

**SCHOOL INPUTS AND PRODUCTION OF
QUALITY TECHNICAL TEACHERS IN
SELECTED INSTITUTIONS IN SOUTH
WEST, NIGERIA.**



BY
**UNIVERSITY
OF LAGOS**

OLUSANYA SIJIBOMI OLUBOYEJO

NOVEMBER, 2010

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CERTIFICATION

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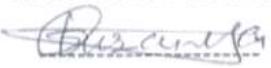
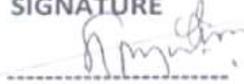
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DEDICATION

This work is dedicated to my loving wife and children, Mrs Olusola Olakunbi Olusanya, Bidemi, Olubowale and Banke for their prayers and moral support.



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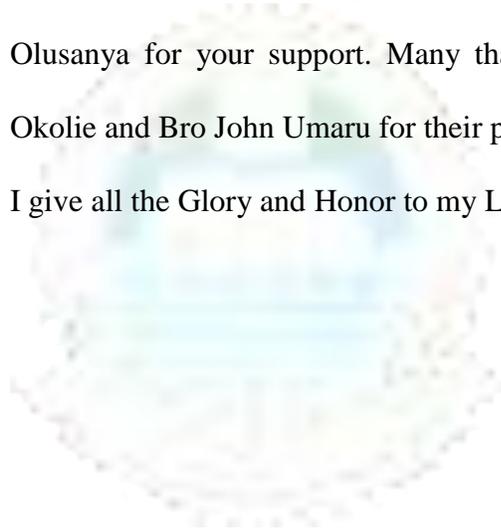
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ABSTRACT

This study examined the influence of some school input variables and the production of qualitative technical teachers in some selected institutions in south west, Nigeria. Seven research questions were raised and five research hypotheses were postulated and tested. Hypotheses one tested three research questions while hypothesis two to four tested the remaining four research questions.

The study took its framework from the Hezel Crag's Model of an effective school system with emphasis on supporting input provision. The model was further strengthened with Charles Posser's General Theories of Vocational education (GTVE).

Three hundred and forty-four college of education year three students and ninety-nine lecturers were used for the study analysis of data was conducted using mean, standard deviation, Pearson product moment correlation (PPMC) one way analysis of variance (ANOVA) was used to indicate the level of variation in each of the following: curriculum, academic staff TVE perception, work morale, administrative managerial skills, learning time and availability of instructional materials and equipment and production of quality technical teachers. The study further ascertained explicit gender-based nature of enrolment into the TVET programme in line with the millennium Development Goal three (MDG3) recommendation. ANOVA, more than other statistical tool enables the researcher performs the interaction influence among the independent variable.

The study concluded that all the school input variables studied had a weak relationship with qualitative technical teacher production. The study found that institutional location affect production of technical teachers College of Education in South West, Nigeria. Therefore, it can be inferred that improved lecturers' perception and moral, administrative skills, parents' perception and moral, availability of modern machine and infrastructural facilities will enhance qualitative technical teacher's production in Colleges of Education in South West, Nigeria.

The study systematically generated and used base-line data to develop a unique model for entrenching a more sophisticated TVET programme in south west Nigeria in particular; and which could be generalized for Nigerians a nation in development. In essence, the study pursued some challenging ideology which basically used human needs satisfaction to add essential values to knowledge, development, transformative procedure as well as system balancing.

CHAPTER ONE

INTRODUCTION

Background to the Study

The importance of qualitative technical education in any society cannot be over emphasized. For economic development of any country, technical vocational education and training (TVET) has been recognized as the main focus in both the developed and developing countries (Olaitan, 2000). At a time when shrinking of job market is a global phenomenon, technical and vocational education provide an answer to growing unemployment especially in a developing country like Nigeria. The main purpose of technical and vocational education (TVET) is to provide skilled manpower in applied science, engineering technology and commerce to operate, maintain and sustain the Nigeria nation's economic activities for rapid socio-economic development Annual report of the FME (FME, 2009). As an integral part of general education, TVET is a means of preparing for occupational fields and for effective participation in the world of work. As an aspect of lifelong learning and preparation for responsible citizenship, TVET is designed to impart necessary skills and competencies leading to production of enterprising and economically self-reliant individuals who have the potential to generate employment and reduce poverty. It can thus be said that vocational education has a specific relation to working life and is clearly distinguishable from straight jacket academic education.

The United Nations, Education, Scientific and Cultural Organization (UNESCO, 2001) considers technology and vocational education as a comprehensive term for the study of

technologies and related sciences which entails the acquisition of practical skills and knowledge in addition to general education. Going by this view, technology education ought to play enormous role in National development through equipping individuals with skills and competencies with which they can be gainfully employed in numerous jobs and with which they can advance in such jobs. Developed Nations such as the United State of America (US) and Russia, have invested heavily in science and technology education. These nations introduced technology education in the form of technical and vocational Education in all levels of their education system. Krueger (2005) reports that in the EU more students were enrolled in the technical and vocational stream (57.6%) at the upper secondary level than in the general stream (42.4%) and that in West Germany and Austria, 77% of upper secondary students and in Italy 72% were enrolled in vocational studies. The emphasis on technical and vocational education in the European countries is very high. In the same vein, the government of India, realizing that the possibility of development mainly lies on massive spread of TVET, launched a massive programme of strengthening the existing system of TVET institutions in the various communities with the assistance of World Bank under the Technical Education Project phase III (Ray, 2003).

Nigeria as a country, practises a mixed economy and still remains a developing country after 50yrs of her independence, (Oguntoye, 2004). It is a nation characterized with diversified problems. It is observed that there is acute unemployment where majority of graduates from educational institutions in Nigeria are roaming about seeking for gainful employment. Due to the type of education they acquired, they are unskilled for industry and also unable to create

job for themselves. Poverty level is very high because of unemployment. According to Ejiogu (1995) Nigeria needs to work not necessarily harder but essentially smarter. The general characteristics of our economy are low production due to poor production technique (Olaitan, 2000). Realizing that the possibility of self-reliance, sustainable economic growth and national development lies on TVET, the Nigerian government introduced Technology Education. The National Policy on education of (FRN, 2004) was enacted.

The present Technology Education Curriculum in Nigeria emphasizes acquisition and development of skills. This has led to the introduction of Technical and Vocational Education at all levels of her education system. Technical and Vocational Education is offered at the different levels as portrayed in the structure of education on the National Policy on Education.

Policy wise, the National Policy on Education (FGN, revised 2004) stipulates the expectations and goals of Technology Education for the various levels of Education in Nigeria. At the primary level, it is expected to provide the child with basic tool for further educational advancement. At this level enormous emphasis is expected to be placed on technological awareness. At the junior secondary school (JSS) level, provisions are made for pre-vocational electives, such as Introductory Technology, Business studies, Agriculture and Home Economics subject. The emphasis is on practice. The Senior Secondary School (SSS) level is comprehensive with vocational electives. The tertiary level of education: {Universities, Polytechnics and Monotechnics and Colleges of Education (Technical)} offer various forms of Technical and Vocational Education programmes. These are aimed at, among others,

contributing to national development through relevant high-level manpower training in various technologies.

By way of broadening the scope, it could be rightly said that in Nigeria, technical and vocational education (TVE) is available at the non-formal and formal educational settings and at the secondary and tertiary levels. In essence, institutions where TVE can be accessed include: Universities of Agriculture and Universities of Science and Technology which are at the apex, while there are 14 of such institutions in the Federation. These specialized TVE-oriented universities came on board in the 1980s with the establishment of the Federal University of Technology, Owerri (FUTO) in 1980 and the Federal University of Technology, Akure (FUTA). These were established 32 and 33 years respectively after the premier university, University of Ibadan was established. The earliest university of agriculture was the Federal University of Agriculture, Abeokuta (UNAAB) which was established in 1982, and the first university of science and technology to come on board is state owned-the Enugu State University of Science and Technology (ESUST), established in 1981 (FME, 2007a; NUC, 2009).

These institutions, which have long been in existence (since the colonial era and thus preceded the universities) also provide high level technical manpower in a variety of technical and vocational disciplines. As at 2005, there were 57 Polytechnics. The Monotechnics increased in number from 30 in the year 2000 to 42 in the year 2005 with student enrolment put at 20,853 (FME, 2007). These well over 50 Polytechnics and over 40 Monotechnics offer

courses at Pre-National Diploma (Pre-ND), National Diploma (ND) and Higher National Diploma (HND) levels. In 2005 alone, the National Board for Technical Education (NBTE), which is the supervisory agency for these institutions, certified 74,568 Polytechnic graduates and about 40, 000 graduates of the Monotechnic institutions (FME, 2007). Another type of institution in the production of TVET are Colleges of Education. There are 72 Colleges of Education (FME, 2007b) presently in Nigeria under the auspices of the National Commission for Colleges of Education (NCCE). Though, only eleven (11) of them are specialized and tagged College of Education (Technical), an appreciable number of other Colleges of Education have departments that offer technical and vocational-oriented courses. These institutions produce qualified non-graduate teachers mainly for the secondary schools especially for the junior secondary level [also referred to as Basic 9) in consonance with the Universal Basic Education (UBE) Scheme].

The technical colleges are at the level of the senior secondary schools. There are 19 Federal, 137 State and 3 Local government-owned technical colleges coordinated by the National Board for Technical Education (NBTE). These colleges represent the provision the National Policy on Education (NPE) made for those who are to be identified early as having both aptitude and ability for technical and vocational orientation. The flow to these colleges, as mapped out by the NPE is primarily from the junior secondary level where students are expected to transit to the technical colleges.

The objectives of vocational and technical education and training are to develop key competences, skills and vocational qualifications at an internationally comparable level and to

provide knowledge and skills for employment, further education and lifelong learning. All courses include general education for continuous personal development, environmental studies and personal health care. Every vocational or technical course must also contain subjects aimed at the development of communication skills, the development of knowledge and awareness, learning about national integrity, national identity, one's own cultural tradition as well as other cultures and civilisations, the development of talents and training for artistic expression and perception of arts. Courses must be provided at an internationally comparable level and must enable participants' involvement in the international labour market.

Skills are critical in the structural adjustment of economies and must be an integral part of broader development strategies if it is to deliver on its substantial potential to contribute to overall productivity and employment growth. As economies move from relative dependence on agricultural production to manufacturing and service industries, workers and enterprises must be able to learn new technical, entrepreneurial, and social skills. Inability to learn new skills because of inadequate basic education or lack of opportunity slows the transfer of all factors of production from lower to higher value added activities. (Onyene , Salisu , Johnson, and Olusanya , 2007).

Education is a multi-dimensional sector that provides services to all sectors of the national economy. It links with: Population and social welfare sector, Manpower and Women

development sector, Health sector, Mass media, Higher Education and science and Technology, Industry, Socio-Economic growth. It has been established that the level of technological development and acquisition has become the basis for determining social, economic and industrial development of a Nation. The wealth and economic self-reliance of any Nation is directly proportional to its level of scientific and technological development. In order to solve the problem of poverty and low quality of life index, most developed countries have long turned attention to implement those strategies, which will lead to self-reliance, sustainable economic growth and national development (Awosope, 2006).

All nations in the world are faced with the challenge of improving the capacity of their work force to respond to their own national development needs and to the demands of a rapidly changing, more globally competitive world. The future success not just of nations, but also of individuals, enterprises and communities will increasingly depend on a pool of transferable and renewable skills and knowledge. In the short and medium terms, high quality technical teacher training is needed to improve TVET, as well as high quality professional development for teachers already in service. A small rise in teacher quality can yield considerable improvement in outcomes (UNESCO, 2004). Technical teacher training is an educational exposure that assists interested individuals to acquire manipulative skills in their chosen occupations. The individual technical teacher is specifically trained for competency in classroom and workshop instructions. In technical and vocational teacher education, instructional objectives are directed towards preparing, through training, the needed human resources for commercial, industrial and self employment ventures.

According to the National Policy on Education (FRN 2004), Teacher Education programme shall continue to be given major emphasis in all educational planning and development and that the minimum qualification for entry into the teaching profession shall be the Nigeria Certificate in Education (NCE). The goals of teacher education as spelt out in the National Policy on Education (2004) are to:

- ✚ produce highly motivated, conscientious and efficient classroom teachers for all levels of our educational system;
- ✚ encourage further the spirit of enquiry and creativity in teachers;
- ✚ help teachers to fit into social life of the community and the society at large and enhance their commitment to national goals.
- ✚ provide teachers with the intellectual and professional background adequate for their assignment and make them adaptable to changing situations;
- ✚ enhance teachers' commitment to the teaching profession.

The FRN, (2004) states further that all teachers in educational institutions shall be professionally trained. Teacher education programmes shall be structured to equip teachers for the effective performance of their duties. In order to maintain effectiveness in our educational system, the minimum qualification for entry into teaching profession shall be the Nigeria Certificate in Education (NCE). Colleges of Education in Nigeria are responsible for the production of NCE teachers.

The philosophy of Technical Education at NCE (technical) level is to provide technical teachers with the intellectual and professional background for teaching technical subjects and

to make them adaptable to any changing situation in technological development not only in Nigeria but also in the world at large. The objectives of Technical Education as stated in the minimum standard of National Commission for Colleges of Education (NCCE) 2002 are to:

- produce qualified Technical Teachers and Practitioners of technology capable of teaching Introductory Technology in the Junior Secondary Schools.
- produce Technical NCE Teachers who will be able to inculcate Scientific and Technological attitudes and values into the society.
- produce qualified Technical Teachers motivated to start the so much desired revolution of Technological development right from the Nigerian Schools.
- prepare Technical Teachers so as to qualify them for a POST-NCE degree program in Technical Education.

For the stated goals of Technical Education at NCE (technical) level to be achieved effectiveness of the programme is required. Onyene (2004), is of the view that school organizational effectiveness as well as internal efficiency are control to the essence of educational system. There is modest evidence or evidence of effectiveness of Nigeria teacher education system (Ejiogu, 2008; Nwankwo, 1982). Effectiveness is an indication of the impact of a group of activities performed on the achievement of intended learning outcome. In relation to a programme or curriculum, it is the observed impact of that programme in achieving its set goals and objectives. An effective programme or curriculum is result-oriented. It is rooted on functional components whose characteristics enhance the achievement of results within the framework of the set goals. The characteristics of effectiveness denote some of those intrinsic factors that stimulate a programme or a

curriculum to assist its participants to realize the objectives of that programme. In an educational culture, these factors will always culminate in bringing about a broader spectrum of experience which the learner needs. In this circumstance, the programme now assists the learner to learn the techniques of learning, the skill of listening, thinking and doing and how to critically evaluate experiences acquired. The programme should be capable of satisfying the aspirations of its learners for gainful living.

In order to enhance effectiveness in the production of qualitative technical teachers in Colleges of Education, among others, certain school input factors must supposedly be in place to positively contribute to the production of qualitative technical teachers. Such, school inputs used in this study include: curriculum, lecturers' attitude, lecturers' morale and commitment, administrative management skills, learning time, availability of instructional materials and equipment. There are measurable attributes in determining the qualitative production of technical teachers in the studied institutions. These attributes are students' learning outputs. In this study, the learning outputs measured are students' Performance in and their Perception of Technical and Vocational Education courses.

