

Pre-Vocational, Pre-Technical and Pre-Professional Programmes: Basic Tools for Vocational Technical Education and Training

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Abstract

It is noted that various institutions of learning such as primary schools, secondary schools, technical colleges, colleges of education, polytechnics and universities adopt different programmes and methods in training their pupils and students. The chosen programmes by these institutions depend on the ability and interest of the students in various institutions. These programmes are the basic tools for vocational technical education and training in various countries of the world. The training required depends on the level of institution of learning. The training starts from primary school level to higher institutions. The study focuses on the meaning of pre-vocational, pre-technical, pre-profession, technical education and vocational education. It also focuses on the occupational competencies required for training vocational technical education students. The study also contained the measures to improve on the training of vocational technical education students.

Keywords: Pre-vocational Education, Pre-technical Education, Pre-professional Education, Vocational Technical Education and Training

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Introduction

Vocational education refers to acquisition of skills and knowledge that are required for employment in any respective occupations. It provides opportunity for the students to be employable in any occupations. It is also given in secondary schools and technical colleges. Technical Vocational Education and Training refers to education and training that prepares students for gainful employment (Adefuye & Ayeoribe, 2014). Vocational and technical education embraces practical skills in various vocational areas. Skills are acquired at all levels of vocational and technical education programmes but vary in depth according to the level of institution. The preparatory aspect of pre-vocational training offered to students at the junior secondary school level is for the purposes of:

- Introduction into world of technology and appreciation of technology towards interest arousal and choice of a vocation at the end of junior secondary school and professionalism later in life
- Acquiring technical skills
- Exposing students to career awareness by exploring usable options in the world of work; and
- Enabling youths to have an intelligent understanding of the increasing complexity of technology (F.G.N, 2014). The preparatory aspect of pre-vocational training is the same as pre-technical training. Both are used for preparing students for vocational and technical education.

Pre-vocational education is offered at primary and junior secondary school levels. Pupils and students in this category are exposed to more practical contents and less scientific content. This means that practical content would carry 70% and scientific content would carry 30%. Pre-vocational and pre-technical courses are preparatory courses preceding the entry into full vocational and technical courses (Okoro, 1993). Accordingly,

the pre- vocational and pre-technical stage of occupational preparation enables the students to explore a number of occupations before making a choice of a vocation. Pre-vocational and pre-technical courses can be offered in woodwork, metalwork, technical drawing, electricity, electronics, typewriting, shorthand, accounting, home management, textiles and clothing, agriculture and automechanics. Pre- technical courses offer moderate practical content, moderate scientific and technological content. In senior high schools, courses assume a pre-technical approach and may be titled systems or technologies such as Materials and Processes Technology, Electronic Technology, Drafting Technology, Graphics Arts Technology and Mechanical Systems (Ezeji, 1999).

At senior secondary school level, instructions are based on moderate practical content, moderate scientific and technological content that is 50% practical content and 50% theoretical content. Former technical secondary schools in the old system offered pre-technical courses which enable the students to gain admission into colleges of education, polytechnics and universities without any hindrance. According to Ezeji(1999), at secondary school level, the students should not study the same depth or type of content, courses and content should be individually selected for those who may leave school before graduation, graduate or enroll in a post secondary programme. Instructions could be pre-vocational for some , pre-technical for others and pre- professional for still others. Pre-professional courses offer less practical content and more scientific and technological content. Pre-professional courses are offered by technicians at sub professional level. It is an aspect of vocational education. Vocational education is that form of education which is obtainable at the technical colleges. This is equivalent to the senior secondary education but designed to prepare individuals to acquire practical skills, basic and scientific knowledge and attitude required as craftsmen and technicians at sub –professional level (F.G.N, 1998).Craftsmen refer to graduates of technical colleges and senior secondary schools while technicians at sub-profession level refer to graduates of polytechnics at national diploma level.The goals of vocational and technical education are to:

- *provide trained manpower in the applied sciences, technology and business particularly at craft, advanced craft and technical fields

- *provide the technical knowledge and vocational skills necessary for agricultural, commercial and economic development

- *give training and impart the necessary skills to individual who shall be self- reliant economically(FGN, 2014).

