
Corrected Model	524.32	4	131.08	19.98	.000	*
Intercept	1531.46	1	1531.46	233.45	.000	*
Pretest	8.02	1	8.02	1.22	.378	NS
Treatment	485.53	1	485.53	74.01	.000	*
Gender	6.24	1	6.24	0.95	.416	NS
Treatment x Gender	3.54	1	3.54	0.54	.572	NS
Error	786.65	120	6.65			
Total	123246.42	125				
Corrected Total	1310.97	124				

R. Squared = .788
Adjusted R. Squared = .745
* = Significant at P< .05 alpha level
NS = Not Significant at P< .05 alpha level

The analysis in Table 1 indicates that, the main effect of treatment on students' achievement in Physics was significant ($F_{(1, 124)} = 74.01$, P = .000). Therefore, the null hypothesis stating a non-significant difference in the mean achievement score of students that acquire science process

skills through entrepreneurship method and those taught with conventional method in Physics in technology was not accepted. Since the mean achievement score of students that acquire science process skills through entrepreneurship method (x-= 77.28) is higher than that of conventional method (x-= 63.26). It implies that, students that acquire science process skills through entrepreneurship method achieved significantly better than those taught with conventional method. With adjusted R. squared of .745, it means that, 74.5% of the total variance in the achievement of students in Physics is attributable to the joint influence of treatment and gender.

Research Hypothesis 2: There is no significant difference in the mean retention score of students that acquire science process skills through entrepreneurship method and those taught with conventional method in Physics in technology.

Table 2. ANCOVA Analysis of the Retention Scores of Students in the Experimental and Control Group

Sources of Variation	Sum of Squares	Df	Mean Square	F-cal	P-value	Decision
Corrected Model	612.48	4	153.12	23.10	.000	*
Intercept	1723.35	1	1723.35	259.93	.000	*
Pretest	9.13	1	9.13	1.38	.364	NS
Treatment	546.46	1	546.46	82.42	.000	*
Gender	8.48	1	8.48	1.28	.380	NS
Treatment x Gender	4.32	1	4.32	0.65	.541	NS
Error	795.24	120	6.63			
Total	142162.43	125				
Corrected Total	1407.72	124				

R. Squared = .836
Adjusted R. Squared = .804
* = Significant at P< .05 alpha level
NS = Not Significant at P< .05 alpha level

The analysis in Table 2 shows that, the main effect of treatment on students' retention in Physics was significant ($F_{(1, 124)}$ = 82.42, P = .000). Therefore, the null hypothesis stating a non significant difference in the mean retention score of students that acquire science process skills through apprenticeship and those taught with conventional method in Physics in technology was not accepted. Since the mean retention score of students that acquire science process skills through apprenticeship (x-= 83.25) is higher than those taught with conventional method (x-= 64.27). It implies that, students that acquire science process skills through entrepreneurship method retained significantly better than those taught with conventional method. With adjusted R. squared of .804, it means that, 80.4% of the total variance in the retention of students in Physics is attributable to the joint influence of treatment and gender.

Research Hypothesis 3: There is no significant difference in the mean achievement score of male and female students that acquire science process skills through entrepreneurship method in Physics in technology.

As shown in Table 1, the influence of gender on students' achievement in Physics was not significant ($F_{(1, 124)}$ = 0.95, P = .416). Thus, the null hypothesis stating a non-significant difference in the mean achievement score of male and female students that acquire science process skills through entrepreneurship method in Physics in technology was retained and accepted. This means that, both male and female Physics students achieved equally when they acquire science process skills through apprenticeship. The effect of treatment did not segregate along gender thus, treatment has almost the same effect on students whether male or female.

Discussion

The results of the findings as shown in Table 1 and Table 2 indicated that, Physics students that acquire science process skills through entrepreneurship achieved and retained significantly

better than those taught with conventional method. This might be due to the fact that, the science process skills acquire through entrepreneurial Physics education is important in reducing poverty and increasing employment opportunities. That is, when youths are empowered through the acquisition of entrepreneurial skills, there is the possibility that they will use the skills to create new ways for wealth. Empowering the youth to set up businesses involves proper acquisition of skills through entrepreneurship Physics education and training. Also, hands-on activities or learning by doing is seen as a better strategy to teach entrepreneurial Physics education. Also, entrepreneurship enhances the use of local raw materials and other resources. Being relatively labour intensive, enterprise creates substantial employment opportunities at low capital cost and being resilient, flexible, can better adapt to unexpected changes in the economic and financial environments. The importance of small scale enterprises include substantial contribution of the sector to the gross domestic product (GDP), employment opportunities for the country with the engagement of young schools leavers, increasing local value added, and technological development in Nigeria. It also reduces crime rate and immorality in the country. Entrepreneurship retains earning or plough back profit. This is when entrepreneurs re-invest their profit into the business instead of taking them to foreign countries. When such profits are retained in Nigeria, they help in the development of the whole country. The establishment of entrepreneurship business encourages social interaction and promotes peace in the country. Entrepreneurship business in the country will help in increasing the level of local technology. With the acquisition of various skills, it will help in area of development of locally produced goods rather than relying solely on imported goods. Entrepreneurship requires low level of capital for its establishment. A more equitable re-distribution of income is usually achieved in small scale enterprise. Inventions, adaptations and general technological development are common in small-scale industries.