The Nigeria National Policy of Education (FRN, 2004) stated in Paiko and Yaduma (2007) acknowledges that no education system can be better than the teachers who run and operate it. This is very true of technical education. The importance of technical education in nation building as well as the high cost of establishment and running of technical educational programme are major reasons why those who are charged with the responsibility of

leadership of technical education institutions should be highly professional, adequately qualified and highly skilled, to be effective in the discharge of their roles.

These roles include the following:

- provision of the teachers with enabling environment that will guarantee intellectual and professional background adequate for their assignment and make them adaptable to changing situation and development;
- provision of the standard for establishing and maintaining technical schools with adequate workshop facilities, equipment and instructional materials.
- Organization of regular supervision and inspection of all the technical programmes.
- liaising between the school and the community for assistance when necessary.
- sourcing for funds for technical programmes in the school.
- appraising the performance of technical schools periodically

These roles can be effectively executed only by those who are professionals in Technical Education and have relevant experience in the art and process of the subject matter.

Teacher education in Nigeria has given appreciable attention to the training of technical teachers. Various courses leading to various areas of specialization in technical education are offered in Nigerian tertiary institutions (Federal, State and Private).

The Government through the following agencies supervises tertiary education in Nigeria.

They are the National University Commission (NUC), National Board for Technical Education (NBTE), and National Commission for Colleges of Education (NCCE).

For the purpose of improving education, Peterson and Peterson (2007) suggest that principals incorporate teacher evaluation programs that promote highly qualified teachers and high academic standards. By (1) increasing the amount of objective data; (2) increasing teacher involvement, and (3) increasing the technical and sociological quality of the evaluation process and principals can assist teachers in improving their instructional practices. Owings, Kaplan, and Nunnery's (2005) study investigated the relationship between principal quality and student's achievement and found that principals with higher ratings had higher levels of student's achievement in their schools.

This idea is supported by the work of Glanz, et al., (2007) which states that, it is reasonable to believe that principals who practice and build skills in leadership for teaching and learning can positively impact their schools' learning and students' performance. MetLife (2003) cited in Glanz, Shullman, Sullivan (2007) conducted a study and found that principals play an important role in motivating teachers and students.

Moreover, research affirms that educational leaders who pay close attention to instructional matters at the classroom level effect successful teaching, and thus learning; but again, it's indirect influence (as cited in Glanz, Shulman, Sullivan, 2007).

Statement of the Problem

Efforts at implementing the technical education aspect of the National Policy on Education appears to be jeopardized by the scarcity of competent technical teachers (Adegoke, 2002). Unfulfilled roles of competent technical teachers in the nation's human-power development appear to be so enormous, because if the quality of her teaching stock is low, students or their products would seldom rise above the knowledge of their teachers. These unfulfilled roles pose a lot of challenges to the development of TVET in Nigeria.

The policy provision insists here, that training in technical education should be a conscious effort to acquire an experience, which would tend to create room for a change in behaviour. Training in this sense again is to every member of Nigerian society an unsatisfied desire to learn which stems from the curiosity to give meaning to their lives. It therefore becomes important to ensure that knowledge transmitted to students in their study in an optimal manner is such that will ensure life – long career, self-help, self-actualization, and not just information, (Taiwo in Afemike 2004). Afemike added that ‘teacher education suffered some setbacks as greater emphasis was placed on how to teach rather than on what to teach’.

One other major challenge is inadequacy in number and quality of teaching staff. Insufficiency and Relevance when considered from two major stands are the two most deluging challenges confronting the education system in Nigeria today. Thus, by number, it is implied that there is lack of adequate teacher in the quantity of teachers that are available for the various levels of technical education in which case, the nation would have to continue producing as was the intention of United Nations Development Programme (UNDP), as she

established the first ever college of education technical, namely the Federal College of Education (Technical), Akoka by 1969, in Nigeria.

Another challenge yet, is the situation where the carrying capacities of existing institutions where class-size per teacher has been exceeded due to the exponential rise in student population in the last two decades Nigeria University Commission (NUC, 2005). These extant quality and relevance of content and competence of the teaching stock at different levels of the system leaves a great deal to be desired.

This may consequently suggest that the National Policy on Education (NPE) does not reflect the contemporary social needs with all her economic confrontations. This researcher upholds the claim that ‘good teachers would beget good students from which the system can get a replenishment of its teaching stock. In the same view, poor teachers will beget poor students and consequently poorer future teachers’ Furthermore, lack of managerial skills among college managers may also stand out as a serious problem affecting TVET programme effectiveness in the face of competing global skilled economy (Onyene, and Olusanya, 2009). It is obvious that poor management of financial resources, will result in lack of modern tools and equipment, poor maintenance of facilities, inadequate teaching materials, with the attendant incessant closure of schools and inadequate coverage of the curriculum while the programme lasts. At present, there are no indicators or measures of the quality of the products because of lack of adequate feedback into the colleges of education (technical). Nigeria also has unprecedented high unemployment rate due to probably to lack of skills among youths, and poor job opportunities; high crime rate, extensive dependence on

government for wage bills for survival, high rate of hunger likely due to low income, and many other social problems resulting from ineffectiveness of TVET. It is against these challenges that this study investigated the relationship between input factors, (such as curriculum, academic staff TVE perceptions, work morale, administrative managerial skills, learning time and availability of instructional materials and equipment), and production of quality technical teachers. The study further ascertained explicit gender-based nature of enrolment into the TVET programme in line with the Millennium Development Goal three (MDG 3) recommendations.

Purpose of Study

A great deal has been said and written about the problems and short comings of Nigerian technical and vocational education. What is lacking is corresponding number of empirical studies that will examine the utilization of input factors by technical and vocational teachers and pupils at the classroom level. The aim of the study therefore, is to analyzed and investigated the major factors influencing production of qualitative technical teachers in Colleges of Education in southwest, Nigeria. In order to help identify series of practical, affordable suggestions on meeting the challenges of low skilled jobless.

The study was carried out to achieve the following objectives:

1. to determine the extent of influence of teachers' perception on quality technical teacher production in Colleges of Education.
2. to examine the extent of influence of teachers' morale on quality technical teacher production in Colleges of Education.
3. to identify how managerial skills among Colleges of Education administrators affect quality technical teacher production in those Colleges.
4. to highlight the effect of academic learning time on quality of technical teachers production in Colleges of Education
5. to identify the effect of availability of modern machine and equipment on quality technical teacher production in Colleges of Education.
6. identify TVET production indicators which would enhance classroom infrastructure and workshops in colleges of education as major institutions charged to produce qualitative technical teachers.
7. to determine the level of association between the students' gender and quality technical teacher production.

Research Questions

The following are the research questions that guided the study:

1. To what extent does teachers' perception influence quality technical teacher production in Colleges of Education?
2. To what extent does teachers' morale influence quality technical teacher production in Colleges of Education?
3. Do managerial skills among Colleges of Education administrators affect quality technical teacher production in those colleges
4. Does academic learning time affect quality technical teacher production in Colleges of Education?
5. Does the availability of modern machines and equipment affect quality technical teacher production in Colleges of Education?
6. What is the relationship between availability of infrastructural facilities and quality technical teacher production in Colleges of Education?
7. What is the level of association between the students' gender and quality technical teacher production?

Research Hypotheses

It is conceptualized that schools with adequate supporting inputs such as: Curriculum, academic staff TVE perceptions, work morale, administrative managerial skills, learning time and availability of instructional materials and equipments and strong support from parents, are likely to be more effective than schools with less positive inputs. The following operational hypotheses were tested:

1. Teachers' morale, teachers' perception, administrators' managerial skills and gender will not relate significantly with qualitative technical teacher production.
2. Quality technical teacher production in Colleges of Education in Nigeria will not significantly differ due to their administrators' managerial skills.
3. Quality technical teacher production in Nigerian Colleges of Education will not significantly differ due to differences in institutional location and learning time.
4. The location and availability of instructional materials will not significantly impact on the production of qualitative technical teachers.
5. Infrastructure will not significantly on the production of quality technical teachers

Scope of Study

The scope of the study was school input factors namely: curriculum, school administrators skills, lecturers' moral and commitment, lecturers' attitude, parents attitude, school-home dislike, in influencing the production of qualitative technical teachers in colleges of education in south western region, Nigeria. The scope also included the effects of the school

inputs on the students' learning outcomes in technical and vocational education and perception towards TVE in the studied institutions. The colleges covered in the study were: Federal College of Education (Technical), Akoka; Lagos; State College of Education Ikere Ekiti, Ekiti State; Osun State College of Education, Ilesha, Osun State and Tai Solarin Colleges of Education in Ogun State .

Significance of the Study

The study was considered significant in that it has indicated that production of qualitative technical teachers in colleges of education in south western, Nigeria, is influenced by the school input factors.

Also, the data generated in this study provides empirical basis for evaluating/analyzing the effect of school inputs on students' learning outcome performance perception in TVE. Researchers and other professionals may wish to take advantage of the result of this study to carry out similar researches in other zone of the country.

In addition, it has provided the needed information and framework to policy makers, curriculum developers and educational administrators on the importance of effectiveness in the production of qualitative technical teachers in their institutions.

The findings of this study provided expanded literature for researchers on the effectiveness of school inputs in other institutions or organizations.

Operational Definitions of Terms

School Input: The resources used directly or indirectly to facilitate teaching and learning in the college of education. In this study, these include Curriculum, Schools' administrators'

skills, lecturers' moral and commitment, lecturers' attitude, and facilities (workshops, laboratories, equipment, tools, and instructional materials).

Quality: In this context, it is the measure of the students' learning outcomes (performance in and perception towards TVET Courses).

School effectiveness: It is the ability school inputs into qualitative technical teacher training programme to positively improve students' learning outcome (performance in and perception towards TVET Courses).

Technical and Vocational Education: National Policy on Education (2004) States that Technical and Vocational Education is used as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life.

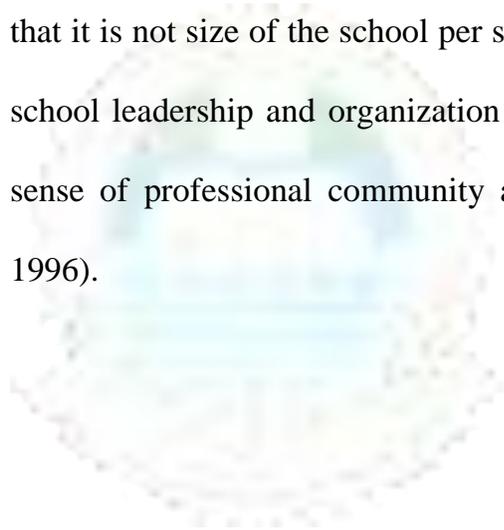
Learning Outcomes: These are the measurable behaviours expected from the students in form of achievement in, and attitude towards Technical and Vocational Education.

Performance in Technical and Vocational Education Course: This refers to the students achievement scores in a standardized multiple-choice test in Technical and Vocational Education Course.

Perception towards Technical and Vocational Education: This is students' predisposition to learn or not to learn Technical and Vocational Education Course.

School Size and Climate

School size is the student's population in a school while school climate refers to social cohesion and working environment. School size is an important correlate of teacher outcomes. Larger schools tend to have a more bureaucratic environment, with many rules and strict roles. In highly bureaucratic schools with rigid authority structures or a more utilitarian organizational culture, school climate and social cohesion may be negatively affected, which in turn results in alienation, lack of social engagement and lack of commitment (Lee et al., 1993; Shaw and Reyes, 1992). However, recent research suggests that it is not size of the school per se which is the causal factor, but rather the ways in which school leadership and organization create working environments which are supportive of a sense of professional community and of responsibility for student learning (Louis et al., 1996).



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CHAPTER TWO

REVIEW OF LITERATURE

Introduction

In reviewing relevant literature on school inputs and production of quality technical teachers in colleges of education, the following sub-headings were reviewed in this study: National certificate in education programme, Lecturers' morale and commitment and production of qualitative technical teachers, Students performance, School size and climate, School management, Professional autonomy, Individual and professional factors in teachers commitment, Administrator's experience and teacher's perception, Purpose of TVE and the Theoretical frame work were discussed.

The National Certificate in Education Programme.

The programme is such that the pre-service technical teachers will undergo a 3yrs course divided into three levels. It is compulsory for the students to attempt all the courses in 100 and 200 levels while options are allowed in 300 level. Colleges of education award Nigeria certificates in education.

Table 1: Credits to Be Earned for Graduation

	100L	200L	300L
Automobile Technology	4	4	5*
Building Technology	4	4	5*
Electrical/Electronics Technology	4	4	5*
Metalwork Technology	4	4	5*
Woodwork Technology	4	4	5*
Workshop Management	-	-	1
Technical Drawing	4	4	2
Introduction to Vocational Education	1	-	-
Entrepreneurship Education	-	2	2
Applied Mechanics	2	-	-
Fluids	1	-	-
Heat Engines	-	1	-
Mathematics	2	-	-
Physics	2	-	-
Chemistry	-	2	-
Special methodology	-	2	-
SIWES	-	2	-
Project	-	-	2
TOTAL	32*	33*	14

Source: National Commission Colleges of Education Minimum Standards (2002)

According to the minimum standards of NCCE (2002), for a student to graduate, he must earn total minimum of 128 to 133 credits covering: Education, Project, General Studies;

Teaching Practice and a double major or two teaching subjects. The minimum credits required for graduation for the technical teachers are as stated below:

Education	=	36
General Studies	=	14
Teaching Practice	=	6
Technical Education	=	77
Total	=	133 credits

The methods of assessment or evaluation are: Continuous Assessment (C.A) and End of Semester Examination. In addition, a registered student for the NCE programme must attain a 75% attendance to be allowed to write the end of Semester Examination. NCCE (2002) states that all students admitted into the NCE (Technical) programme would offer all the courses listed in the first and second year.

The student will be allowed to choose an area of specialization in the third year selected from the following:

- Automobile Technology
- Building Technology
- Electrical and Electronics Technology
- Metalwork Technology
- Woodwork Technology

Apart from the above, the curriculum further states that who shall be engaged in supervised teaching practice at the junior secondary school level for a period of 12 weeks. For enhancing the qualitative technical teacher production, the curriculum recommended 16

weeks compulsory students' industrial work experience scheme (SIWES) which must be carried out in a relevant engineering firm. The objectives of SIWES are:

- To introduce the student to the industry.
- To expose the student to the operation and use of industrial machinery.
- To acquaint the student with the management structures of industrial organization and
- To develop good work habits.

It is compulsory for the technical teachers to write a project in technical education.

Grading System

The National Commission for Colleges of Education (NCCE) is adopting the grading system using both letter (A-F) and figure (0-5) grades. It is more consistent with the degree classification in use in Nigeria, and should therefore, be adopted by the colleges of education. Thus, the grading system for the NCE will be similar to what operate in the Universities. The percentage score, letter grade, grade point average (GPA), and cumulative Grade Point Average (CGPA), and the status of pass are: A minimum pass mark of 40% (equivalent to Grade Point of 1) should be adopted by all colleges. Also, a minimum GPA of 1.00 is required for graduation.

