CHALLENGES OF TEACHING AND LEARNING OF BASIC TECHNOLOGY IN JUNIOR SECONDARY SCHOOLS IN ANAMBRA STATE

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Abstract

This study examined the challenges encountered in the teaching and learning of Basic Technology in the junior secondary schools in Anambra State. It employed a survey design. The study used a five-point likert scale questionnaire, which contains a total of 25-items, as a major instrument. In all, three hundred and eighty seven (387) students and fifteen (15) Basic Technology Teachers made up the sample for the study, giving rise to a total sample of four hundred and two (402). Arithmetic mean and standard deviation were the major statistical tools used for the data analysis. A reliability co-efficient using this conbach alpha was used. The result showed that non availability of standard and functional instructional materials, workshop and textbooks, lack of tools and equipment, poor teacher qualification, insufficient time, poor funding and nonchalant attitude of the government towards education are some of the challenges encountered in the teaching and learning of Basic Technology. The study recommended among other things, that the Federal and State Ministries of Education should ensure that standard and functional workshops are built in alljunior secondary schools across the nation, qualified teachers and ample time should also be provided to aid students.

1.0 Introduction

Basic Technology, formerly known as *Introductory Technology* was structured to assist learners to develop interest in technology. The aim is that by the end of the junior secondary school, presently known as basic 9, technological appreciation would have been activated and sustained, and foundation laid for students' entrance into a vocation of their choice. This is in consonance with the statement in the National Curriculum for Junior Secondary Schools (1998). Furthermore, the national curriculum maintains that, the subject of Basic Technology is to be offered in junior secondary schools so as to reduce widespread ignorance about technology, lay a firm foundation for national development and inspire an increase in skill acquisition.

Basic Technology is a subject that introduces students at the junior secondary level of education in Nigeria, to the fundamental tips in technology. The title *Introductory technology* as a subject, came with the introduction of the now defunct 6.3.3.4 system of education, (this means six years of primaryeducation, three years of junior secondary education, another three years of senior secondary education and of course, four years of tertiary education.) However, with the current 9.3.4 system of education, (this means nine years of basic education, three years of senior secondary and four years of the tertiary education), the title changed to *Basic Technology*. Noteworthy in the curriculum for the new system, is the subsuming or a technical of primary science and integrated science to form a formidable unity known as Basic science and Technology. This synthesis helps to prepare a child adequately to undergo studies in the mainline science. The National Policy on Education (NPE: 2004) defines Basic Technology as the aspect of education which leads to acquisition of practical and applied skills as well as basic scientific knowledge. It is also a subject that deals with the fundamentals of engineering and technology. In order to reduce ignorance in relation to technology and help lay a solid foundation for true national development, Basic Technology has been accorded a place in theschool curriculum as a core subject like English and Mathematics. The objectives of teaching

Basic Technology subjects in Nigerian schools include:
1. To provide pre-vocational orientation for further training in technology
2. To provide basic vocational literacy for everyday living, and
3. To stimulate creativity (NPE,2004).

Looking critically at the objectives and the vital role of Basic Technology in the development of a nation, one would observe that it would be impossible to teach and learn Basic Technology effectively without first identifying and addressing the challenges inherent in its teaching and learning. It would require an enquiry into the availability of teachers, standard workshop, equipment and other tools to carry out practical activities in the schools.

The Federal Government in November, 2007 launched a new curriculum known as the new basic education curriculum for primary and junior secondary schools. The new curriculum is said to address, among other things, issues of value re-orientation, poverty eradication, critical thinking, entrepreneurship and life skills. Damole (2011) stated that in the Nigerian education continuum, basic education as the foundation requires a sound knowledge of science and technology. This is not only because science and technology has a tremendous impact on all social institutions but because science teaching is "somewhat on the downside in primary schools. The 9 years Basic Science and Technology Curriculum is therefore a restructuring and re-engineering of the revised core curriculum for Primary science and integrated science of Junior Secondary school currently in use.

In the selection of content for the new Basic Technology curriculum, Globalization, Information and communication Technology (ICT) and Entrepreneurship were the three major issues considered to be crucial in the development of a child, important to the nation, and influencing the contemporary world of knowledge. Thus in the aspiration for identification with contemporary development globally, it has become inevitable for Nigeria to incorporate relevant content into the school curriculum.