Learning of vocational technical education courses entails many forms. These include learning by imitation, direct learning models, demonstration and practice model, observation and practice model. There are some characteristic features of observation; imitation and learning by doing models .They differ in functions and activities to impart the necessary skills to the students. The outstanding feature of observation is that it offers an investigator the opportunity to gather primary data from naturally occurring social situations (Oluwatayo & Ibitoba, 2017).The teaching of vocational technical education courses involves the application of technical information through learning by doing. In a workshop, the teacher will be constructing the object; the students will be following the teacher and construct their projects. The objectives of vocational technical education in Nigeria vary from primary school level to tertiary institution. At primary school level, awareness is created in the pupils about the meaning of vocational technical education as it relates to future operational openings (Olaitan, 1996). Accordingly, Vocational courses are taught theoretically and practically at the junior and senior secondary school levels .Skills and knowledge acquisitions are mostly emphasized at the post secondary school level. Okoro in Olofinoye and Olaoye (2018) stated that the aim of vocational education is not to give certificates but to acquire skills and knowledge for employment in any respective occupation.

Appropriate training is needed by vocational and technical education teachers to impart skills and knowledge at various levels. Abokere (2013) stated that Vocational and Technical Training must be strengthened so that youths must be empowered with relevant skills .They would be self employed, self reliant and sufficient and be able to contribute meaningfully to the development of the society. The idea is to ensure that training is on real jobs, and this is why certain misconceptions are not tolerated in vocational and technical education (Nwachukwu, 2001). Vocational students and educators should be empowered to update their knowledge and skills and to improve their pedagogy in teaching vocational and technical courses to meet the technological changes in the society.

In actual sense, pre-vocational and pre-technical education programmes are mainly designed to introduce participants to the world of work and to prepare them for entry into further vocational or technical education programmes. It is a practical skill needed in various occupational areas to enable each student proficient in his or her chosen occupation. Mere provision of technical; information cannot serve the demands of vocational and technical education. In pre-technical, pre-vocational and pre- profession courses, the use of tools and equipment should be considered indispensable component even though the types of tools and equipment used might vary. Technical courses offered in senior secondary schools should correctly be classified as pr-technical and pre-vocational rather fully technical and vocational education (Okoro, 1993).Different types of levels need different categories of teachers. It should be pointed out that the nature of the training required for pre-vocational and pre-technical teachers is different from the kind of training required for the preparation of vocational teachers or

polytechnic lecturers. The Federal Government of Nigeria (2004) stated that no educational system can exceed the quality of its teachers nor can a nation arise above the quality of her educational system. Vocational institutions should be aware of the differences in need and plan separate programmes for the different types of teacher

Theoretical Framework

The study was hinged on the design theory. According to Bebens (1984), there is a short introduction to graphic design theory, explaining the different aspects of design, which are considered when, producing a graphic layout in commercial art. Accordingly, this design could be called classic theory because it forms the basis for many decisions in design. Graphic design theory gives descriptions of the elements of design such as line, shape, space, texture, value and colour as well as the principles of design which include movement, emphasis, balance and utility. The elements of design include line, shape, texture, value, colour, space and principles of design, which include movement, balance, emphasis and unity. The combination of both elements of design and the principles of design could be used to design suitable products. The use of graphic design in vocational and technical education programmes could help students familiar with design. Design is essentially about solving problems meeting requirements and proposing solutions. Students could engage themselves in design in the laboratories and workshops to achieve the objectives of various programmes in the institutions.

Moore and Fitz (1993) stated that Gestalt theory can be used to make the design more readable technical diagrams. Accordingly, gestalt principles could be used to transform a very poorly designed diagram to a more useful diagram. This implies that before a design could be made meaningful, it involves different stages and arranges parts into a whole. The theory assumes that learning is the process of organizing physical psychological and biological events into a whole or integrated unit. According to Tonne; Popham and Freeman (1965), the theory stated that coherent functional wholes are apparent within the mass of phenomena. It seeks to understand the behaviour of these wholes as well as their parts. Therefore, in vocational and technical education, several ideas could be gathered to form a good design such as several parts (cutting lists) to form a centre table.