Grade Point, Grade Point Average and Cumulative Grade Point Average:

Grade point: The grade point derives from the actual percentage raw score for a given course: the raw score is converted into letter grade and a grade point.

The commission is adopting the grading system using both letter (A-F) and figure (0-5) grades. It is more consistent with the degree classification in use in Nigeria, and should therefore, be adopted by the colleges of education.

Table 2: Grade Point, Grade Point Average and Cumulative Grade Point Average:

Credit units	Percentage scores	Letter grades	Grade points (GP)	Grade points Average (GPA)	Cumulative Grade point Average (CGPA)	Level of pass in subjects
Vary according to contact hours assigned to each course per week, per semester, and according to work load earned by student.	70-100	A	5	Derived by multiplying 1&IV and dividing by total credit units.	4.50-5.00	Distinction
	60-69	B	4		3.50-4.49	Credit
	50-59	C	3		2.40-3.49	Merit
	45-49	D	2		1.50-2.39	Pass
	40-44	E	1		1.00-1.49	Low pass
	0-39	F	0		0 - 0.99	Fail

Source: National Commission Colleges of Education Minimum Standard (2002)

Grade Point (GP): The grade point derives from the actual percentage raw score for a given course: the raw score is converted into letter grade and a grade point. See table 2

Grade Point Average (GPA): The grade point average of weighted points earned in courses taken during semester. The Grade Point Average is obtained by multiplying the Grade Point

attained in each courses by the number of credit units assigned to that course, and then summing these and dividing by the total number of credits taken for the semester.

Cumulative Grade Point Average (CGPA): this is the up-to-date mean of the Grade Points earned by the student in a programme of study. It is an indication of the student's overall performance at any point in the training programme.

$$\text{CGPA} = \frac{\text{Sum of Total Grade Points} \times \text{Respective Credit Units for Semester}}{\text{Total Credit Units for all courses registered by the student}}$$

Qualifications of Academic Staff: As stated in the minimum standards of NCCE (2002);

- i. every academic staff should be a professionally qualified teacher (a minimum of NCE or PGDE).
- ii. a good bachelor's degree (not less than a second class lower division) in the relevant discipline is the minimum qualification for appointment as Lecturer III or its equivalent.
- iii. any H.N.D holders, with a minimum of merit, qualify to be appointed as Instructors.
- iv. a Higher degrees or additional professional qualifications in the relevant disciplines are added advantages.

Lecturers' Morale and Commitment and Production of Qualitative Technical Teachers

Morale is defined as 'a forward looking and confident state of mind relevant to a shared and vital purpose' (Smith, 1973, in Koay, 1997,). Washington and Watson (1969), as cited in Lumsden, (1998) defined morale as the feeling a worker has about his job based on how the worker perceives himself in the organization and the extent to which the organization is

viewed as meeting the worker's own needs and expectations. More specifically, Smith (1973, as cited in Koay, 1997) defines it as:

the attitudes of the employees towards their employing organization either in general or towards specific job factors such as supervision, colleagues and financial incentives. It can also refer both to the general satisfaction and to enthusiasm of the individual towards the group of which he or she is a part. Morale plays an integral part in a person's productivity at work. Past studies by Koay (1997) have shown that there is a direct link between morale and work productivity.

Morale has also been found to be essential to the success of an educational institution.

Koay's study on the morale of secondary school teachers found that schools that were judged superior have higher teacher morale than schools that were rated lower. Miller (1981) notes that teacher morale may have a positive effect on the attitude of students. Raising teacher morale level does not only make teaching more pleasant, but also learning more pleasant for the pupils, thus creating a more conducive learning environment.

In this study, teacher's morale was operationalized from the teacher's perspective to include enjoyment of using technology, perception of colleagues' morale regarding technology use, opportunities for collegial sharing of technology ideas and uses, satisfaction with work environment, and extent to which the position provides professional growth and is satisfying. From the administrator's perspective, it was operationalized to include the extent to which faculty are rewarded for intent to use technology, the promotion of innovation/creativity within the technology use plan, specific plans for teacher technology maintenance and support, and incentives to participate in professional growth and for incorporating technology as stated in the technology use plan. Teacher morale influences all aspects of the

teaching and learning environment within the school setting. Morale can be made up of many commitment and satisfaction elements, including availability of role models, rewards, recognition, encouragement, professional development, incentives, empowerment in terms of support (technical) and the ability to demonstrate creativity in the school setting. These elements provide the foundation upon which a teacher can make a positive difference in the learning environment.

It may be that building a strong base of foundation knowledge and skills through well designed professional development provides teachers with more confidence in their abilities. This confidence is manifested in higher levels of morale. As schools increase expectations for technology in the classroom, the gap between current and required skills becomes critical. Without adequate support, teachers may be unsure of best practices, leading to unclear expectations and an inability to cope with change and a corresponding loss of morale. Consequently, proactive schools are advised to implement professional development programs early and often. Improved teacher skills in the classroom, in turn, help facilitate improved student performance. Through both personal improvement as well as their students' performance, it stands to reason that teacher morale increases.

Student Performance

An important source of self-efficacy and work satisfaction, which are both important correlates of commitment for teachers, is derived from how well their students perform. The ability profile of students in the classroom, both objectively and as perceived by the teacher,

is thus not surprisingly related to commitment. Classrooms with mostly low ability students or students for, whom the teacher has low performance expectations are associated with low teacher satisfaction and self-efficacy (Lee, Debrick, Smith, 1991). Although in the Eastern Caribbean public school system the ability level of students within classrooms is partly a policy issue, through selection processes for secondary education, and partly a neighborhood effect, it should be kept in mind that in and of itself more prestigious schools do not generally have a higher level of teacher efficacy or higher staff satisfaction or morale (Lee, Bryk and smith, 1993). In other words, it is the concentration of low ability students in one classroom, not the school as a whole, which negatively affects teachers.

School Management:

Management is the art of getting things done through people. In a broader sense, it is the process of planning, organizing, leading and controlling the efforts of organization members and of using all other organisational resources to achieve stated organisational goals.

Efficient school management, where information and resources are provided to teachers in a timely manner as required, is related to teacher satisfaction. Having easy, informal access to the school management is also associated with satisfaction (Lee, et al. 1993). Staff morale is higher in schools with clear and consistent rules and policies, which are enforced consistently. Schools with principals who exercise effective leadership have teachers who are more satisfied with their work and see themselves as more effective (Lee, et al., 1993). In schools where principals establish, share and reinforce the attainment of clear, school-wide goals for student performance and professional development, academic success is greater and

teachers are more satisfied and self-efficacious in their work. Effective performance evaluation procedures for teachers also enhance teacher effectiveness and student achievement because they furnish clear feedback on areas for improvement (Lee, et al., 1991).

Professional Autonomy

The quality or state of being independent and self-directing, especially in making decisions, enabling professionals to exercise judgment as they see fit during the performance of their jobs.

Schools' internal organization may also affect teacher outcomes. Teachers who have an at least moderate level of autonomy over their classroom practices and who feel they have a sense of control over what happens in their classroom report that they are more effective as teachers (Lee, et al, 1991), are more committed to their work (Rosenholtz and Simpson, 1990) and are more satisfied (Rosenholtz, 1989). Standardized curricula and centralized achievement testing have the effect of increasing alienation and reducing commitment to teaching, because they act as constraints on autonomy (Firestone and Pennell, 1993).

In schools which are organized into departments and teachers are encouraged to see themselves as subject-matter specialists, commitment to the school as a whole may suffer (Lee, et al., 1993). Teachers in communally organized schools (those having: 1) a system of shared values about learning, behaviour and students' futures, 2) common activities among all school members, and 3) an ethos of caring manifested in relations among teachers and an extended teacher role) have higher satisfaction, are seen by students as enjoying their work,

and have higher morale. These factors are in turn associated with lower rates of student problem behaviour and drop out (Bryk and Driscoll, 1998).

Boundary and Core factors

Teachers' work has been conceptualized as consisting of two main types of tasks: boundary task and core tasks. The latter are the essential instructional activities which directly produce student learning. Boundary tasks are those which must be dealt with by teachers and schools in order for the core tasks to take place. These include non-teaching tasks such as administrative work, maintaining orderliness and organization, and dealing with discipline problems, as well as the provision of an adequate physical environment, separated from other settings and provided with necessary equipment and supplies. Teacher commitment is higher when the school organization and management are able to buffer teachers from boundary tasks, allowing them to direct most of their energies to core tasks (Rosenholtz and Simpson, 1990).

Climate, Organization and Cohesion

Teachers' commitment to both teaching as a profession and to their schools is strongly related to general school climate (as assessed by the level of administrative support received, support for teacher autonomy and control, orderliness, buffering provided by management, and teaching help received (Riehl and Sipple, 1996)). Teachers' sense of efficacy in teaching, their sense of community within the school, and their expectations for success in advancing learning among their students, are related to orderliness of student behaviour,

support for innovation, administrative responsiveness, task interdependence (knowing other teachers' subjects), and inter-teacher support (Newmann, Rutter and Smith, 1989). Greater amounts of collegial interaction within schools are associated with greater teacher satisfaction and performance (Lee, et al., 1991). Positive, work-related interaction among teachers is important because it reduces the extreme isolation felt by many teachers in highly bureaucratized schools, provides opportunities to exchange support and assistance, provides exposure to new instructional options, and fosters a sense of community within the school (Rosenholtz, 1989; Rosenholtz and Simpson, 1990).

Several school reform attempts have focussed on increasing teachers' participation as a means of improving the sense of community within the school. Teachers' participation in school decision-making can under some circumstances increase commitment, especially when the participation concerns school policies or goals, when the goals of participation are clear, and where the school environment and principal are open and supportive of input from teachers (Firestone and Pennell, 1993). However, such restructuring efforts may only be associated with increasing work satisfaction for more experienced teachers (Conley and Levison, 1993). Teachers' willingness to participate in school decision-making is largely a function of their relationship with the principal; principals who are seen as more open, collaborative and supportive are more likely to generate genuine participation (Smylie, 1992).

More generally, school restructuring or reform is facilitated in school environments where there is a stronger sense of professional community among teachers, that is, a shared sense of purpose, a collective focus on student learning, collaborative activity, open attitudes toward

being observed and helped by others (deprivatized practice) and reflective dialogue. These conditions are also associated with a stronger belief among teachers that their students are capable of successful learning and that they are themselves responsible and effective agents in producing learning (Louis, Marks and Kruse, 1996). In these authors' eyes, education reform which focuses on increasing professionalization of the teaching cadre without attention to creation within individual schools of 'healthy, professionally sustaining environments' (Louis et al., 1996) are doomed to failure.

Individual and Professional Factors in Teacher Commitment

'Commitment' is a term that teachers frequently use in describing themselves and each other (Nias, 1981). It is a word they use to distinguish those who are 'caring', 'dedicated' and who 'take the job seriously' from those who 'put their own interests first'. Some teachers see their commitment as part of their professional identity, it defines them and their work and they 'get a lot of enjoyment from this' (teacher cited in Elliott & Crosswell, 2001).

Several individual factors have been found to be related to teachers' level of commitment. Female teachers are more committed than male, and older teachers are more committed than younger teachers. More experienced teachers, but not more highly educated teachers, have higher levels of commitment (Reyes, 1990).

Lecturers' Attitude

Attitudes are generally regarded as having been learnt. They predispose an individual to action that has some degree of consistency and can be evaluated as either negative or

positive (Fishbein and Ajzen, 1975). They are linked to beliefs and for each belief an individual would have a corresponding attitude. Attitudes have been linked to action and can be categorised according to their focus. According to Ejiogu, (1995), one's attitude is the basic component of how an individual ascribes meaning to his or her interpersonal and physical environment. Thus, behavioural attitudes indicate a person's judgment of performing the behavioural good or bad or that the person was in favour of or against performing the behaviour. Clearly, other things being equal, the more favourable a person's attitude is toward behaviour, the more likely the person would intend to perform that behaviour. Basically, it is expected that improvement in productivity level of any organization can be achieved by a total exhibition of positive attitude in the employee's work behaviour (Asika, 1995). If not, according to Ejiogu (1996), Nigeria will continue to have institutions of higher learning that will fail to deliver the nation from ranking 137th position out of 174 on Human Development Index (HDI) and the 19th present nation in the world (Ejiogu 1996). A dialectical relationship appears true for attitude and behaviour. Using structural equation modelling, Reynolds and Walberg (1992) found a causal influence of achievement upon attitude, whereas the finding of Imai's (1993) study contradicts this finding. Thus, there seems to be evidence of a two-way relationship between attitudes toward mathematics and achievement.

Beliefs and Performance

Belief over the years have been considered as one of the factors that affect performance. Perry, Way, Southwell, White, and Pettison (2005) have considered relationships between

the pre-service teachers' responses on the beliefs and mathematical knowledge surveys. Their summary of their findings are presented thus: Though the connections between beliefs and achievement were not striking, of interest is the consistency of the negative correlation of beliefs about the nature of mathematics to achievement test scores. This means that, the stronger the belief in the importance of computation and correct answers, the lower the achievement performance.

Southwell, White, Way, and Perry (2006) considered links between attitudes and mathematical knowledge as displayed in the two surveys. They summarised their findings in the following way: This study highlights a number of important results that provide further information concerning the links between achievement in mathematics and attitudes towards mathematics. It has identified two main factors of insecurity and confidence contributing to one's attitudes towards mathematics and teaching mathematics. In general, the study has indicated an overall trend towards positive attitudes towards mathematics and teaching mathematics. Despite this, the students' results on the mathematics achievement test were low, thus supporting other researchers' (Morris, 2001; Amarto; Chick, 2002; and Watson, 2003) findings. These low mathematics scores may seem contradictory in the light of more positive attitudes. They indicate, however, that students' espoused confidence in their mathematical ability does not necessarily ensure high achievement. To counteract this finding, the level of confidence in teaching mathematics is a better predictor of mathematical achievement than confidence in one's own ability. This may point to the relative stability of

attitudes towards one's own mathematical ability as a student compared to attitudes about teaching.

The clear connection between the attitudes and the achievement scales was generally as expected. The strength of the connection between the two suggests that, among other things, mathematics teacher educators need to enable pre-service teachers to have success in their mathematics while, at the same time, providing methods and models of good pedagogical practice.

Administrator's Experience and Teacher' Perception

Provosts in Colleges of Education are responsible for implementing instructional supervision of their teaching staff. Therefore, it is critical to determine if there is a difference between the experience of a provost and teachers' attitudes toward instructional supervision. Five models of instructional supervision were included in the survey: purpose, feedback, continuity, collaboration, and trust. Several studies exist on how teachers' attitudes toward instructional supervision vary dependent on provosts' years of experience. This study will provide additional research to this area of interest. Teachers and administrators, who took part in the study (author, 2007), reported a need for collaboration. All parties must work together to establish goals, criteria, and procedures if the evaluation process is to be effective (author, 2007). The researcher also found that teachers must be involved in the supervision process, which would make them more likely to follow the recommendations of the Provost. In addition, it is important for the provost to work with the teachers to create a risk-free environment in which decisions regarding learning are made collaboratively. An experienced

administrator who will benefit from the teachers must value them and respect them. When one person treats another well the reciprocity norm obliges the return of favourable treatment to the extent that both the employee and the employer apply the reciprocity norm to their relationship, favourable treatment received by either party is reciprocated, leading to beneficial outcomes for both. Research has also showed that being valued by the organization can yield such benefit as respect, parity and promotion, and access to information and other forms of aid needed for better service delivery, (Ejiogu, 1997).