These have been infused into every class of Basic 1-9. The objectives of the new Basic Education Curriculum in Science and Technology are also spelt out thus, to enable learners:
1. Develop interest in science and technology
2. Apply their basic knowledge and skills in science and technology to meet societal needs
3. Take advantage of the numerous career opportunities offered by the study of science and technology and
4. Become prepared for further studies in science and technology.

It is basically worthy of note that Basic Science and Technology offered at the lower and Middle basic education stages is separated at the Upper Basic Education level. At the presentation of the new curriculum to Education stakeholders, at the Educational Research Centre in Abuja, the executive secretary to the Nigerian Educational Research and Development Council (NERDC), opined that the new curriculum sought to forestall the irregularities that marred the previous one. He observed that the former one fell short in the area of human capacity development. He further stated that with proper implementation of the new curriculum, the students would not only interact properly, but would be better enabled to engender peace and development in our societies.

Thus, if the new curriculum is optimally employed, our country would have succeeded in registering her name among the committee of scientifically and technologically self-reliant nations. Nonetheless, sadly as it currently is, in less than half a decade, after the inception of the new curriculum, it seems not to be bearing enough fruits, just like the one that preceded it. The challenges inherent in the implementation formed the basis of this study. There is no gainsaying the fact that it is

important to look at the problems marring the teaching and learning of this *would-have-been* new spark of scientific and technological revolution in our country.

1.1 Statement of the Problem

Basic Technology studies in the junior secondary schools in Nigeria, is yet to reach its full potentials and engender full vocational competences among Nigerian youths. This is because basic Technology is confronted by myriads of problems such as which militate against its proper and efferent teaching in junior secondary schools. Specifically, the study sought to investigate the challenges confronting effective teaching and learning of Basic Technology in the junior secondary schools and the problems inherent in the need for proper implementation of the already reformed curriculum. It is the investigation of these identified problematic issues that this study is intended to examine.

1.2 Purpose of the Study

The main purpose of this study is to find out the challenges that are encountered in the process of teaching and learning of Basic Technology in junior secondary schools in Njikoka Local Government Area of Anambra State. Specifically, the study sought to:

1. find out instructional material challenges encountered in the teaching and learning of Basic Technology in Secondary Schools
2. determine teacher-related challenges encountered in the teaching and learning of Basic Technology in Junior Secondary Schools
3. ascertain time-related challenges encountered in the teaching and learning ofBasic Technology in Junior Secondary schools and finally
4. find out strategies that can be used to minimize these challenges

1.3 Significance of the study

The present study is of great relevance to many. Beneficiaries of the findings of this work include teachers, students, curriculum planners, parents and other stake holders in education.

The findings of the study will improve the teaching styles of teachers. They will be made aware of the importance of effective ways to reach different types of learners and assess student understanding through multiple means. Basic Technology teachers will understand the importance of training and re-training themselves in order to enhance competency in the subject area. The training could be geared towards enhancement of relationship between teachers and students. Through this, teachers could become better advisers, content experts and coach and through such means, make teaching and learning more meaningful. (Eyibe, 2017)

The findings of the study will help students to appreciate the importance of technology, deepen their interest in the subject, and help them to understand what skills they need to survive in a complex, highly technological knowledge based economy. Being aware of the challenges confronting teaching and learning of Basic Technology, students will be better enabled to learn and easily refine their analysis and problem-solving skills. Also experiment and observe phenomenon and to view results in graphic ways that aid in understanding. And, as an added benefit, findings will help students with technology tools and a project-learning approach. With these, students are more likely to stay engaged and on task, reducing behavioral problems in the classroom.

Curriculum Planners like the Nigerian Educational Research and Development Council (NERDC) will benefit from this study.

1.4 Scope of the Study
This study is delimited to the challenges encountered in teaching and learning of Basic Technology in the Public Junior Secondary Schools in Anambra State. The study investigated instructional-related, time-related and teacher-related challenges. It also focused on strategies that could be employed to ameliorate the challenges encountered in the teaching and learning of Basic Technology in junior secondary schools in Anambra State.

Research Questions
1. What are the instructional material related challenges encountered in the teaching and learning of Basic Technology in secondary schools in Anambra State?
2. What are the teacher-related challenges encountered in the teaching and learning of Basic Technology in secondary school in Anambra State?
3. What are the time-related challenges encountered in the teaching and learning of Basic Technology in Anambra State?
4. What strategies could be used to minimize these challenges encountered in the teaching and learning of Basic Technology in Anambra State?