Gestalt theory involves the use of figures in the workshops to express ideas in the way individual student perceives the drawing before the production process. In vocation and technical education, the students could make use of first and third angle projections to form isometric, oblique, axonometric and perspective projections. According to Mangal (2005), Gestalt theory, a thing is perceived as a relationship within a field, which includes the thing, the viewer and a complex background incorporating the viewer's purpose. In the workshop, the thing could be the product which is to be made. The viewer could be a student. The background involves the knowledge acquired before making such a project. According to Mangal (2005), Gestalt theory entails that when the components of a thing are brought together something new (even more than the original components) may emerge; reinforcing the statement "the whole is different from the sum of its parts. This procedure involves the thinking habit of the student to design any product that is more valuable and comprehensive. This could also enable the students to design suitable products using computer graphics to welcome the design theory, which could improve on the production of various projects in the workshops.

Hatchuel, LeMasson and Weil (2004) propounded a C-K design theory or concept knowledge theory and a theory of reasoning in design. The theory defines design reasoning as a logic that organizes the generation of unknown objects. It builds on systematic design, creativity theory and general design theory. Claims made for C-K design theory include that it is the first design that

- 1 offers a comprehensive formalization of design that is independent of any design domain or object
- 2 explains invention creation and discovery within the same frame work and design processes.

Students should possess the habits of thinking and reasoning to make them productive in all things they lay their hands on. Okorie(2000), stated that ,no matter how a man may appreciate the importance of a job , if he lacks the habits of thinking and the habits of doing which it requires, he is of no use as a productive, economic or social factor on that job. In the workshops , design could be in the form of imitation, adaptation and innovation.

Design could be imitated and modified to achieve the objectives vocational and technical education programmes. New ideas could be generated and expand them towards successful designs. The knowledge available to designer or a group of designers and the concept which is the necessary departure point of a design process could be used to design suitable products in the workshops .The design of suitable products could reduce the machining problems which could serve as a measure for the elimination of hazards in wokshops and laboratories of various vocational and technical education programmes..

In conclusion, the theory specified above will serve as a guide for the users of this study. In other instance, the theory appears too explanatory to guide the design of products in the industries in a productive manner. It is hoped that it will be helpful to the reader in thinking about the design principles and theories that will be useful in designing any marketable products in vocational and technical education programmes.

Meaning of Pre-vocational Programme

In Nigeria, prevocational courses are given at junior secondary schools. It should also be given at senior secondary school level because students are required not to study the same depth of content. Pre-vocational education was given in technical colleges before the introduction of 6:3:3:4 system of education. In this case, 70 percent was given on practical content while 30 percent was given on theoretical content. Prevocational education entails the awareness of career; tools and acquisition of technical skills that could enable each student make a choice of any occupation in the world of work (Olaoye, 2016). The programme must provide separate courses, which may be of choice because not all the students will study the same depth of content. The students in the pre-vocational programme are taught more practical content, less theoretical and scientific content. This is because junior secondary schools and senior secondary schools can be the highest educational qualifications for some students. Students are required to learn more practical contents such as construction of various objects and how to use various tools through the application of vocational skills. This will help them perform well after their graduation. Any technical courses in which a large proportion of the allotted time is not devoted to practical work, projects and experiment are not likely to be successful (Okoro, 1993)

Meaning of Pre-technical Programme

Pre-technical courses expose students to moderate practical content, moderate scientific and technological content. Students in technical secondary schools were exposed to pre-technical courses. Technical secondary schools were few secondary schools that offered few technical courses. They trained neither technicians nor craftsmen but provided a pre-technical and pre-vocational course for students who would later seek employment in industry or continue their education in a polytechnic or university (Okoro, 1993). Accordingly, technical secondary schools were not fully vocational institutions because students did not attain job entry level skills in their technical subjects. In secondary school, courses assume a pre-technical approach; it is not fully vocational in nature because students have not acquired skills that will make them employable in their vocations. This enabled them to secure admission into universities, polytechnics and colleges of education. At present, courses at technical college level assume to be pre-technical approach which could allow students gain admission into colleges of education, polytechnics and universities. In this case, students would be exposed to all areas. Exposure of students to pre-technical programme will assist them after graduation to proceed to colleges of education, polytechnics universities. Pre –technical programme is one year programme at college of education and universities in which students are exposed to technical and science courses. Pre-technical programmes can be studied with manual approach using a variety of subjects such as AutoCAD, practical electronics welding, machining, woodwork, computer applications, health and safety.