Glanz, Shulman, Sullivan (2007) conducted a study and found that in most cases principals do not have the time to engage in continuous supervision. They also found that schools with effective supervision models had significant increases in student achievement because a culture of teacher empowerment and collaboration is established. This study found that leadership influences student achievement. Williams (2003) in a study titled *The Relationship between Principal Response to Adversity and Student Achievement* emphasized the importance of the principal in influencing student performance through developing a school culture focused on learning and working to establish a collaborative learning community (as cited in Glanz, Shulman, Sullivan, 2007). Oghuvbu's study (2007) focused on instructional supervision in Nigerian schools. A major finding is that supervision is designed to promote teaching and learning in schools. Lack of supervision could result in inadequate preparation by teachers (Oghuvbu, 2007).

Kersten (2006) states that the current evaluation process is ineffective because according to Dougherty (2005), the responsibility to complete accurate and comprehensive teacher

evaluations belongs to administrators (as cited in Kersten, 2006). In other words, stating that teachers should participate in changing the evaluation process is lofty at best because the current practice is for building leaders to evaluate teachers. However, as the Illinois State Board of Education (FRN, 2004) requires, administrators should participate in teacher supervision training so that they are more aware of differentiated evaluation methods. This awareness can assist them with identifying the most appropriate supervision model that will engage teachers more, who ultimately may engage students more in the learning process.

For the purpose of improving education, Peterson and Peterson (2005) suggest that principals incorporate teacher evaluation programs that promote highly qualified teachers and high academic standards by (1) increasing the amount of objective data; (2) increasing teacher involvement, and (3) increasing the technical and sociological quality of the evaluation process principals can assist teachers in improving their instructional practices. Owings, Kaplan, and Nunnery's (2005) study investigated the relationship between principal quality and students' achievement. The results indicated that principals with higher ratings had higher levels of students' achievement in their schools. This idea is supported by the work of Glanz, et al., (2007) who state that it is reasonable to believe that principals who practice and build skills in leadership for teaching and learning can positively impact their schools' learning and students' performance. MetLife (2003) conducted a study in 2003 and found that principals play an important role in motivating teachers and students. Moreover, research affirms that educational leaders who pay close attention to instructional matters at the classroom level effect successful teaching, and thus learning; but again, it's indirect influence (as cited in Glanz, Shulman, Sullivan, 2007).

It has been observed that many public schools do not encourage collaboration. Top-down decision making, curriculum compartmentalization, and the isolation of the self-contained classroom are among the forces militating against professional collaboration in schools (Archbold, 1998). One of the major reforms of today focuses on the teachers having a greater role in planning, problem solving, and research. This idea is not, for instance, to replace a principal with a teacher, or to give individual teachers more freedom to act in isolation in traditional roles, but for teachers to exercise more power collaboratively in planning and decision making (Archbold, 1998). Collaboration allows for more involvement in the decision making role.

Hill, Lofton, and Newman conducted a study on Professional Portfolios: A Catalyst or a Collaborative Work Culture in 1997 and found that collaboration leads to reflection, self learning, professional growth, and positive interaction with co-workers because the climate supports these dispositions. This study discovered that when the faculty developed individual portfolios as a means of evaluation, higher value was placed on the collaborative practice of the school. This system with the use of portfolios has broken down the “us” (teachers) versus “them” (administrators and supervisors) attitude; it fosters a more collaborative relationship, thus leading to better education (Hill, Lofton, Newman, 1997).

Poole (1995) focused on the re-examination of the teacher-administrator relationship because the traditional hierarchical relationships created a “we/they” mentality, which prevented schools from meeting their goals. His/her re-examination was based on three areas: shifting responsibility for professional development from the teacher to the administrator, breaking

down the traditional hierarchical relationship between administrator and teacher, and developing a collegial relationship between the administrator and teacher to contribute as equals to the purpose of improving instruction. Within this study, Poole focused on cultural leadership. Cultural leadership is usually depicted as an administrator advancing a personal vision. Such an image overestimates the influence of school administrators and falsely depicts teachers as relatively passive participants in meaning construction (Poole, 1995). There is a need to break down these barriers and encourage teachers and administrators to view themselves as equals. The transition required both teachers and administrators to reconstruct meanings that were part of their cultural understandings about how teachers and administrators relation to one another (Poole, 1995). This study explored a new model of teacher supervision and evaluation, which led to a collaborative understanding about the teacher-administrator relationship.

The National Policy on Education (FRN, 2004) states that no education system can rise above the quality of her teachers who run and operate it. This is very true of technical education. The importance of technical education in nation building as well as the high cost of establishment and running of technical educational programme are major reasons why those who are charged with the responsibility of leadership of technical education institutions should highly be professional, adequately qualified and highly skilled, to be effective in the discharge of their roles. These roles include among others:

- Provide the teachers with enabling environment that will guarantee intellectual and professional background adequate for their assignment and make them adaptable to changing situation and development;
- Provide standard for establishing and maintain technical school with adequate workshop facilities, equipment and instructional materials.
- Organize regular supervision and inspection of all the technical programmed.
- Liaising between the school and the community for assistance when necessary.
- Source for fund for technical programme in the schools.
- Appraise performance of technical schools periodically

These roles can be effectively executed only by those who are professionals in Technical Education and have relevant experience in the art and process of Technical Education.

The Economic and Social Context of Planning in TVET.

The purposes of TVET are Economic, Social and Socio-Political Economic underscores the supply of labour market (firms) with needed workers. This recognises the skills require of any worker. Only the skilled labour will be required by the labour market. Social: This describes the transition from school to work for young people. This means that it socially expected that any youth who graduated from school should be able to fit into the labour market. Meaning that the youth passing any school process must have developed a saleable skill. This will then enhance his self-reliance and the dignity of the “work-class”. Social and Political means that workers should have adjustment to working life.

Any TVET system must consist of the following stakeholders: Employers and employer groups, Trainees/participants, Parents of trainees, Labour unions, professional associations Training providers, schools, training institutions, Instructors, administrators, technical professionals, Government: Youth agencies; Ministry of Labour, Ministry of Education

Evaluation of TVET system or programme

The traditional criteria for evaluating a TVET system include: Effectiveness, Efficiency, Relevance, Responsiveness, Equity, and Quality. Berghe (1996) organizes some of the most important viewpoints and perceptions to quality:

- quality as excellence, as something special
- product-oriented quality (quality can be measured)
- quality of as the fulfillment of customer expectations
- process-oriented quality (quality is conformance with specifications)
- Price/benefit-oriented quality (the value approach).

TVE within the Context of Nigeria's Educational System

The Nigerian educational system is structured in such a way that according to constitutional provision, education is on the concurrent legislative list, indicating that both the federal and state governments can own schools and indeed the private sector which could be missions, groups or individuals can also own and control schools. The responsibility of formulating educational policies, monitoring and enforcing standards is however reposed constitutionally in the federal government. The situation of education in Nigeria is that a large proportion of secondary schools are under the purview of state governments, which are also directly responsible for considerable proportion of the nation's tertiary institutions. While the federal

government has a considerable number of tertiary institutions and a handful of secondary schools, the local governments have the statutory managerial responsibility for primary education but the federal and state governments exercise appropriate oversight functions over those schools.

The educational system in the country is currently guided by an educational policy which first came into force in 1977 and which has been revised four times to accommodate the necessary and relevant dynamism that is part of sensitivity to progress. This National Policy on Education as it is christened which has in spite of revision, maintained its essence, stipulates a 6-3-3-4 structure. This structure offers six years of primary education, three years of junior secondary education, three years of senior secondary education and four years of tertiary education. However, it must be noted that with the introduction of the Universal Basic Education Programme, the first nine years (i.e. the 6years of primary school and the 3years of junior secondary school) is unbroken and is referred to as basic education. Every child is expected to access and complete the basic education cohort. Also to be noted is that a student may spend 3years at the university (tertiary level) depending at what level he/she is entering, and may spend 5-7 years depending on which course he/she is pursuing.

At each level of the educational ladder, the NPE makes provision for science, technical and vocational orientation to be infused. At the pre-primary and primary level, schools are expected to ensure that attention is paid to developing the fundamental and foundational skills upon which TVE will be developed at the higher levels. At the junior secondary school level, the curriculum prescribes pre-vocational electives with emphasis on practical in 5 specific subjects namely: Agriculture, Business Studies, Home-Economics, Local crafts and Computer

Education. At the senior secondary school level, the Vocational electives which are classed into Group B are 18 in number and they include auto mechanics, Applied electricity, Bookkeeping and accounting, Metal work, Woodwork, Technical drawing Music, Fine art and Electronics. At the tertiary levels (encompassing the polytechnics, mono-technics, colleges of education and the universities), the curriculum is wide and diversified enough to cater for all aspects of technical and vocational needs of any nation and indeed of the Nigeria nation.

The Concepts of Technical and Vocational Education in Nigeria

The United Nations, Education, Scientific and Cultural Organization (UNESCO, 1986) views Vocational and Technology Education as a comprehensive term for the study of technologies and related sciences and the acquisition of practical skills and knowledge in addition to general education. Going by this view, technology education ought to play enormous role in National development through equipping individuals with skills and competencies with which they can be gainfully employed in numerous jobs and with which they can advance in such jobs. Though vocational education and technical education are often named together, they are in fact two distinct types of education. An individual may pursue one or the other, but because the two are highly linked to the practical preparation of their students or trainees to the world of work, the two are often linked together and rightly so.

Technical Education

It emphasizes the understanding and practical application of basic principles of science and mathematics, rather than just the attainment of proficiency of manual skills that is basically the concerns of other types of education. Technical education which covers a wide range of

occupations in agriculture, commerce, engineering, environmental and computer science is offered in colleges of agriculture, polytechnics, monotehnics and other special technical institutions and universities.

Vocational Education

Vocational education, according to Section 29 of the NPE (i.e. the National Policy on Education) (FME,1998) is ‘that form of education which is obtainable at the technical colleges...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’. In realization of the fact that vocational education can be obtained at school levels higher than the senior secondary level and in pursuance of the equivalence of importance that vocational education has with other disciplines, the 2004 edition of the NPE presented a more comprehensive definition of vocational education. It describes it as ‘that aspect of the educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupation in various sectors of economic and social life’.

Lack of technical teachers in the existing TVET institutions hinders proper delivery of instruction. Researchers (Aleburu, 2006; Ogunyemi, 2001) established that technical teachers are few in the scanty TVET institutions in the nation. Table 3. shows the enrolment of students in teachers’ programme Colleges of Education in Nigeria from 1999/2000 to

2004/2005 academic session. There were sixty-five Colleges of Education in 1999/2000 academic year but has now increased to 72 in 2004/2005.

Table 3: Enrolment of Students by Subject and Sex in Colleges of Education in Nigeria from 1999/2000 – 2004/2005 Academic Session

SESSION/ COURSE	SEX	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005
TECHNICAL EDUCATION	M	2347 (1.71)	2931 (1.93)	2959 (0.91)	3466 (1.12)	3772 (0.96)	3334 (0.93)
	F	456 (0.33)	1472 (0.97)	613 (0.19)	166 (0.05)	497 (0.13)	466 (0.13)
	T	2803 (2.04)	4403 (2.89)	3572 (1.10)	3632 (1.18)	4269 (1.08)	3800 (0.56)
VOCATIONAL EDUCATION	M	6817 (4.95)	7931 (5.21)	11817 (3.65)	8773 (2.85)	11851 (3.00)	10071 (2.80)
	F	8013 (5.82)	8415 (5.53)	7753 (2.40)	10847 (3.52)	13676 (3.46)	12665 (3.52)
	T	14830 (10.78)	16346 (10.74)	19570 (6.05)	19620 (6.37)	25527 (6.46)	22286 (6.19)
TECHNICAL VOCATIONAL EDUCATION	M	9164 (6.66)	10862 (7.14)	14776 (4.57)	12239 (3.97)	15623 (3.96)	13405 (3.73)
	F	8469 (6.15)	9887 (6.50)	8366 (2.58)	11013 (3.57)	14173 (3.59)	19198 (5.34)
	T	17633 (12.81)	20749 (13.64)	23142 (7.15)	23252 (7.54)	29796 (7.54)	32603 (9.06)
SCIENCE EDUCATION	M	7722 (5.61)	8015 (5.27)	18090 (5.59)	20163 (6.54)	25014 (6.33)	22894 (6.36)
	F	8178 (5.94)	8620 (5.67)	18354 (5.67)	19713 (6.40)	26405 (6.69)	24392 (6.78)
	T	15900 (11.55)	16635 (10.93)	36444 (11.26)	39876 (12.94)	51419 (13.02)	47286 (13.14)
OTHER COURSES	M	47381 (34.43)	56198 (36.94)	120970 (37.38)	118827 (38.55)	146081 (36.99)	137624 (38.25)
	F	56719 (41.20)	58565 (38.49)	143095 (44.21)	126259 (40.97)	167656 (42.45)	142310 (39.55)
	T	104100 (75.63)	114763 (75.43)	264065 (81.59)	245086 (79.52)	313737 (79.44)	279934 (77.80)
GRAND TOTAL	M	64267 (46.69)	75075 (49.34)	153836 (47.53)	151229 (49.07)	186718 (47.28)	173923 (48.34)
	F	73366 (53.31)	77072 (50.66)	169815 (52.47)	156985 (50.93)	208234 (52.72)	185900 (51.66)
	T	137,633 (100)	152,147 (100)	323,651 (100)	308,214 (100)	394,952 (100)	359,823 (100)

Figures in parentheses are in percentage (%)

Source: Statistical Digest on Colleges of Education in Nigeria

Table 3. showed the enrolment of students into Colleges of Education in Nigeria from 1999/2000 to 2004/2005 academic session. The students are grouped Technical and Vocational Education, Science Education and Others. (The Technical and Vocational Education was deliberately separated into Technical Education (consisting of Automobile, Building, Electrical/Electronics, Metal Work, Wood work and Technical Drawing) and Vocational Education (consisting of Agricultural Science, Fine and Applied Art and Home Economics).

In 1999/2000 academic session, 137,633 students enrolled for various courses in the sixty four Colleges of Education in Nigeria. Of this number, 17,633 (12.81%) enrolled for technical and vocational courses, 15,900 (11.55%) science courses while 104,100 (75.63)% enrolled for other courses. Further analysis showed that 2,803 (2.84%) and 14,830 (10.78%) enrolled for technical and vocational education respectively. Looking through the table, the trend is the same all through. For instance, in 2000/2001, out of 152,147 students that enrolled in all the Colleges of Education in Nigeria, 4,403 (2.89%) opted for technical education, 16,346 (10.74%) for vocational education, 16,635 (10.93%) for sciences while 114,763 (75.43%) opted for other courses. Out of the 323,651 students that enrolled for various programmes in 2001/2002 academic session, 3,572 (1.10%), 19,620 (6.37%), 39,876 (12.94%) and 245,086 (79.52%) opted for Technical, Vocational, Sciences and other courses/programme respectively.