Sample and Sampling Technique
The study consisted of 387 students and 15 the study consisted of three hundred and eighty-seven (387) students and fifteen (15) Basic Technology teachers,hence the total number of four hundred and two (402).

Instrument for Data Collection
The instrument that was used for the study was questionnaires containing a total of 25-items which were administered on the students and Basic Technology teachers. The instrument was designed using five-point likert type scale of strongly agree, agree, undecided, disagree and strongly disagree. The researcher ensured that the students were properly guided by taking out time toexplain some of the item statements that were hard for them to understand. The questionnairehad four sections. The first dealt with the personal data of the respondents. The second dealt withitems on the instructional material challenges encountered in the teaching and learning of Basic Technology. The third concentrated on determine the teacher related objectives of the subject have been achieved, while the fourth concentrated on determining the extent to which these factors affect the implementation of the curriculum and students' performance.

Validation of Instrument
The research instrument was validated by three experts in curriculum and measurement and evaluation. After going through the purpose of the study and the research questions, they made some valuable corrections and suggestions which led to the modification of some items in the questionnaire,

Method of Data Collection
To ensure a hundred percent return of the questionnaires, they were distributed and collected on the spot by the researcher and some research assistants.

Method of Data Analysis
Data collected were analyzed using the Arithmetic mean (x). Values were *assigned to the rating scales as shown below:
Strongly Agree (SA) = 5
Agree (A)   = 4
Undecided (UN)   = 3
Disagree (D)   = 2
Strongly Disagree (SD)   =1

Presentation of Data

All the results were presented in tabular form and analyzed using the statistical mean. These were done in line with the research questions.

Research Question 1
What are the instructional materials related challenges in the teaching and learning Basic Technology in Junior Secondary Schools in Anambra State?

S/N	Instructional Materials	SA (5)	A (4)	UN (3)	D (2)	SD (D	N	X	R
1	Dearth of technology textbooks is a great problem to the teaching and learning of basic technology	150 750	122 488	70 210	43 86	17 17	402	4.07	Agree
2	Non availability of standard and functional workshop greatly affect the teaching and learning of Basic Technology	243 1215	152 608		- 0	2 22	402	4.56	Agree
3	Lack of technology tools and equipment affect the teaching and learning of Basic Technology curriculum	143 715	197 788	24 72	21 42	22 22	402	4.07	Agree
4	Insufficient power supply makes the operating of available basic technology equipment difficult	125 625	148 592	30 90	59 118	40 40	402	3.64	Agree

From table 1above, the respondents agreed on 4 items and disagreed on 2. The respondents agreed with items 1, 2, 3 and 4 since their mean scores are above 3.5. These items are:(l)Non availability of technology textbooks is a great problem to the teaching and learning of, Basic Technology,(2)Non Availability of standard and functional workshop greatly affects the teaching and learning of Basic Technology, (3) Lack of technology tools and equipment affect the teaching and learning of Basic Technology, (4) sufficient power supply makes the operating of available Basic Technology equipment difficult. Finally, from the grand mean which is 3.51, we can conclude that students agreed that there are some instructional material challenges encountered in the teaching and learning of Basic Technology.

Research question 2

What are the teacher-related challenges encountered in the teaching and learning of Basic Technology in secondary school in Anambra State?

Table 2: Mean responses on the teacher-related challenges encountered in the teaching and learning of Basic Technology.

S/N	Teacher-related challenges	SA	A	UN	D	SD	N	X	R
1	Scarcity of basic technology teachers in junior secondary schools constitutes great problems in its teaching and learning	253 1265	99 396	23 69	27 54	23 23	402	4.49	Agree
2	Lack of incentives to teachers in the classroom and the students in turn	262 1310	120 360	- 0	51 10	15 15	402	4.21	Agree
4	Most junior secondary schools lack trained teacher of basic technology	249 1245	107 428	7 21	20 40	19 19	402	4.36	Agree
4	There are no good technical teacher training institutes for training teachers of basic technology	20 100	19 76	- 0	64 128	299 299	402	1.5	Disagree
5	Basic Technology teachers develop apathy to workshop practice due to lack of motivation.	102 510	270 1080	20 60	3 6	7 7	402	4.13	Agree