This is in agreement with the findings of Hassan (2013) that, the power of an economy to a large extent depends on the strength of its small business brought about by the development of entrepreneurship in such a country. It is also in supports of Izedonmi and Okafor (2010) that, entrepreneurship education is designed to communicate and inculcate competencies, skills, knowledge, and values needed to recognize business venture. It is about changing an idea into reality, rather than talking about how to do it. With the understanding of entrepreneurial action, the learners will be able to know how and what it means and takes to own a business and create ideas towards the achievement of desired goals and objectives. Hence, the growth and development of a nation's economy is possible through entrepreneurial activities and its education. The result is also in line with the findings of Ekong and Ekong (2016) which emphasis the importance of skills acquisition in national growth that, Nigeria's social and economic problems will be drastically reduced if people are given adequate vocational training in skills, raw materials, tools, equipment and machineries. It is only with skilled individuals that materials can be harnessed, manipulated and changed into products. The result is also in agreement with the findings of Igbo (2006) that, entrepreneurship programmes provide an excellent opportunity to connect education systems with local economy, as they are based on project work and on the voluntary participation of real entrepreneurs. Learners who develop contacts with the local business community are more likely to remain in their state after completing their studies, either as employees in a local firm or as proprietors of their own business. Entrepreneurship education equips the learner with skills on decision making, acquisition of new ideas, strategies of raising and maintaining conversations and establishing business relationship. Through such education, qualitative ability that facilitates computation and record keeping are further learnt. Entrepreneurship skill education seek to prepare people particularly youths to be responsible, enterprising individuals who become entrepreneurs thinkers by putting them in real life learning experiences where they can take risks, manage the results and learn from the outcome. The result is also in line with the findings of Akinbobola and Ikitde (2012), Hassan (2013), Agommuoh and Akanwa (2014), Adetayo et al. (2015), and Ekong

and Ekong (2016) that, entrepreneurship education promotes students' achievement, skills acquisition, job creation, and self empowers of the youth.

The results of investigation as shown in Table 1 indicated that, a non-significant difference exists in the mean achievement score of male and female students that acquire science process skills through apprenticeship in Physics in technology. This means that, both male and female Physics students achieved equally when they acquire science process skills through apprenticeship. It is also noted that, both male and female students acquire entrepreneurial skills education within and outside the school system which enhance motivation, problem solving skills and collaborative learning. This is in line with the findings of Akinbobola and Ikitde (2012) that, gender is not a significant factor in the achievement of entrepreneurship Physics students.

CONCLUSION

Physics students that acquire science process skills through entrepreneurship achieved and retained significantly better than those taught with conventional method. 74.5% and 80.4% of the total variance in the achievement and retention of students in Physics respectively is attributable to the joint influence of treatment and gender. Science process skills acquisition and entrepreneurship education are considered important towards self reliance and sustainable development of the nation. The entrepreneurship Physics education has the capability of reducing poverty and increasing employment opportunities. It is an instrument that the nation should used in order to achieve economic rehabilitation and self-reliance. This implies that, those learners that acquire science process skills through entrepreneurship will be able to engage themselves in useful ventures. Thus, science process skills acquire through entrepreneurial education goes beyond training and education, it involves a process of human capacities building through formal or informal training inculcating in the entrepreneur skills such as technological skills, financial skills, communicating skills, intellectual skills and managerial skills. Based on the findings of this study, the following recommendations are made: (1) Educational planners and developers should incorporate entrepreneurship education into Physics curriculum at secondary schools and tertiary levels in Nigeria in order to reduce unemployment rate and youth restiveness in the country. (2) Physics students should be assisted by their teachers to develop entrepreneurship skills that will help them to be resourceful, creative, innovative, have business drive, set goals and know how to manage time and money. (3) Physics teachers should be trained and retrained through workshops, seminars and conferences in order to acquire science process skills through entrepreneurial education. (4) Adequate provision of basic infrastructural facilities and instructional materials will enhance science process skills acquisition by Physics students. Hence, Nigerian government at all levels should make more funding available for entrepreneurial education. (5) Stakeholders and policymakers in Nigeria should create awareness of the prospects of entrepreneurship education and give opportunity for it to be learnt in schools at all levels according to student's interest, ability, and aptitude. (6) Microfinance, banks and government in Nigeria should provide loans to the entrepreneurial Physics education trainees to enable them start up their own business.

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