Table 4 showed the graduates from all the Colleges in Nigeria from 2001/2002 to 2004/2005 academic sessions.

Table 4: Summary of Graduates from by Subject and Sex in Sixty-Five Colleges of Education in Nigeria from 2001/2002 – 2004/2005 Academic Session

SESSION/ COURSE	SEX	2001/2002	2002/2003	2003/2004	2004/2005
TECHNICAL EDUCATION	M	523 (1.92)	825 (1.69)	772 (1.05)	598 (0.84)
	F	114 (0.42)	191 (0.39)	168 (0.23)	368 (0.52)
	T	637 (2.34)	917 (1.88)	940 (1.28)	966 (1.35)
VOCATIONAL EDUCATION	M	1095 (4.03)	1522 (3.13)	2408 (3.28)	2093 (2.93)
	F	1414 (5.20)	2174 (4.47)	3030 (4.12)	2990 (4.19)
	T	2508 (9.22)	3696 (7.59)	3438 (4.68)	5083 (7.12)
TECHNICAL VOCATIONAL EDUCATION	M	1618 (5.95)	2347 (4.83)	3180 (4.33)	2691 (3.77)
	F	1527 (5.62)	2365 (4.86)	3198 (4.35)	3358 (4.70)
	T	3145 (11.56)	4712 (9.68)	6378 (8.68)	6049 (8.47)
SCIENCE EDUCATION	M	1439 (5.29)	2990 (6.14)	5270 (7.17)	5459 (7.34)
	F	1994 (7.33)	2941 (6.04)	4853 (6.04)	6505 (9.11)
	T	3433 (12.63)	5931 (12.18)	10123 (13.78)	11965 (11.65)
OTHER COURSES	M	8876 (32.64)	18597 (38.20)	27364 (37.24)	24774 (34.69)
	F	11738 (43.17)	19443 (39.94)	29618 (40.31)	28637 (40.09)
	T	20614 (75.81)	38040 (78.14)	56982 (77.55)	53411 (74.78)
GRAND TOTAL	M	11933 (43.88)	23934 (49.16)	35814 (49.74)	32924 (46.10)
	F	15259 (56.12)	24749 (50.84)	37669 (51.26)	38500 (53.90)
	T	27,192 (100)	48,683 (100)	73,483 (100)	71,424 (100)

Figures in parentheses are in percentage (%)

Source: Statistical Digest on Colleges of Education in Nigeria

From Table 4, a total of 27,192 graduates were produced out of which are Technical, Vocational, Science 637 (2.84%), 2,508 (9.22%), 3,433 (12.63%) and 20,614 (75.81%) and teacher in other disciplines and other courses respectively in 2001/2002. In 2002/2003 academic session, out of 48,633 teachers produced from all the Colleges of Education in

Nigeria, 917 (1.84%), 3696 (7.59%), 5931 (12.18%) and 38,040 (7.59%), 5931 (12.18%) and 38,040 (78.14%) specializes in Technical Education, Vocational Education, Science Education and other courses respectively. Although, the total number of graduates is increasing yearly, the percentage decreases in the number of graduates from Technical Education and Vocational Education.

Despite all the inputs into technical education, there have been serious criticisms on the effectiveness of TVET. It has been observed by researchers and (Nneji and Bankole, 2007).

That the purpose of introducing TVET has not been realized and that trained technical teachers are in short supply and the available ones are not seen living up to expectations.

There is high rate of youth unemployment in the country (Okunola, 2003). The quantity and quality of technical teachers are nothing to write home about. Researchers (Aleburu, 2006; Ogunyemi, 1997) have established that there is neglect of TVET programme by prospectus student. There is downward trend in students enrolment in TVET, observed that the quality of graduate is very poor.

The quality of technical teachers of any nation determines the quality of the technical manpower of such a nation. The quality of technical teachers also depends on the effectiveness of technical teacher education programme to be effective, dynamic and result-oriented leadership for the success of the programme. The quality of technical teacher education programme mostly depends on the school input into the programme. Globally there is concern that even vocational training graduates are not highly employable owing to the mismatch between what they have been taught and what employers need – in both technical and core skills (FICCI, 2007; Team Lease, 2007). Folaranmi (2007) observed that

employers of labour have their heap of tales and complaint galore about the quality of TVET graduates that they interviewed for employment. Employability is an individual's capacity to secure and retain decent work, to progress within the enterprise and between jobs, and to cope with changing technology and labour market conditions (Snower, 1996). This study investigated quality of technical teachers produced from the studied institutions.

Quality can be defined in many different ways. For instance, it can mean excellence, zero defects, uniform quality, satisfying customer needs or operational improvement. Instead of creating a pervasive and unequivocal definition of TVET quality, it is more relevant to examine it as a relative and contextual concept. Quality is always bound to satisfying customer needs. Defining quality is ultimately a common task for TVET providers and their key customer and stakeholder groups. Quality refers to the degree to which a set of inherent characteristics fulfils requirements. The quality of education and training means the ability of education and training to meet specified objectives and customer needs. Examples of quality assurance in technical and vocational education and training include vocational skills demonstrations and competence tests in vocational education and training. Recent direct investigations of cognitive achievement find significant labour market returns to individual differences in cognitive achievement (Lazear, 2003; Mulligan, 1999; Murnane, Willett, Duhaldeborde, and Tyler (2000)). Similarly, society appears to gain in terms of productivity; Hanushek and Kimko (2000) demonstrate that quality differences in schools have a dramatic impact on productivity and national growth rates. Although outcomes cannot be changed by fiat, much attention has been directed at inputs – particularly those perceived to be relevant for policy such as school resources or aspects of teachers. In this study, students' learning

outcomes [attitude and achievement (cumulative Grade Point Average: CGPA)] were used to measure quality of technical teachers produced in the studied institutions. Apart from examining the quality of the graduate, the study investigated the status of facilities in Colleges of Education in consideration.

Technical and Vocational Education facilities are all the infrastructural facilities like workshops, laboratories, studios, equipment, machines, tools, consumable materials instructional materials, etc, that are used for teaching/training TVET courses and programmes. Prosser (1949) in his theory of TVE states that effective vocational training can only be given where the training jobs are carried on in the same way with the same operations, the same tools and the same machines as in the occupation itself. This fundamental theory insists on the process of acquiring skill in the classroom or laboratory as the same in the work place. It is therefore disadvantageous to acquire skill on tools, equipment or machines which are quite different from those used at work place. Whatever the differences in tools and equipment or machines available for training in classroom and laboratory work experience normally augments and help to update the learners production skills. This theory underscores the need for the availability of TVET facilities. These facilities are required in adequate quantity and quality for any TVET programme to meet the needs of the learners and the society. In addition, this study investigated the effective time spent for TVET courses.

All events which happen in nature involves the idea are time or time is that in which events are distinguishable with reference to before and after. The fact is that instructional time has the same scientific status as the concept of homeostasis in biology, reinforcement in

psychology, or gravity in physics. That is, those more admired concepts, instructional time allows for understanding, prediction and control, thus making it a concept of a great deal more attention than it is usually given in education and in educational research (Berliner, 1990).

Instructional time refers to the total time involved in an instruction. It includes allocated time, engaged time, time-on task, academic learning time, transition time, perseverance time, pace, and evaluation time (Aleburu, 2008). Learning to use one's time well is critical for both students and lecturers alike. Allowing realistic time means effective learning for students and effective teaching for lecturers. In carrying out an effective learning design, sufficient time should be allocated to a task (Chickering and Gamson, 1997). Students should be involved in active learning for improved learning outcome. Prosser (1949) theorized that vocational training will be effective in proportion as the specific training experiences for forming right habits of doing and thinking are repeated to the point that the habits developed are those of the finished skills necessary for gainful employment. The theory emphasizes the need in doing and thinking about skills through repetitive training in every occupation. The training must be regular, orderly with logical procedures. In TVET, time for learning include the contact hours for classroom teaching, time for practical work in the workshop or laboratory, time spent for SIWES, teaching practice, examination, test and so on. According to the minimum academic standard (NCCE, 2002), the total contact hours for teaching theory of technical courses is 47; total time spent for practical is 99 hours while the total hours for education and general course study is 50 (fifty hours). This study hence investigated the adequacy of time for qualitative production of quality technical teachers. Apart from time

spent, the study investigated the effect of students' perception of their Performance in TVET programme.

Attitude has been defined by different authors in different ways depending on their background, interest and concern. Smith (1998) defines attitude from the psychological point of view as a relatively enduring predisposition to respond in a relatively consistent manner toward a person, object, situation or idea. Jegede, (1991) offers a definition of attitude which include cognitive, emotional and action tendency to particular behavioural intents. Thus he believes attitude is best viewed as a set of affective reactions towards the attitude object, derived from concepts of beliefs which the individual has concerning the object and predisposing him/her to behave in a certain manner towards the object. Therefore, behaviour rather than attitude is focused on by these two authors. Based on social – psychological perspective, Myers (1990) defined attitude as a favourable or unfavourable evaluative reaction towards something or someone, exhibited in one's beliefs, feelings, or intended behaviour. This definition implies that attitude could be in positive or negative and may involve subjectivity on the part of the person expressing it and in its measurement. Simon (2000) has listed the following components as relevant in the measure of attitude towards science: the perception of the science teacher, anxiety towards science, the value of science, motivation towards science, enjoyment of science, attitude of peers and friends towards science, attitude of parents towards science, the nature of classroom environment and fear of failure on a course.

The purpose of research into attitudes is to identify how young people's experiences or perception of science appear to alienate them from science as well as how their attitudes affect their choice of science and science related careers. In addition, there is said to be relationship between attitude and achievement which such researches are equally interested in probing further. TVET is a science based programme and whatever theory is applicable to science must be applied to TVET courses. The study also investigated students' attitude to TVET programme. Attitude has been found in literature to constitute another variable, which potentially influences the learning outcomes of children (Stephen and Sandra, 2006; Iroegbu, 2000). The Scholars had the view that attitude could be used to change the level of cognitive, affective and psychomotor outputs of learners. Furthermore, the study investigated the effect of would be technical teachers' Perception of Performance in TVET programme. In this study, the Cumulative Grade Point Average (CGPA) of the students at the end of 200-level were used to measure Performance. The higher the CGPA, the higher the quality of the pre-service technical teacher. The study was also interested in investigating gender performance in TVET.

The third millennium development goal is to promote gender equality and empower women. Elimination of gender disparity comprises a number of goals, including bringing about equality in primary and secondary education by 2005 and at all levels of education by 2015 (UN General Assembly Resolution, 2001).

The gender factor has assumed prominence in science education. It was documented that disparity existed between male and female student's performance in science subjects (Keeves, 1991; Stephens, 1991). In some cases boys had an edge over girls in academic

achievement [Onibokun (1999), Abe (1995) and Udoukpong (1993),]. Butler (2000) indicated that gender was a consistent factor affecting computer attitudes and that boys generally had a more positive attitude toward computers than girls. Also, Durndell, Glissov, and Gerda, 1995, found that males performed better than females on mathematical items and quantitative information tasks through computer. Millard (1992) and Kirman (1995) also reported that boys outperformed girls in achievement and attitude towards science.

However, there have been some dissenting views: Burniske and Monke (2001) show that there is no difference in the performance of male and female students. This is supported by Shephardson (1995) who found no significant difference in achievement by gender or treatment. Comber and Kneves (1997) however reported that the differences between the sexes in achievement in science kept on increasing markedly from primary level to terminal schooling years. The study carried out by Stephen and Sandra (2006) revealed that girls outperformed the boys in mathematics and English language at the end of secondary school education in 2002 and 2003. There is evidence that in most subjects the average performance of girls now exceeds that of boys at all levels of education. International studies such as PISA suggest that a gender gap in attainment is also an issue in other countries (OECD, 2004) and in the US women have been consistently more educated than men since the mid 1970s (Charles and Luoh, 2003; Freeman 2004). This problem has become worse over time in the UK (Stephen and Sandra, 2006) in the context of an overall improvement in performance for boys and girls. Since it has been found that sex factor has positive or negative contribution to academic achievement, this study therefore investigated the gender

performance in TVET courses in the study institutions. Apart from gender issue, the study was interested in teachers' morale to TVET.

Morale can be made up of many commitment and satisfaction elements, including availability of role models, rewards, recognition, encouragement, professional development, incentives, empowerment in terms of support (e.g. technical) and the ability to demonstrate creativity in the school setting. In this study, teacher morale was operationalized from the teacher's perspective to include enjoyment of teaching, perception of colleagues' morale regarding modern machine use, opportunities for collegial sharing of technology ideas and uses, satisfaction with work environment, and extent to which the position provides professional growth and is satisfying. These elements provide the foundation upon which a teacher can make a positive difference in the learning environment.

Although several theoretical models of organizational and professional commitment exist, commitment is generally defined as identification and involvement with an organization or profession, including acceptance of its goals and values, a willingness to exert efforts on its behalf, and a desire to remain a part of it (Riehl and Sipple, 1991, Meyer, Allen and Smith, 1993).

Commitment to teaching, like that to other types of work, has both a psychological component, reflected in a personal interpretation of the teaching experience as absorbing, meaningful and full of psychic rewards, and a behavioural component, reflected in such organizational behaviour as attendance, retention, and non-classroom activity participation (Riehl and Stipple, 1996; Rosenholtz and Simpson, 1990; Mueller, Wallace and Price, 1992;

Angle and Perry, 1991). Some theorists distinguish between several types of commitment: 1) affective commitment, the emotional underpinning of the attraction to or desire to remain with an organization or profession; 2) continuance commitment, or the desire to remain part of a profession or organization because there are no more appealing alternatives; and 3) normative commitment, the desire to stay with an organization because of social pressure to do so (Meyer and Allen, 1991; Meyer, Allen and Smith, 1993). Although all are significant predictors of work behaviour such as tardiness, absenteeism, loyalty and professional activity, affective commitment is generally the strongest predictor (Meyer, Allen and Smith, 1993). Organizational and occupational commitment has several types of determinants: external environmental factors, internal school factors, and professional/personal factors (Shaw and Reyes, 1992; Riehl and Stipple, 1996; Rosenholtz and Simpson, 1990; Reyes, 1990; Peterson and Martin, 1990). Some of the external environmental factors in teachers' commitment include: Student profile, School size and climate and teacher outcomes and salary while internal school factors include: School Management, Structure and hierarchy, Climate, organization and cohesion, Professional autonomy and Boundary vs. core factors. Furthermore, this study looked into effective school management.

Efficient school management, where information and resources are provided to teachers in a timely manner as required, is related to teacher satisfaction. Having easy, informal access to the School management is also associated with satisfaction (Lee et al. 1993). Staff morale is higher in schools with clear and consistent rules and policies, which are enforced consistently. Schools with principals who exercise effective leadership have teachers who are

more satisfied with their work and see themselves as more effective (Lee et al., 1993). In schools where principals establish, share and reinforce the attainment of clear, school-wide goals for student performance and professional development, academic success is greater and teachers are more satisfied and self-efficacious in their work. Effective performance evaluation procedures for teachers also enhance teacher effectiveness and student achievement) because they furnish clear feedback on areas for improvement (Lee et al., 1991).