Grand Mean= 3.86

In the table 3 above, item statements 1, 2, , 3, and 5 have mean scores which are above 3.5, thus, the respondents agreed with them. These items are (1) Scarcity of Basic Technology teachers in junior secondary schools constitutes great problems in its teaching and learning, (2) Lack of incentives to teachers affect their performance in the classroom and the .students in turn. (3) Most junior secondary schools lack trained teachers of Basic Technology and (5 Basic Technology teachers develop apathy to workshop practice due to lack of motivation. Nonetheless, they also disagreed with only item 4 which is below 3.5. The item is (4) There are no good Technical Teacher Training Institutes for training teachers of Basic Technology. Finally, the grand mean score is 3.86. This means that the students are in agreement that there are some teacher-related challenges affecting teaching and learning of Basic Technology.

Research Question 3
What are the time-related challenges encountered in the teaching and learning of Basic Technology in secondary schools in Anambra State?

Table 3: Mean responses on time-related challenges encountered in the teaching and learning of Basic Technology in junior secondary schools.

S/N	time-related challenges	SA (5)	A (4)	UN (3)	D (2)	SD (D	N	X	Remark
1	The frequency of periods allotted to Basic Technology helps greatly in its teaching and learning.	132 660	210 840	13 39	32 64	15 15	402	4.02	Agree
2	Time for practicals inside the technology workshop is usually sufficient	19 95	34 136	- 0	107 214	242	402	1.70	Disagree
3	insufficient time allotted to demonstration of class work hinders proper learning of Basic	270 1350	128 512	0	2 4	22	406	4.64	Agree
4	Students are not allowed enough time to get acquainted with the tools and machines in the workshops and this leads to poor teaching and	265 1325	94 376	12 36	23 46	8 8	402	4.45	Agree

Grand Mean = 3.82

In the table 4 above, item statements 1,3 and 4all have above 3.5 mean which means they were agreed upon by the respondents. These item statements are: (1) The frequency of nods allotted to Basic Technology helps greatly in its teaching and learning, this scored 4.02. (3) Basic Technology teachers are frustrated out of teaching basic technology because of insufficient, this scored 4.32 (4) Students are not allowed enough time to get acquainted with the tools and machines in the workshops and this leads to poor teaching and learning of basic technology, this in turn scored 4.45. However they disagreed with itemstatement 2 which is: Time for practicals in technology workshop is usually sufficient. This scored only 1.70. Finally therefore, because the grand mean is 3.82, we can say that the students are in agreement that there are time-related challenges affecting effective teaching and learning of Basic Technology.

Research Question 4

What strategies could be used to minimize these challenges encountered in the teaching and learning of Basic Technology in secondary schools in Anambra State?

Table 5: Mean responses on the strategies that can be used to curb the challenges encountered in the teaching and learning of basic technology

S/N	strategies	SA (5)	A (4)	UN (3)	D (2)	SD (D	N	X	R
1	In-service training for Basic Technology teachers will improve the quality of teaching and learning of the subject	202 1010	140 560	19 57	24 48	17	402	4.20	Agree
2	Regular exposure to workshops helps students develop interest in the subject	271 1355	104 416	3 9	18 36	6	402	4.53	Agree
3	Adequate time for demonstration and modeling will improve teaching and learning of Basic Technology.	183 915	190 760	8 24	8 16	13 13	402	*4.29*	Agree
4	Proper funding of technology workshops and laboratories in schools will improve teaching and learning of the subject.	210 1050	136 544	6 18	37 74	13	402	4.22	Agree
5	Adequate provision of facilities and other instructional materials helps good teaching and learning of basic technology	167 835	131 524	41 123	37 74	26 26	402	3.93	Agree

Results and Discussions

The respondents' decisions on the first research question: what instructional material-relatedchallenges are encountered in the teaching and learning of Basic Technology as seen in table 2above showed some instructional material challenges that are encountered in the teaching andlearning of Basic Technology in junior secondary schools. Their responses on items *1,2,4,* 5, 6 and 7 are in agreement that;

Non availability of technology textbooks is a great problem to the teaching and learning of Basic Technology.

Non Availability of standard and functional workshop greatly affects the teaching and learning of Basic Technology

Lack of technology tools and equipment affect the teaching and learning of Basic Technology Curriculum

Unavailability of relevant instructional material and textbooks makes the teaching and learning of the Basic Technology to be difficult.