Meaning of Pre-professional Programme

Pre- professional students are set of people or students that enroll for post secondary programme. Pre-professional courses expose students to less practical content, more scientific and technological content. It is a programme that helps students to select their occupations. Pre-professional programme is an aspect of vocational and technical education. It is a sub-set of undergraduate programme that prepares students for a professional degree. Pre-professional programme is a little bit above ordinary level but lower than degree level. Pre-professional programme in vocational and technical education and training refers to the selection of vocational and technical education courses which qualify the students for admission into professional programme at the university level. Vocational education is that form of education which is obtainable at the technical colleges (FGN, 1998). Accordingly, this is equivalent to the senior secondary school education but designed to prepare individuals to acquire practical skills, basic and scientific knowledge and attitude required as craftsmen and technicians at sub-professional level. Vocational education starts from senior secondary schools to technical colleges up to National Diploma at polytechnic level. The award of national diploma at polytechnic level is an aspect of pre- professional programme.

Concept of Vocational Education

Vocational education is any form of education that prepares individuals for employment in various occupational areas. It is the type of education that is provided in senior secondary schools and technical colleges. In Nigeria, Students in senior secondary schools are expected to take at least one vocational subject in their final senior school certificate examination. The merger of vocational subjects like Agricultural Science, Technical Drawing, Food and Nutrition, Basic Electronics and Applied Electricity that exist in senior secondary schools have not been able to prepare the secondary school graduates for the world of work. The major aim of the national policy on education is to make senior secondary leavers easily employable and this, the policy hopes, will be achieved by making every secondary school student take at least one vocational subject before graduation (Okoro, 1993). Post secondary vocational education courses in colleges of technology and polytechnics should be offered to students who took vocational courses in secondary school but now need to increase their level of skill

through further training. Such courses could also be offered to students who did not take vocational courses in secondary school.

Concept of Technical Education

Technical education is different from pre-vocational education, vocational education, pre-technical education and pre professional education. It is obtained at higher institutions. Technical education is an advanced vocational education programmes in polytechnics, colleges of education and universities. (Olofintoye & Olaoye, 2018). Accordingly, Home Economics, Business Education,

Agricultural Education, Woodwork Technology, Metalwork Technology, Electrical Technology, Automechanic Technology, Electronic Technology and Building Technology have their technical areas but technical education in these courses varies from one course to another. Some technical courses in polytechnics and universities can be vocational in nature if they are tailored towards skills and knowledge that are required for gainful employment. Graduates of vocational and technical education programmes usually bridge the gap between the professional engineer and the craftsman (Okoro in Olaoye & Adameji, 2017).

Occupational Competencies Required for Training Vocational Technical Education Students.

Competencies are required by individual students to perform well in their various occupations. Competencies are defined as the combination of knowledge, skills and attitudes that can be developed through training and which are adequate for accomplishing some specific tasks. An occupation is regarded as any type of job a person does to earn a living. This includes furniture making, Agriculture and mechanical engineering. According to Popoola, Bello and Famiwole (2009), acquiring the appropriate competencies in a job area is important to success in occupations and industry. Competencies can also entail the practical skills needed in various occupational areas. Therefore; occupational competencies can be defined as elements such as knowledge, skills and attitude which are required to perform effectively in a specific job. Occupational competency refers to the skills or ability required by employees for optimal performance in the given occupation, technical or trade field (Ezeabikwa & Okeke, 2016). Accordingly, the goal of occupational competency is to optimize performance by having the technical skills to perform the job within a stipulated time or within a reduced stipulated time frame. Technical college students need occupational competencies to effectively perform well in their respective occupations in industries /workshops after their graduation. Technical college programmes are offered at the upper secondary education to provide the recipients with appropriate technical and occupational skills, knowledge and attitude to meet job requirements. (Ezeabikwa & Okeke, 2016). Therefore, secondary school students need occupational competencies to perform well in their chosen occupations.