Glanz, Shulman, and Sullivan (2007) conducted a study and found that in most cases principals do not have the time to engage in continuous supervision. They also found that schools with effective supervision models had significant increases in student achievement because a culture of teacher empowerment and collaboration is established. This study found that leadership influences student achievement. Williams (2003) in a study titled *The Relationship between Principal Response to Adversity and Student Achievement* emphasized the importance of the principal in influencing student achievement through developing a school culture focused on learning and working to establish a collaborative learning community (Glanz, Shulman, Sullivan, 2007). Oghuvbu's study (2007) focused on instructional supervision in Nigerian schools found that supervision is designed to promote teaching and learning in schools and that lack of supervision could result in inadequate preparation by teachers.

Effectiveness and Production of Qualitative Technical Teacher.

Effectiveness is an indication of the impact of a group of activities performed on the achievement of intended learning outcome. In the relation to a Programme or curriculum, it is the observed impact of that Programme in achieving its set goals and objectives. An effective programme or curriculum is result oriented. It is rooted on functional components whose characteristics enhance the achievement of results within the framework of the set goals. The characteristics of effectiveness denote some of those intrinsic factors that stimulate a programme or a curriculum to assist its participants to realize the objectives of that programme. In an educational culture, these factors will always culminate in bringing about a broader spectrum of experience which the learner needs. In this circumstance, the programme now assists the learner to learn the techniques of learning, the skill of listening, thinking and doing and how to critically evaluate experiences acquired.

Some of the characteristics of effectiveness include:

- The programme should have good quality teachers who are dedicated to their teaching and can go along with the learners in their efforts to learn;
- The programme should accommodate students who the programme are meant for and can benefit from it, progress within it and thereafter become dedicated on the job and useful to themselves and their community;
- The programme should have a functional working curriculum that has a mission and which should not be above the capability and competence of both the teachers and the learners;

- The programme should be provided with adequate and functional facilities, both in major and minor segments, or learning tasks;
- The programme should be within minimal cost, to ensure that all those who are interested and need the programme are accommodated;
- The programme should be flexible within acceptable limits in order to accommodate all levels of student, and their characteristics or individual differences.
- The programme should by itself acceptable and have relevant evaluation technique that can help detect its strength: and weakness;
- The programme should have its strength, weakness and job opportunities, and be able to cope with any threats against its effectiveness on the learners and the society;
- The product of the programme should have opportunities for gainful employment in the world of work;
- The programme should have traits that can make it to compete successfully with other programmes. The programme should be capable of satisfying the aspirations of its learners for gainful living.

Functional Technical Teacher Training Models

All nations in the world are faced with the challenge of improving the capacity of their work force to respond to their own national development needs and to the demands of a rapidly changing, more globally competitive, world. The future success not just of nations, but also of individuals, enterprises and communities will increasingly depend on a pool of

transferable and renewable skills and knowledge. In the short and medium term, high quality initial teacher training is needed to improve TVET, as well as high quality professional development for teachers already in service. A small rise in teacher quality can yield considerable improvement in outcomes. (UNESCO, 2004)

Technical teacher training is an educational exposure that assists interested individuals to acquire manipulative skills in their chosen occupations. The individual technical teacher is specifically trained for competency in classroom and workshop instructions. In vocational teacher education, instructional objectives are directed towards preparing, through training, the needed human resources for commercial, industrial and self employment ventures. Therefore, for vocational technical education programmes to be functional, the need for well trained technical teacher becomes very crucial. Researchers (Gicali, 2001; Hardy and Parent, 2000; Olaitan, 1999) states that the primary objective of any functional technical teacher training programme will include: (a) providing learners with the necessary technical orientation that will help them develop technological awareness, (b) helping learners develop interest in their trades; (c) Familiarizing learners with the various relevant materials, tool, equipment and machinery used in carrying out technical tasks, (d) Demonstrating tasks before learners using the necessary materials, tools and equipment, (e) Giving learners the opportunity to practice these tasks while being supervised, (f) evaluating and correcting learner's completed jobs; (g) managing the laboratory efficiently and obeying all work safety rules. For these objectives to be achieved by the training institutions, programmes for training activities will be carried out using functional training models.

The Functional Training Models

These training models can best be described as small scale representations of functional training approaches designed to be copied by the learner. There many functional training some of which are: On-the-job training model; Work-study training model; Work-experience training model and Technical-training model.

On-the-job training Model

This is a training model which provides individuals with the necessary learning approaches in specific tasks in occupation while working. The main objective of this training model is to provide those individuals, interested in an occupation, the opportunity to acquire skills and knowledge in that occupation while working. The learner must have the following in order to satisfy training conditions using this model which are stated as follows:

- Some general knowledge and experience in carrying out related tasks in that occupation;
- Been working in the trade or related areas of the trade;
- Develop interest in learning specific problem-solving techniques in that trade;
- Developed interest in using his experience in the trade for useful life's work; and
- Motivating interest in progressing in that occupation

This type of training model requires less period of instruction before the learner perfects in the skills of the trade because is already on the job in the same trade and so can practice the skills individually after few instructions. Also, he does not require entry behaviour to

participate in performing related tasks in the trade because he is familiar with the work environment

The instructor in on-the-job training model uses the observation and practice strategies to carry-out instructions. Instructions can be carried out in this model on real jobs or in laboratory duties by the industry. The functions of the instructor include:

- a) Identification of tools and materials for carrying out a task in that occupation;
- b) Arrangement of the instructional materials according to use in accomplishing a task;
- c) Demonstrating the tasks systematically as the learner observes attentively the activities involved;
- d) Giving the learner the opportunity to practice or carry out the task while the instructor supervises;
- e) Evaluating and effecting necessary corrections on the completed jobs.

Work-study Training Model

Work-study Training model offers learners the opportunity to undergo training while on paid employment. In this case, the learner performs his regular duties in his work place in addition to undergoing training. This training model is aimed at helping individuals acquire added knowledge for better work output. The training is also aimed at helping individuals acquire added knowledge, skill and competencies that will favour better economic rewards.

For training to be effective using this model, the learner must ensure that he completes his day's job on time to make room for learning activities or he makes use of his leave or

vacations to study. He must provide adequate learning materials to ensure that instructions are uninterrupted.

In this training model, instructions are carried out within specific periods of time. The role of the instructor for effective instructions will include: (a) Making sure that instructional materials are ready for use in carrying out instructions; (b) Using the materials to demonstrate tasks before the learners; (c) Ensuring that the learners learn the various relevant operations involved in the tasks by allowing the learners to practice the tasks; (d) Giving the learners related tasks as projects; (e) Evaluating the projects to find out the extent to which the learners have acquired the skills involved in accomplishing the tasks.

In a work-study training model, instructions are mostly carried out using a complementary instruction model. In this circumstance, the instructor approaches his instructions using a combination of such traditional methods as discussions, demonstration and project methods together to provide a unique and effective instruction. The instructor will in this case:

(a) Provide to the learners all technical information needed for executing a certain task; (b) Provide systematically, the various materials needed for carrying out the task; (c) Provide all the tools, equipment and machinery needed for carrying out the task; (d) Provide a conducive environment for carrying out the task; (e) Practice the task himself to make sure that all the materials, tools and equipment are working and also to perfect himself in the process and procedure for carrying out the tasks; (f) Demonstrate the task before the learners; (g) Allow the learners to practice the task while he observes and gives necessary corrections; (h) Find out how much competencies have been acquired by the learners.

The work-study training model is useful for skill development. It affords the learners the opportunity to develop skill easily and economically. The learner who already has some knowledge in the trade does not need much time to follow the skill developing techniques of trade. Since the learner is already engaged in some work, his problem-solving ability will be considerably high and encouraging. In the same vein, the cost implication of his training will not be too heavy on him.

One problem of work-study training model is time implications. In most cases, the learner finds it difficult to coordinate work and learning activities between his work place and his study location, especially when the two locations are far apart.

This work-study training model can however be improved upon to accommodate better learning co-ordination using the following approaches:

- a) Adequate timing – the period for both working and learning should be properly defined. In case, if learning period is scheduled in the morning hours, then work hours should be shifted to evening periods.
- b) Occupational choice – for effective achievement of instructional objectives, learners should ensure that training takes place in the same occupation where they are already working;
- c) Better emphasis on projects – training activities should emphasize practical projects in which case execute some of these projects in his work place.

Hardy, Menard, Semblat and Cryr (2002) explained that effective learning outcome using the work-study training model will depend on the organizational strategies adopted by the

training institution. It becomes necessary, therefore, that the training institution should ensure that: (a) Instructional contents should be systematically arranged according to levels of difficulty, to ensure prompt learning. (b) Instructional time-table must take into consideration the working periods of all the trainees. (c) Instructional materials should be promptly available (d) Efficient and devoted human resource provision must be ensured (e) Training costs should be reasonably affordable. (f) Conference, seminars and workshop should be organized to help learners and their instructors up-date their knowledge and skills. (g) Research units should be provided to help learners carry out research works in the newest technologies using modern equipment and resources. (h) A code of conduct should be made to guide learners with respect to safety observances in the workshop, discipline and entry behaviours. (i) Entry qualifications should be specifically stipulated at different levels to accommodate different classes of interested individuals.

At the end of training, using this model, learners should be subjected to performance tests, to determine the level of knowledge and skill acquired by these learners. After this performance test, the products from these learners are assessed to ascertain whether they have actually acquired the knowledge and skill they were expected to have acquired.

The Apprenticeship System

This is an arrangement under which an individual bonds himself/herself to serve and to learn a skill or an array of skills related to an occupation from a master (who covenants to teach his trade or calling to an apprentice).this method also involves an experienced worker signing a contract to teach a broad range of skills he has to a student or learner. This system

is a very valuable substitute for family training in which a father teaches or trains a son on the job. This method is also known as on-the-job training.

Steps in on-the-job training

- Performance of an activity by the master trainer.
- Watching of what the master trainer does by the apprentice.
- Copying of master trainer's activity by trial and error .
- Evaluation of apprentice performance of an activity by the master trainer .
- Repetition of activity in order to achieve mastery.

Advantages of Apprenticeship System

- Systematic training of an apprentice for a trade or employment .
- Skill acquisition.
- Furtherance of family trade or business.
- Perpetuation of family occupation.
- Helps to make a family closely knit.
- Provides means of livelihood for family members.

Constraints:

- ❖ Consigns individuals to specific occupational areas.
- ❖ Does not give room for occupational choice.
- ❖ Leads to wastage since skills acquisition involves trial and error.
- ❖ Does not give room for knowing the “why” of an activity but only the “how”.

The Concept of Instructional Material

The acquisition of practical and applied skill as well as the basic scientific knowledge that would facilitate efficient occupational training requires good manipulation of skill oriented instructional facilities in a conducive learning situation. Such a learning situation can be created through effective production and utilization of instructional materials. Instructional materials in Vocational Technical Education are therefore, all the practical and skill development resources that would facilitate the processes of teaching, learning and evaluation of vocational technical skills. It describes the electronic systems, tools, equipment and other resource materials that could be utilized for directing and controlling vocational technical operations and for reinforcing the teaching and learning specified skills. It can also be seen as the devices developed or acquired to assist vocational technical teacher in transmitting organized knowledge, skills and attitudes to learners within an instructional situation directed toward learning and acquisition of skills for work.

Categories of Vocational Technical Instructional Materials

The acquisition of the diverse vocational technical skills calls for the utilization of diverse instructional materials. This forms the basis of categorizing instructional materials in vocational Technical Education into three; Viz. Tools and Equipment.

Tools:

Equipment and tools describe all the portable or heavy instruments or mechanical devices for performing special operations in Vocational Technical Teaching-learning situation. Tools are the instruments or devices that can be handled easily while carrying out special operations as well as instructional and learning activities. Tools are commonly utilized in transmitting

knowledge in the workshop or on the field, laboratory to the learners. They are used in demonstrations, practices for learning of skills and for skills testing in specified vocational areas.

Characteristics of Tools

Vocational Technical Tools are associated with the following characteristics;

- They are handy;
- The parts are simple and most commonly made of wood and metal;
- Technically they are movable with ease;
- They may be large or small tools;
- The energy expenditure by users are much less;
- Little or no skills are required in manipulating tools by users;
- Tools are easy to maintain;
- Spare parts are easily found and are cheap;
- The worn out or damaged parts are easily replaceable; and
- Tools can be used in operation with or without supporting devices.

Equipment:

These are the portable or heavy mechanical devices for vocational technical operations in the laboratory, workshop or field laboratory. Equipment is more sophisticated than tools. The use of equipment is mainly on technically specialized skill practices in the instructional and learning situations. Typical examples are the planning of wood, changing of auto batteries, ploughing of the land and so on....

Characteristics of Equipment

Equipment is associated with the following characteristics:

- ✚ They are not handy.
- ✚ The handling of the equipment requires some efforts.
- ✚ Some skills are required in handling equipment for operations.
- ✚ Maintenance of equipment is not always easy.
- ✚ Spare parts may be scarce and costly if they come by.
- ✚ Replacement of damaged equipment needs technical know-how to maintain and therefore is not easy to replace.

Academic Learning Time (ALT)

Academic learning time (ALT) is defined as the part of allocated time in a subject-matter area (physical education, science or mathematics, for example) in which a student is engaged successfully in the activities or with the materials to which he or she is exposed and in which those activities and materials are related to educational outcomes that are valued. Transition time is defined as the non instructional time before and after some activity. Perseverance, usually defined as the amount of time a student is willing to spend on learning a task or unit of instruction. Pace is defined as the amount of content covered during some time period.

Learning to use one's time well is critical for both students and lecturers alike. Allowing realistic time means effective learning for students and effective teaching for lecturers. In carrying out an effective learning design, sufficient time should be allocated to a task (Chickering and Gamson, 1997). Students should be involved in active learning for

improved learning outcome. Evaluation time is the time spent on achievement test. The S.I. unit of time is the second. Nowadays time is measured and indicated with clocks. Time measuring instruments are Water clock, hour-glass or Sand clock, Electric clock, Stop clock or Stop watch, Pendulum clock, Ticker tape timer and Chronometer (Ezebuoro). In the laboratory time is measured with stop clock or stop watch. The stop watch enables us to measure small intervals of time very accurately. Stop watches measure time to 0.1 seconds. The most accurate clock of all is the quartz crystals clock and the atomic clock (Anyakoha, 2001). Time-on-task is the time a student engaged on particular learning tasks. Engagement in particular kind of tasks is what is wanted not just general engagement.

Instructional time refers to the total time involved in an instruction. It includes allocated time, engaged time, time-on task, academic learning time, transition time, perseverance time, pace, and evaluation time. Learning to use one's time well is critical for both students and lecturers alike. Allowing realistic time means effective learning for students and effective teaching for lecturers. In carrying out an effective learning design, sufficient time should be allocated to a task (Chickering and Gamson, 1997). Students should be involved in active learning for improved learning outcome. Evaluation time is the time spent on achievement test.