Insufficient power supply makes the operating of available Basic Technology equipment difficult, and

Nonchalant altitude of government towards education in general affects the teaching and learning of Basic Technology.

Then, the respondents' disagreements with 3 and 8 (which are: Technical education in secondary schools is properly funded and basic technology curriculum is very difficult to teach and learn respectively) implies that technical education in secondary schools is not properly funded and that Basic Technology curriculum is not very difficult to implement. Items 1, 2, 4 and 5 were rated the most influential factors with the mean responses of 4.07, 4.56, 4.07 and 4.53 respectively. Obviously, standard workshop, equipment and other tools to carry out practical activities in these schools are not adequately provided. Arisi (2008) studied the causes of poor performances of students in Basic Technology in secondary schools in Edo state and revealed that lack of adequate instructional materials as well as ill-equipped nature of our school libraries is a great cause of students' poor performance. Thus for Swertzel (2009), a standard workshop should have at least two work benches for students to practice, there must be at least two tools rack or boxes, available tools should be in the ration of 1:2 students, and at least one lathe machine be made available in-the workshop.

Again the result of the analysis of the second research question: what teacher-related challenges are encountered in the teaching and learning of Basic Technology, as seen in table 3 above shows that the respondents agreed that the items 9, 10, 11, 13, 14, 15 are some teacher-related challenges that are encountered in the teaching and learning of Basic Technology in the junior secondary schools. These items are:

Scarcity of Basic Technology teachers in junior secondary schools constitutes great problems in its teaching and learning.

Lack of incentives to teachers affects their performance in the classroom and the students in turn. Most junior secondary schools lack trained teachers of Basic Technology. Qualified teachers enhance the quality of teaching Basic Technology teachers are frustrated out of teaching basic technology because of insufficient time.

Little amount of time allotted to demonstration hinders proper learning of Basic Technology Students are not allowed enough time to get acquainted with the tools and machines in the workshops and this leads to poor teaching and learning of basic technology. But the respondents' disagreement with item 18 is a strong pointer to the fact that time for practicals in technology workshop is never sufficient and this results in the fact that students do not get enough time to get acquainted with the tools and machines in the workshops. This is to the reason Mkpa (2010) advocated that a lesson period of not less than 50 minutes should be allotted to Basic Technology. For him, this will allow ample time for the teacher to employ demonstration method and the class to experiment, explore, undertake group work, and other activities that call for active participation of the pupils in the class. When time factor is not properly considered in timetable formulation, the resultant effect is that teaching and learning of Basic Technology is greatly impeded.

The result of the final research question in table 5 above, which examined the strategies that can be used to minimize the challenges encountered in the teaching and learning of Basic Technology, shows that the respondents agreed with all the five items. The high mean response of 3.93 and above implies that the respondents strongly agreed that the identified factors can help minimize the problems encountered in the teaching and learning of Basic Technology.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. For effective delivery of science and technology education, sufficient and varieties of
2. science and technology textbooks should be made available in all junior secondary schools.
3. **standard and functional workshops** should be built in schools. Other instructional materials like audio-visual media and information and communication technologies should be installed and their use made compulsory in schools.
4. Alternative steady power supplies should be made available for the schools so as to allow the insufficient time with the electrically operated equipment/facilities in the workshops.
5. Basic Technology curriculum is not difficult to teach and learn if qualified science specialist teachers handle it.
6. Teachers' Registration Council of Nigeria, (TRCN) should therefore ensure that only qualified and professional teachers, who are legally registered, are allowed to teach.

Conclusion

If the technology of our country must grow, then a firm foundation is required at the basic education levels. Government, stakeholders and relevant school authorities must endeavour to provide the basic instructional materials. The workshops and laboratories must also be built and well equipped to enhance proper teaching and learning of Basic Technology at thejunior secondary levels. This is important, so that these students will not be left behind, bearing in mind the ever impelling forces of globalization and localization. In the light of Allen (2009) globalization refers to the transformation of local and regional realities into global ones, uniting the peoples of the world in a single global market and society. For Eyibe (2004) Globalization is a process of continuing integration of the countries of the world, and localization is the desire for self-determination and the devolution of power; whichever way, advancement in technology is necessary and acutely needed in our society.