Self –pacing or Individualized Instruction

It is a technique that allows each student to advance at his/her own rate. This factor includes individual interest, ability and capability. Each student is taught in the way that best suits him/her and he/she is allowed to progress at his/her own rate. In individualized teaching, learning, task or competencies are developed and placed in proper sequence. It is an individualized instruction or self directed instructional strategies whereby the learner teaches himself/herself by working through a series of experience or step that leads to a carefully defined goals and objectives. Each student is evaluated from time to time and progresses from one unit to another as his knowledge or skill increases. The student moves at fast or slow as and he /she decides to complete the course sent to him. Individuals who learn at a fast pace have opportunity to gain competency quickly while those who learn at a slow pace have the opportunity to absorb to information without being pushed ahead too quickly. (Jennifer, 2015). Self pacing technique is highly important in skill acquisition. It helps students to accomplish their practical projects. Self-pacing technique could also be effective through industrial training activities that are provided for the students at all levels.

Occupational Experience /Industrial training

Industrial work experience is a programme for students who enrolled in institutions and who through a co-operative arrangement between the schools and industries. It is a practical training during a long vacation in the co-operating industry. Co-operation between the industries and institutions should be encouraged (FGN, 2014). Accordingly, industrial training shall organize staff and students industrial attachment as appropriate and in collaboration with the proprietors, institutions and industries. Industrial training will equip both staff and students. Vocational educators believed that the students should apply he learned in the classroom to real life situations. One of the objectives of students industrial work experience scheme (SIWES) is to provide students with practical experience so they can be competent to do a work perfectly and to standard (Popoola, Bello and Famiwole, 2009). Industrial work experience has been included in the curriculum of technical colleges in order to make the students competent in their vocational trades. It should also be included to the curriculum of secondary schools in order to make them employable after graduation.

Method of Instruction

The teacher should use the method that is suitable for the lesson. Demonstration and field trips are very appropriate methods of instruction. Scheht-man & Leicht-entrit (2004) while emphasizing concerns about affective domains of teaching stressed that such methods help students to be more explorative and supportive to one another in meaningful learning process. These make teaching concepts and ideas more and easily grasp by students. Omotayo, Dada and Jedege in Omotayo (2016) summarily agreed and suggested in their different studies that there is the need to repackage our teacher education curriculum to accommodate the demands of the new literacies in demonstrations; students see direct actions on what is being taught. The teacher also emphasizes on learning by doing that is students learn physical skills such driving a nail or sharpening a chisel, by learning the correct movement. For effective participation of students in practical work the teacher- students' ratio shall be kept at 1:20 (FGN, 2014). Project method is also used in teaching pre-vocational subjects, vocational subjects, pre- technical courses and professional courses by making useful articles in order to develop skills. Project could be given to group or individual students. In accomplishing a task, competencies are essential and must be accurately employed in accomplishing such task (Nwachukwu, 2001). The fact that the students can supply answer to questions about how to cut mortise does not prove that he can perform the operation but this depends on the methods and technique adopted by the teacher or instructor. There are many tools used to analyze data in vocational and technical education programmes. These include t-test analysis, Analysis of Variance (ANOVA test Statistics), Analysis of Covariance (ANCOVA test statistics), Correlation Analysis, Linear and Multiple Regression Analysis. Correlation and Regression analysis are used to predict future phenomena in various occupations. Correlation and regression analysis are integral part of vocametrics. Vocametrics refers to the integration of mathematics, statistical techniques and theories in vocations for explaining the relationships between variables, testing hypotheses and forecasting any vocational phenomena (Olaitan & Ndomi, 2000). Vocametrics deals with measurement that entails quantitative and qualitative data. Vocametrics is defined as the use of vocational theory, statistics, mathematics and computer skills for the purpose of analyzing data in order to predict any vocational phenomena. (Olaoye, 2018). Vocametrics may use standard statistical models such as linear and multiple regressions to study vocametric problems, but most often they are with observational data, rather than in controlled experiments.

Provision of Facilities

Facilities are the materials used to facilitate teaching and learning effectively. These include workshops, classrooms, library and finishing room. The use of facilities makes possible the shifting of emphasis from teaching all imparting of knowledge directly and from teachers to students, to have greater concern for the learner's needs, interest, capabilities and style of learning. For example, if an instructor in a technical college wants to teach orthographic projection in technical drawing, he makes a model for the purpose of presenting information to the students. This makes the topic clearer and understood than teaching in abstract.