Gender Participation in Technical and Vocational (TVET)

The third millennium development goal is to promote gender equality and empower women. Elimination of gender disparity comprises a number of goals, including bringing about equality in primary and secondary education by 2005 and at all levels of education by 2015

(UN General Assembly Resolution, 2001). One of the causes of skills gaps is the fact that more often than not training of girls and young women is limited to traditional occupational areas rather than being geared to new demands in the labour market. Overcoming barriers that deter women from training – at and outside the workplace – serves the twin objectives of reducing inequality and meeting labour market needs. Unequal division of labour within the family is a major barrier to increasing women’s participation in education and training. Targeting women requires an effort to schedule training in accordance with their requirements as regards when and how to learn. This commitment must start at the secondary and vocational training levels and continue at the workplace. Special effort is needed to reduce occupational segregation in training and subsequently in employment, so that women are prepared to meet the skills needs in emerging industries and occupations.

As in the case of Botswana, efforts to improve training begin with a commitment to overcome gender bias. Occupational segregation refers to the concentration of women or men in certain trades, fields of work or industries. For example, a survey on the participation of women in vocational and technical training in Latin America found that the ten specific sectors with the greatest number of female students reported 77 per cent female enrolment (Silveira and Matosas, 2001). The Botswana Training Authority in 2006, in collaboration with the Women’s Affairs Department within the Ministry for Labour and Home Affairs, drafted a “National policy for mainstreaming gender into vocational training and work-based learning” (2000) with the following objectives:

- Increase access of women into vocational education and training and reduce their attrition once they begin the training.

- Eradicate gender blindness and increase gender awareness in vocational training institutions by integrating inclusive language into curricula, improving attitudes of trainees, instructors and administrators towards gender disparity, equality and equity in vocational training and promoting gender training to overcome gender stereotyping and prejudice.
- Articulate what constitutes sexual harassment, raise awareness of it and create strict reporting and response mechanisms.
- Develop and implement a system of regular data collection and reporting of information by gender in all vocational training institutions about the status and training needs of men and women with a view to reducing occupational segregation.

Gender Participation in Technical and Vocational and Training (TVET) in Nigeria.

Researchers (Aleburu, 2006; Ekuri and Windapo, 2006) established gender disparity in the enrolment into technical and vocational education programmes in our educational institutions. The same study shows that there is gender divide in enrolment into technical trades. It shows that 3.77% and 0.94% are males and females respectively from 1991/1992 to 1998/1999. Ekuri and Windapo (2000) on gender differential in the production of science/mathematics and technology teachers in Kaduna polytechnic reported that the average enrolment of females is 32.82% while that of male 67.18% between 1995/96 to 1999/2000. Furthermore, Alabi and Adenle (2006) revealed that the average enrolment of females is 19.35% while that of the male% are 80.65% in technology education in University

of Lagos respectively. Also, results from table two establish that gender disparity exists in the Enrolment in Technical and Vocational Education.

Quality of Technical and Vocational and Training (TVET) Graduates

Quality can be defined in many different ways. For instance, it can mean excellence, zero defects, uniform quality, satisfying customer needs or operational improvement. Instead of creating a pervasive and unequivocal definition of TVET quality, it is more relevant to examine it as a relative and contextual concept. Quality is always bound to satisfying customer needs. Defining quality is ultimately a common task for TVET providers and their key customer and stakeholder groups. Quality refers to the degree to which a set of inherent characteristics fulfils requirements. The quality of education and training means the ability of education and training to meet specified objectives and customer needs. Quality assurance is that part of quality management focused on providing confidence that quality requirements will be fulfilled. Examples of quality assurance in vocational education and training include vocational skills demonstrations and competence tests in vocational education and training.

Facilities in Technical and Vocational Education

Technical and Vocational Education facilities are all the infrastructural facilities like workshops, laboratories, studios, equipment, machines, tools, consumable materials instructional materials, etc, that are used for teaching TVET courses and programmes. These facilities are required in adequate quantity and quality for any TVET programme to meet the needs of the learners and the society. Chado (2004) observed that many institutions offering

TVET programmes lack facilities for learning and those that are available are either outdated, broken down or out of use due to other related problems. Some of these problems are lack of consumable materials and electricity power for operating the machines and equipment. Similarly, Emah (2005) reported that the expendable materials required to be used on equipment and machines for practices and students projects in TVET programmes are lacking in schools thereby denying students and teachers the opportunity to use the facilities. This is because these facilities cannot function without the appropriate consumable materials. Examples, Woodwork Technology practices can not be performed without the supply of wood materials, nails, screws, glues, etc.

Theoretical Framework

The study took its framework from the Hezel Crag’s Model of an effective school system with emphasis on supporting input provisions. The model is further strengthened with Charles Posser’s General Theories of Vocational Education (GTVE).

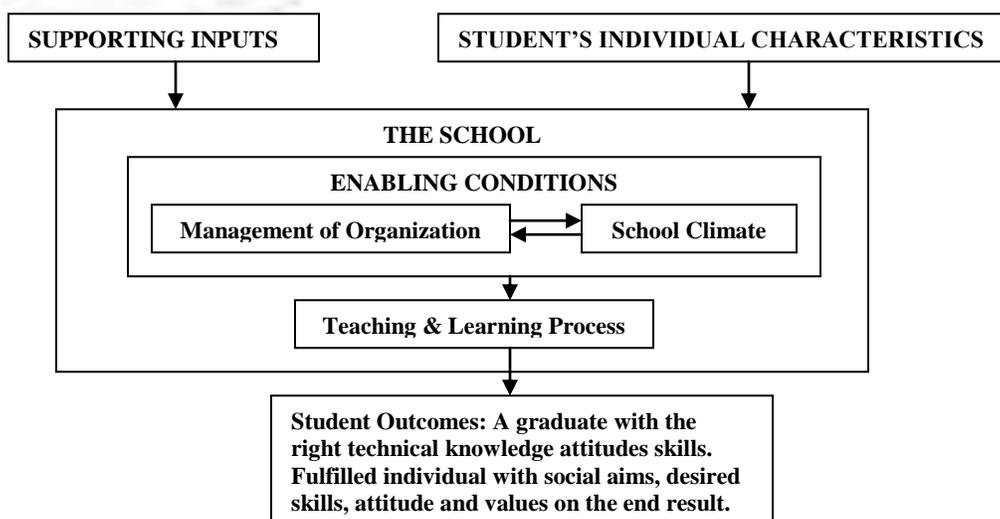


Figure 1: Quality Input Model for School Effectiveness: Adapted from Crag, (1995)

The model notes that school supporting inputs Includes what comes from community and parents such as material inputs in cash or in kind and perhaps expertise in particular areas. The government supports schools when it enacts appropriate educational policies, provide appropriate instructional and technical support, and supplies school with sufficient and appropriate teaching staff.

Another crucial aspect of the model relevant to this study is the provision of the ‘Enabling Conditions’ of learning, Literary materials, teaching and learning quality of the school heads, the management and organization of the school and the school climate. Thus, these conditions must be favourable, to provide a context in which inputs will lead to effective teaching and learning. When unfavourable, these conditions reduce the effectiveness of teaching and learning and ultimately affect production quality.

The General Theories of Vocational Education as proposed by Posser (1994).

Theory One: This theory states that vocational education 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. The theory reveals the condition, circumstances and influences surrounding and effecting the development of skill that will be relevant to get the work done. The learning job must not be for ordinary exercise but exact jobs or part of exact jobs or projects with actual tools and machines. Notably, classroom environment does not provide and compensate real life working environment. Therefore, with reference to this theory, work experience compensates this deficiency.

Theory Two: This theory states that effective vocational training can only be given where the training jobs are carried on in the same way with the same operations, the same tools and the same machines as in the occupation itself. This fundamental theory insists on the process of acquiring skill in the classroom or laboratory as the same in the work place. It is therefore disadvantageous to acquire skill on tools, equipment or machines which are quite different from those used at work place. Whatever the differences in tools and equipment or machines available for training in classroom and laboratory work experience normally augments and help to update the learners production skills.

Theory Three: Vocational education will be effective in proportion as it enables each individual to capitalize his interests, aptitudes, and intrinsic intelligence to the highest possible degree. In this theory, it is necessary to accept the fact that different individual's possess special aptitudes and talent. These individuals also differ in intrinsic intelligence, interest and talent. It will be wasteful effort to indoctrinate an individual in occupation which the individual lacks the traits and aptitudes necessary to be successful in occupation. Hitherto, many choose occupation as a result of parental influences or peer group influence.

Theory Four: This theory states that Effective vocational education 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.

Theory Five: Vocational training will be effective in proportion as the specific training experiences for forming right habits of doing and thinking are repeated to the point that the

habits developed are those of the finished skills necessary for gainful employment. The theory emphasis the need in doing and thinking about skills through repetitive training in every occupation. The training must be regular, orderly with logical procedures.

Theory Six: Vocational education 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. The theory emphasis the need to have a competent supervisor with habit formation experience and a master in the occupation with acquirements of habits by doing. Nobody can give out what he has not got. Therefore incompetent and inexperienced supervisors should not be made to supervise learners.

Theory Seven: 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 vocational education is not carried to that point with that individual, it is neither personally nor socially effective. The value of work experience is dependent on the individual for gainful employment so as to become productive as the market demands. This value must be met in order to exercise rights and privileges that belong to the occupation.

Theory Eight: Vocational education must recognize conditions as they are and must train individuals to meet the demands 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.

Theory Nine: The only reliable source of content for specific training in an occupation is in the experiences of masters of the occupation. The theory recognizes the need for

performance of activities such as those involved in training. Observation of practice on the job and personal participation or involvement through a master or masters who is knowledgeable and skillful through exposure to challenges on the job in the occupation.

Theory Ten: "For every occupation there is a body of content which is peculiar to that occupation and which practically has no functioning value in any other occupation." The theory expresses variations with efficiency in occupations such as skill, knowledge and intelligence peculiar to each occupation. That is, the ability to do any job varies directly as skill or the technical knowledge that function on the job or as job intelligence of the workman is improved. Furthermore, the theory demands that training must be given on actual experiences in the practice of the occupation and not on the pseudo jobs or experiences.

Theory Eleven: "Vocational education will render efficient social service in proportion as it meets the specific training needs of any group at the time that they need it and in such a way that they can most effectively profit by the instruction.

Theory twelve: "Vocational education will be socially efficient in proportion as in its methods of instruction and its personal relations with learners it takes into consideration those particular characteristics of any particular group which it serves."

Theory Thirteen: The administration of vocational education will be efficient in proportion as it is elastic and fluid rather than rigid and standardized. Theory recognizes mature, competent and self-respecting work force that is contributing to the development of technology and industry. Therefore, it is the responsibility of the administrators of work

experience scheme to organize and administer the work force in such a way that the above theory can be put to practice and sustained. Modern industry needs large number of groups of labour force who possess varying degrees of intrinsic intelligence with varying needs and are willing to serve the society. Consequently, it is either that the work-experience scheme is organized and administered with well guided theories, well trained, experienced and oriented personnel to enable the programme achieve its objectives or be dropped or substituted with another form of initiative. A recognition of this wisdom will serve the industry and work places, programme their technological inputs towards the growth of the economy.

Theory Fourteen: "While every reasonable effort should be made to reduce per capita cost, there is a minimum below which effective vocational education cannot be given, and if the course does not permit of this minimum of per capita cost, vocational education should not be attempted" This theory explains that TVET requires adequate funding for it yield the expected results. To drive home the critical value of those fourteen theoretical segments, this researcher adapted Integrated Framework for Analyzing Input Factors in Technical Teacher Production.

There are fourteen subsections to this theory which Posser propounded as complete in their respective ways as discussed here, but this researcher orchestrate the particular assumptions of each theory as found relevant to the study and these are briefly Presented below:

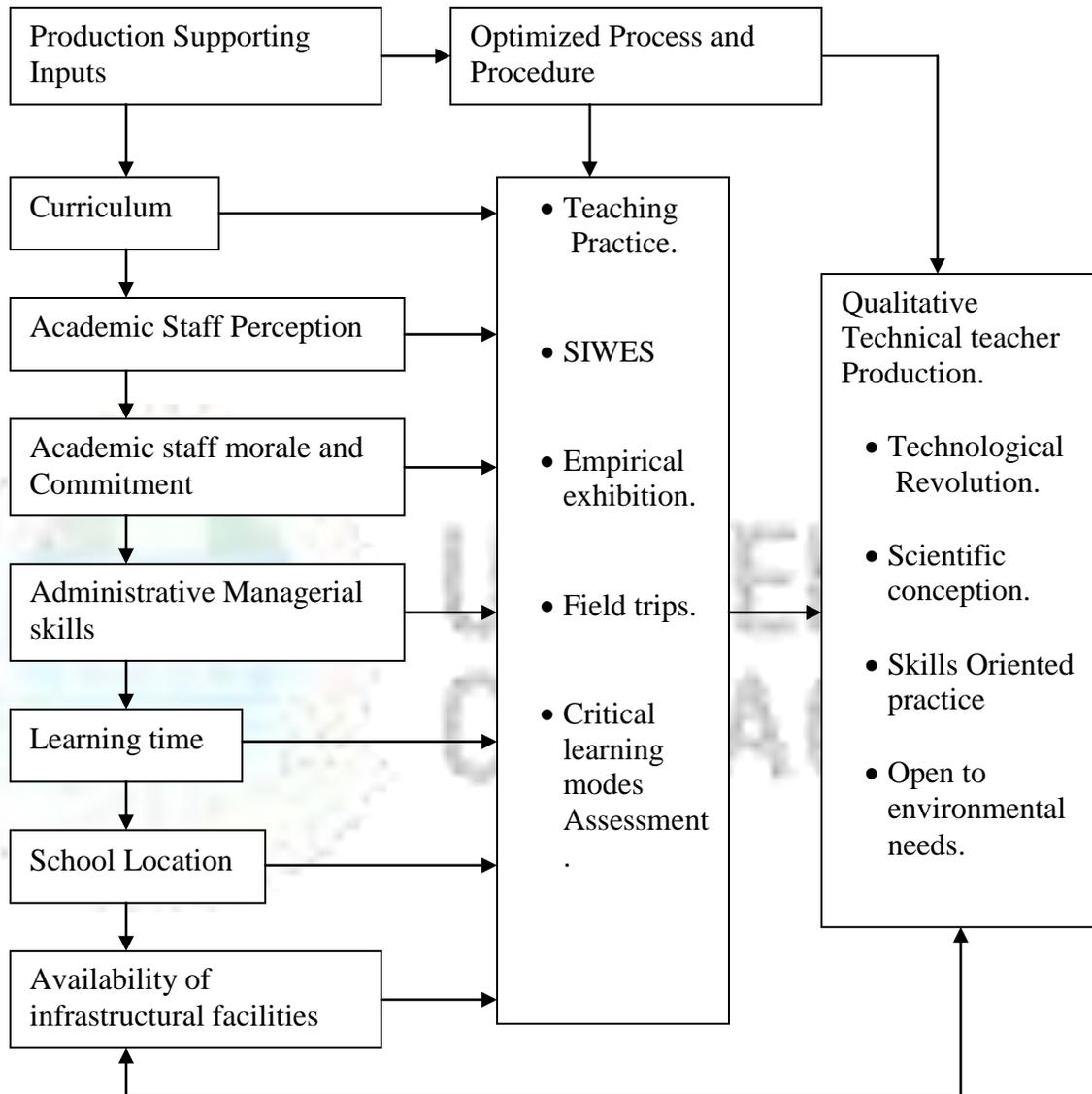
- That TVET must match vocational education training with learner's expected future work environment;

- That TVET should relate training tools with industrial / occupational types of equipment and machines;
- That TVET should harmonize training content with intricate intelligence of the individual;
- That TVET should dominate needs with profitability of programme;
- That TVET should proportionalize vocational training with employable skills;
- That TVET should employ trainers and supervisors with relevant skills and expertise;
- That TVET's minimum productive abilities should start with trainees who have standardized credentials in the various occupations they want to teach;
- That TVET should instill on labour market demand;
- There should be reliability of training content based on the quality of instructors by knowledge and skills;
- That follow up trainings should include continuous practice;
- That TVET should emphasize social sustainability values;
- That TVET should match method of instruction with the learning group characterizers;
- That TVET administrator should be made elastic and fluid rather than rigid and standardized; and
- That TVET should reduce cost effectively which must not preclude adequate funding.