Basic Technology has become common in many countries and has been taught in different forms and with different motives. A focus in Basic Technology education should be on infrastructural development and technological advancement and thus should be viewed as fundamentally critical. Its duty is to prepare young students and even adults to engage positively and meaningfully with their environments and the world to build a formidable and durable scientific culture, industrialization and a robust economy. The Federal and State Ministries of education, stakeholders and other relevant authorities in education should develop in Basic Technology a pedagogical methodology that consists of the raising of scientific awareness, the nurturing of scientific passion and engagement in technological skill acquisition and development, Raising scientific and technological awareness involves promoting the understanding and appropriation of scientific knowledge by a wide audience as a recognized necessity in a world where technological considerations play a major role in terms of economics and society. For Woodman and Long (2014) technology crucially contributes to a country's market development, and boosting productivity, Nurturing the scientific passion is about engaging in activities that will make science and technology have an appeal for the people both young and old. This step aims to transform beliefs of impossibility and unnecessary dogmatism by giving students the chance to explore ex experiment and practice some hitherto theoretical inundations. The final step is an invitation to action.

This action involves proper implementation of the Basic Technology curriculum through correct teaching methods. This is why it is important that care is taken to employ all the necessary

means possible, namely: sufficient and adequate instructional materials, good Basic Technology teachers, ample time and proper funding, to ensure that the teaching and learning of Basic Technology is a worthwhile venture. Clearly, it is a cliché that actions speak louder than words. Practical reality is far more useful that illusory dreaming about future scientific and technological bliss. It is a known fact that technological development has not been at its best here in Nigeria. We ought to develop our own technology and shun unnecessary importations in respect of which Ume-Martin & Ebede (2013) believe that one of the major constraints hindering the country's march towards human development, industrialization and robust economy is the massive and exploitative importation of technology, goods and services from other countries. It is against this benchmark that Onwumere (2014) opined that if Nigeria still nurses the dream of becoming relevant in the technological arena, she must of necessity pay a rapt attention to the development of science and technology or run the risk of occupying the position of a western technological dumping ground. One may then conclude that more resources both human and material be 'channeled in order to rescue the dismal technological condition of Nigeria.

References

Allen J. (2009) *The Future Church; Ten Trends Revolutionalizing the Catholic Church:* Double day. USA, New York.

Arisi, E. (2008) Causes of Poor Performance of Students in Secondary Schools in Edo State.*Unpublished (B.Sc. Edu) Project, Department of Arts and Social Sciences* Education,Ebonyi State University, Abakaliki.

Damole, B. T. (2011) Emerging Issues on the Universal Basic Education Curriculum in Nigeria: Implicationsfor the Science and Technology Component: *Pakistan Journal of Social Science,* Vol. 8 Issue 1.

Eyibe, S.C. (2004). Environmental Education and Information Technology in S.C Eyibe and M.A. Madusolumuo (Eds) *Education and Information Technology at Work:* Yola:TEWAN Publication.

Eyibe, S.C. (2014) *Teacher Education: Basic Issues.* Owerri: Cape Publishers, Int'l Ltd. Ezema, P. A. (1999) The Place of Educational Technology on the Teaching and Learning ofEnglish Language. *A publication of Federal College of Education (technical).*

Eyibe, S.C (2017). In search of efficient education system in contemporary Nigeria. *The Academia 1, 1, 3-10 January 31.*

Federal Ministry of Education (2004) *National Policy on Education.*Lagos: Government Press. Goldhaber, A.S. & Nieto, M.M. (2010) *Photon and Graviton Mass Limits: Review of ModernPhysics.* journals.aps.org/rmp/abstract/10.1103/RevModPhys.82.939

Onwumere, 0. (2014) Africa: A dumping ground for substandard Electrical Wares in TVNNigerian Voice in *http://thenigerianvoice.com/news/4l474l* I/Africa.

Swertzel, K. (2009). The effects of cooperative learning methods on Achievement, Retention andAttitude of Home Economic Students in North Carolina: *Journal of Vocationaland Technical Educators* Vol. 4, no. 3 2015.

Ume-Martins, F & Ebede, H.N. (2013). Basic Production Technology: An Innovation for thebasic technology in the 9-year Basic Education curriculum in Nigeria: *Journal ofVocational and Technical educators.* Vol. 3, no. 4.Echetabu U. P (2012) Factors Affecting the Teaching and Learning of Basic Technology in*www.edutopia.org/technology-integration-introduction*Encyclopedia (2012)

Woodman, L. &Long, J. (2014).*How is Technology Driving Job Creation in Poor Countries*