Occupational Information

This is the most factor that enhances occupational competencies. The students who are in junior secondary schools need occupational information about the subjects to choose when they get admission into senior secondary schools and technical colleges. Occupational competencies include nature of work, duties performed, information about employment outlook, promotional opportunities and entrance requirements. This duty is performed by guidance and counselor when a person is given information on the skills and competencies required for a particular occupation., he is more equipped to know whether he is fit or not. Students are more interested in choosing occupations because of the information gathered about them. Once the students have gained admission into technical colleges, it is the duty of the teacher to guide the students towards the occupation until the end of the course.

Orientation of Students towards the Use of Tools in their Vocational and Technical Areas

Introduction of tools to the students is done on the first day at school. This is necessary in order to avoid problems that may arise. Orientation gives better information that enhances student's energy and drives to learn effectively and achieve to their potential at school (Ayeni & Amire, 2017). Accordingly, it is a concept which has been used in several ways to give information on why people believe and or behave as they do. If the instructors are unable to solve these problems, students can be somehow confused if they were in the school for first time and there are usually scheduling problems. The first day of school in some schools may last only a few hours. The following should be done by technical instructors during the introduction according to Nwachukwu (2001)

- Introduction of course and objective to be achieved at the end of the course-For example, if an instructor teaches woodwork in year two at technical college level, the objective - The instructor of the course should be ability of the students to design and construct any furniture items.

- Instructor introduces himself to the students and the students introduce themselves to the instructor. He also makes reference to the experience he had in the past.
- Methods of Students evaluation: The instructor should tell the students how their final grades would be determined. For example, the instructor should tell the students that the course consists of three papers. Paper 1 (objectives and essay), paper II(Drawing and Design) and paper III(Practical).It should be noted that each paper carries 100 marks. The total marks of students will be divided by 3 in order to get the overall mark.
- Safety instruction: This refers to the rules and regulations to be observed in the workshop in relation to the tools and machines and also the workshop environment.
- Shop tour: This is necessary to make students familiar with the shop.

Progress chart

This is a chart that contains the marks of individual student on each subject usually every week. This shows the rate by which the students improve on their various courses of study. Progress chart is probably the type of record found most frequently in industrial and vocational instructional conditions (Nwachukwu, 2001).It appears to have been adopted for vocational education along with the trade or task analysis technique. The students' names are arranged on the chart in such away as to permit the instructor check such student against each operation as he may wish to list in the chart .An operation is a step in carrying out a job.

Field Trips

Students leave school for industry to see different types of machine .They see the close relationship between school and industry in such that the same machines are used; the same methods, procedures and processes are employed. The instructors should make students aware that, field trips can serve as a means of augmenting school facilities, making an acquaintance with the world of work. Field trips serve as a factor which is being used in enhancing learning by making use of community resources when school provision is inadequate.

Measures for Improving the Training of Vocational Technical Education Students.

Conditions of Service and Salary of Instructors and Teachers.

The salary of teachers is too poor comparing to other sectors in some countries of the world .This should be improved and made more attractive. If the conditions of service are improved, this makes the instructors/ teachers competent in their areas of specialization. Each instructor/ teacher would try to achieve the stated objectives. The better the conditions of service is improved, the more competent the instructors/ teachers in their vocational subjects. In-service education courses for the up-grading of teachers shall be linked with educational broadcasting (FGN, 2014). Promotions should be done at the appropriate time and leave bonuses should also be paid at the usual time. Fringe benefits include accommodation; leave allowances, facilities for study leave and children allowance. Other conditions such as gratuity are delayed by the government.

The instructor needs food to maintain himself and his immediate and extended family especially in Nigerian situation. Frequently, this need becomes intertwined with other non –physiological needs such as those associated with comfort that relate to the instructors reputation .There are also those needs that relate to instructors reputation such as the need for status, recognition, respect and appreciation. These needs may be partially satisfied through workers promotion.

Code of Conduct

This serves as a sound foundation for solving the existing problems of occupational competencies in vocational technical programmes. Both the instructor and the government should be in position to drawing up the code of conduct and these should be agreed between both parties as to what constitute acceptable and unacceptable behaviours. The training of instructors should emphasize their ethical responsibilities while members of the profession should endeavour to live up to their code of conduct.

Adoption of basic principles of Technical Vocational Education and Training

For any programmes that deal with acquisition of skills to be effective, the basic principles of vocational education should be taken into consideration. The principles according to Okoro in Famiwole(2016) specifies the guide lines or minimum standards below which effective TVTET programmes , training and retraining programmes should be offered .The following are the major principles

1. Technical Vocational Education and Training (TVET) will be efficient in proportion as the environment in which the learner is trained is a replica of the environment in which he must subsequently work.
2. Effective vocational training can only be given when the training jobs are carried out in the same way , with the same operations , the same tools and the same machines as in the occupation itself.
3. TVET will be effective in proportion as it trains the individually directly and specifically in the thinking

- habit and the manipulative habits required in the occupation itself
4. TVET will be effective in proportion as it enables each individual to capitalize on his or her interests , aptitude and intrinsic intelligence to the highest possible degree
 5. Effective TVET for any profession ,calling, trade, occupation or job can only be given to the selected group of individuals who need it , want it, and are able to profit by it.
 6. TVET will be effective in proportion as the instructor has had successful experience in the application of skills and knowledge to the operations and processes he undertakes to teach.
 7. For every occupation, there is a minimum of productive ability which an individual must possess in order to secure or retain employment in that occupation .If TVET is not carried to that point with that individual, it is neither personally nor effective.
 8. TVET must recognize conditions as they are and must train individuals to meet the demand of the market even though it may be true that more efficient ways of conducting the occupation may be known and that better working conditions are highly desirable.
 9. The effective establishment of process habits in any learner will be secured in proportion as the training is given on given on actual jobs not on exercise or pseudo jobs.
 10. The only reliable source of content for specific training in an occupation is in the experience of masters of the occupation.
 11. For every occupation, there is a body of content which is peculiar to the occupation and which practically has no functioning value in any other occupation.
 12. TVET will render efficient social service in proportion as it meets the specific training needs of any group at the time they need it and in such a way that they can most effectively profit by the instruction.
 13. TVET will be socially efficient in proportion as in its methods of instruction and its personal relations with learners it takes into consideration the particular characteristics of any particular group which it serves
 14. The administration of TVET will be efficient in proportion as it is elastic and fluid rather than rigid and standardized.
 15. While every reasonable effort should be made to reduce per – capital cost, there is a minimum below which effective vocational education cannot be given, If the course does not permit of this minimum of per capital cost, TVET should not be attempted. The principles are guide lines to any successful vocational technical education programmes.

Review of the Curriculum of Vocational Technical Education Programmes

The curriculum of vocational and technical education programmes in secondary schools, technical colleges, colleges of education and universities should be modified to meet the needs of the society and where the schools are situated. Planning for the curriculum that is relevant to the needs and experiences, emphasis at the foundational level must be on the acquisition of practical skills.Ojimba (2012) identified six problems associated with the current curricula in Nigeria. They are:

- The curricula are based on foreign model which has evolved under ideal conditions (staff, equipment, infrastructure, training opportunities, and e.t.c.) that are not easily duplicated in developing countries.
- There is a basic lack of textbooks in the area and most of the available textbooks have foreign background and often illustrated with examples from outside the local environment.
- There is a shortage of highly competent indigenous teaching and support staff with sufficient practical experience of technology.
- The curricula are adjudged to be too academic and overloaded with intellectual content in pure science and mathematics at the expense of basic engineering and technology.
- Inadequate provision of humanities, social sciences, business management concepts and entrepreneurial skills development.
- The teaching approach follows the conventional method of transferring knowledge across through the lecturer reading out to the students who would then take down notes.

Conclusion and Recommendations

The study concluded that prevocational courses are given at primary and junior secondary schools. It should also be given at senior secondary school level because students are required not to study the same depth of content. It also revealed that pre-technical courses expose students to moderate practical content; moderate scientific and technological content.Pre-professional courses expose students to less practical content, more scientific and technological content. Pre-professional course is a little bit above ordinary level but lower than degree level. Vocational education is any form of education that prepares individuals for employment in various occupational areas. This can be obtained in senior secondary schools and technical colleges. Vocational education can also be obtained in higher education if the primary purpose is to secure employment. Based on the discussion of this

paper, it is recommended that various institutions of learning should adopt pretechnical, prevocational, vocational and pre professional programmes in training their students. These programmes should be tailored according to the needs of the students. Occupational competencies required for training vocational technical education students in various institutions should also be adopted according to the level of the institution and the performance of the students.

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