Implicitly Prosser insists that for effective structuring and process of TVE organization, the fourteen element theory should be obviously reflected in curriculum programme, activities,

facilities, sight for institution location, equipment, teacher quality, students background and sustainability value should be mapped out using elastic and standardized measures.

An Integrated Framework for Analyzing Input Factors in Technical Teacher



Source: Assumptions adapted from Possers' Theory of TVET (1994)

Figure 2: Integrated Framework for Analyzing Input Factors in Technical Teacher Production, adapted from Possers' Theory of TVET (1994) and Crag (1995) model

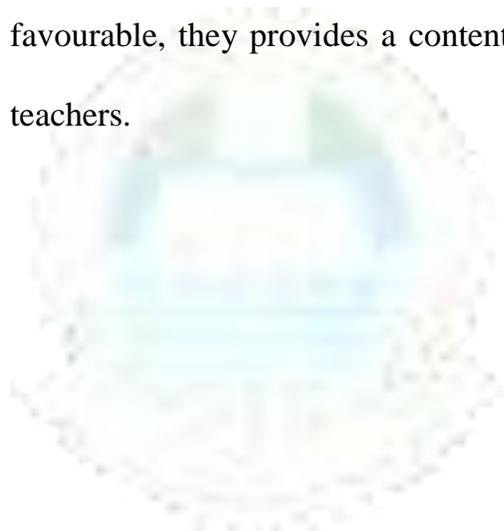
The figure above is a modification of Possers Theory of TVET and Crag model which indicates the place of those influencing content surrounding the school.

Supporting Inputs

Supporting inputs refer to certain school input factors which should supposedly be in place to positively contribute to the production of qualitative technical teachers.

Optimized Process and procedure.

This reveal the effect of supportive inputs on teaching practice, SIWES, empirical exhibition, field trips and critical learning modes assessment. When these “enabling conditions” are favourable, they provides a content in which inputs lead to production of quality technical teachers.



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CHAPTER THREE

RESEARCH METHODOLOGY

Introduction

The purpose of this chapter is to address the technical research procedure used in this study. The chapter describes this Research Design, Population, Sample and Sampling technique, Research Instruments, Reliability and validity of the instrument, Scoring technique, Data gathering procedures, Method of Data Analysis and their interpretation.

Research Design

This is a descriptive survey research, which sets out to identify school inputs and the extent to which they influence on the production of quality technical teachers from Colleges of Education in the South West Nigeria. The study design is quite apt because descriptive design according to Best and Kahan (1979:1986) involves what is, conditions or relationship that exist. By using this design, the study describes the opinions held; and also identifies the school input factors that determine the quality of technical teachers being produced by Colleges of Education in the study.

Population for the study

The target population of this study is the 300 level of four colleges of education in southwest Nigeria where technical and vocational education courses are offered, because year III students are at the verge of becoming graduates of the College of Education.

The population also included the lecturers in the schools of technical and vocational education in (Federal College of Education (T) Akoka, Tai-Solarin College of Education, College of education Ilesha, College of Education Ikere).

Sample and Sampling Technique

A purposive sampling technique was used to select a College of Education from each of Lagos, Ogun, Osun and Ekiti States based on the following criteria:

- (1) They offer Technical and Vocational courses.
- (2) They have year three students in their Technical and / or Vocational schools.
- (3) They have laboratories that are equipped prescribed NCCE equipment.

Table 1: Below indicates the population and the sample of both year three students and lecturers in schools of Technical and Vocation Education in the selected colleges.

STATE	COE	SCHOOL	Total No of Lecturers	No of Lecturers Sampled	Total No of Students	No of Students Sampled
LAGOS	Cosmopolitan	Vocational	31	25	80	67
		Technical	32	27	69	55
OGUN	Urban	Vocational	25	15	28	28
		Technical	09	05	08	08
OSUN	Semi-urban	Vocational	19	15	278	65
		Technical	05	03	44	44
EKITI	Rural	Vocational	21	09	188	54
		Technical	25	16	42	27

Table 1: Population and sample for the study

Cosmopolitan Colleges

Urban Colleges

Semi-urban Colleges

Rural Colleges

Research Instruments

The major instruments used to generate the relevant data were titled “Technical College Teachers Questionnaire (TCTQ)” and “Technical Vocational Education Students Questionnaire (TVESQ)”. TCTQ was given to lecturers in the school of Technical and Vocational Education while TVESQ was given to year three (3) students studying Technical and Vocational Education courses.

The Technical College Teachers Questionnaire (TCTQ)

The Technical College Teachers Questionnaire (TCTQ) was divided into two sections namely: Section A and Section B.

Section A (Demographic data) consisted of eight items which sought the demographic data of the respondents such as name of institution, department, course taught, number of students taught in the class, academic qualification, professional qualification, number of years of experience in teaching and training/seminars/workshops attended in the last one year.

Section B is a 21 item instrument used to measure different school input variables that could influence quality technical teacher production. These include, the curriculum, lecturers’ perception, lecturers morale, administrators’ managerial skills, learning time, availability of instructional materials and infrastructural facilities.

Technical Vocational Education Students Questionnaires (TVESQ)

The Technical Vocational Education Students (TVESQ) was also divided into two (2) sections namely: Section A and Section B

Section A (Demographic data) consisted of eight items which sought the demographic data of the respondents such as: name of institution, course of study, gender, age, qualification at the point of entry into the college, mode of entry into the college, cumulative grade point average (CGPA) and grade point average last semester.

Section B is a 27 item instrument used to measure the perception of the students and their parents to technical and vocational courses.

Validity and Reliability of the Technical College Teacher Questionnaire (TCTQ) and the Technical Vocational Education Students (TVESQ) Questionnaires.

Validity

To ascertain the extent, to which each item in the research instruments measured accurately the quality it intends to measure, the questionnaire was subjected to content validity test. The content validity for the items was established through expert opinion of the researchers' supervisors and other experts in educational research. Inputs from these experts were used to modify, reword or eliminate some items.

Reliability

In carry out a pilot study, the researcher selected a small sample of the entire population and administered the instrument.

To establish the consistency overtime of the validated instrument, Cronbach alpha for the reliability coefficient of the items were computed using the SPSS software. The reliability coefficient for Technical College Teacher Questionnaire was found to be 0.67 while that of Technical Vocational Education Students Questionnaires was 0.78

Data Collection Procedure

The instruments were administered between the months of August and September, 2008. The questionnaires were distributed by this researcher with the help of two experienced research assistants after training. The instruments were administered to both lecturers and students of Federal College of Education (Technical), Akoka, Tai-Solarin College of Education, Osun State College of Education, Ilesha and College of Education, Ikere-Ekiti State.

Independent and Dependent variables used in the study: Independent variables

In the Technical College Teacher Questionnaire, the institutional location as well as all the sub-divisions of the 21 items in section B were all treated as independent variable. Specifically, the variables identified are institutional location, lecturers' perception, lecturers' morale, administrators' managerial skills, learning time, availability of instructional materials and infrastructural facilities.

In the Technical Vocational Education Students Questionnaires (TVESQ), the institutional location as well as parental perception (comprising a collection of items that measured perception of parents to technical and vocational courses) was also treated as independent variables.

Dependent variables

The dependent variables were all measured in the Technical Vocational Education Students Questionnaire (TVESQ). They are (i) the cumulative grade point average (ii) grade point average last semester and (iii) technical vocational students' attitudinal-scale; (i) and (ii) were used to ascertain their academic performance while (iii) was used to ascertain their

perception to technical and vocational courses they are doing in the college. In (iii), respondents were asked a number of questions about their perception to technical and vocational courses.

Scoring of the variables

Code	Meaning	Score
SD	Strongly Disagree	1
D	Disagree	2
A	Agree	3
SA	Strongly Agree	4

The scoring mode above is for positive statements. Where the statement is negative the scoring is reversed. That is SD = 4; D = 3; A = 2 and SA = 1. To ascertain the variables used in this study, the items in the questionnaires were coded starting from the first item in section A to the last item in section B. Scores for the items in section B of both instruments were based on the type of statement (whether positive or negative) as well as the weight of the responses given by the respondents. The summation of the scores from the items related to each of the variables from each subject constituted an operational definition for each of the variables tested.

Method of Data Analysis

Descriptive and inferential statistics were used for data analysis. Descriptive statistics (frequency and simple percentages) were computed for demographic information above the respondents. Other descriptive statistics used were mean and standard deviation. These and

Pearson product moment correlation (PPMC) coefficient were used to discuss the seven research questions. One-way analysis of variance (ANOVA) tests was used to test hypotheses one, two, three , four and five.

The Statistical Package for Social Sciences (SPSS) version 11.0 was used to analyze the data. All post hoc comparisons were performed using the Scheffe post hoc test for better identification where mean group differences lie among the variables. The alpha level of all the tests set at 0.05.

In the analysis, the mean rating for each term ranges between 1 and 4. Any mean below 2.50 is taken as below the benchmark. It then follows that any term with a mean below 2.50 benchmark is not accepted by the respondents. Any item with a mean ≥ 2.50 is taken as accepted by the respondents.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND SUMMARY OF FINDINGS.

Introduction

This chapter presents a detailed description of the findings of the main study. Section one provides the biographical data of the respondents. Section two provides the mean scores of respondents' opinions of the items in the two questionnaires: (i) The Technical Vocational Education Students' Questionnaire (TVESQ) and the Technical College Teachers Questionnaire (TCTQ), section three comprises the descriptive statistics of the scores obtained (from the items in the two questionnaires) on the variables of the study. The variables include: students' perception, parental perception, teachers' perception, teachers' morale, administrators' managerial skills, learning time, availability of instructional materials and infrastructural facilities. Section four presents the result of the analysis of the data in response to the research questions, while in section five, the hypotheses were tested and explained with the use of inferential statistics. The findings were discussed in section six.

Biographical Data of the Respondents

The Technical Vocational Education Students' Questionnaire (TVESQ) was administered to 99 Lecturers in the technical and vocational education related departments. Below is the summary of their responses to the various items on the instrument.

Table 5: The Composition of the Students' Data-Producing Sample**(N=344)**

S/N	Institutional Location	N	%
1	Cosmopolitan	63	18.3
	Urban	111	32.3
	Semi- Urban	81	23.5
	Rural	89	25.9
	Total	344	100.0
2	Course of Study		
	Vocational related	192	55.8
	Technical related	152	44.2
	Total	344	100.0
3	Gender		
	Male	182	53.5
	Female	157	46.5
	Total	339	100.0
4	Age Interval		
	15-19	32	9.4
	20-24	224	66.1
	25-29	25	7.4
	30-29	48	14.2
	40 and above	10	2.9
	Total	339	100.0
5	Entry Qualification		
	TC II	12	3.6
	Technical College	59	17.8
	WASCE/GCE/NECO	255	77.0
	Others	5	1.5
	Total	331	100.0
6	Mode of Entry		
	Pre-NCE	144	44.7
	JAMB	96	29.8
	Local Source	82	25.5
	Total	322	100.0

The Table Five shows the distribution of the sampled students by Institutional, Location, Course of study, Gender, Age, entry Qualifications and modes of entry into the Colleges.

The highest number of students sampled, (32.3%) as shown in the table five are from the colleges located in the urban area and the least sampled are from the cosmopolitan colleges. Observation shows that majority of students in the cosmopolitan Colleges are in the business related courses.

In addition, majority of students sampled for this study were studying vocational related courses (55.8%), while 44.2% of the sampled students are in technical and vocational related courses. This confirms the fact that very few students are involved in technical and vocational related courses. The distribution according to gender of students is fair, however majority are male students. It appears that, this is in agreement with the fact that technical related discipline is till a male dominated domain. It was however not clear from the questionnaires the sex of five of the sampled students.

Furthermore, the table shows that majority of the selected students were in their early twenties. 66.1% falls within the 20 – 24 years age range. 7.4% are in their late twenties (25-29 years). 14.2% are in their twenties. Only 9.4% are teenagers. This could have been caused by the fact that majority of them must have chosen to study technical and vocational courses in a college after years of failure in the bid to gain admission into the University.

A few of the respondents (2.9%) were however 40 years and above. This could have been accounted for by those who after years of working, see the need to develop themselves and also get higher certificate needed to facilitate their promotion in their various offices.

Also, the table shows that the students sampled are predominantly school certificate holders, 77% of them had WASSCE, GCE, OR NECO at the point of entry into the various College. 17.8% had Technical College Certificate, 3.6% had Teachers' Grade 2 Certificate and 1.5% had other qualifications from the 3 above. 13 of them did not signify their qualifications at the point of entry.

Finally, the table highlights that the majority of the students studying technical and vocational educational related courses in the Colleges were sourced through the PRE-NCE programmes, (44.7%). Twenty five point five percent (25.5%) were also locally sourced through sale of forms in the colleges. In all, 70.4% (44.7 + 25.5) of the students sampled were sourced locally either through the PRE-NCE programmes or the Local Source into year one. Only 29.8% (less than $\frac{1}{3}$) came in through the Joint Admissions Matriculations Board (JAMB) concluded examinations.

Table 6: The Composition of the Lecturers as Data-Producing Sample (N=99)

S/N	Institutional Location	N	%
1	Cosmopolitan	32	32.3
	Urban	19	19.2
	Semi- Urban	27	27.3
	Rural	21	21.2
	Total	99	100.0
2	Course Taught		
	Vocational related courses	47	47.5
	Technical related courses	52	52.5
	Total	99	100.0
3	Academic Qualification		
	Higher National Diploma	8	8.2
	Bachelors Degree	39	40.2
	Masters' Degree	44	45.4
	PHD Degree	6	6.2
	Total	97	100.0
4	Years of Experience		
	0-5years	22	23.2
	6-10 years	21	22
	11-15 years	16	16
	Above 15 years	36	37
	Total	95	100.0

Table six shows the distribution of Lecturers according to Institutional Location, Courses taught, Academic Qualifications, years of experience and the scores of teachers' opinion on curriculum and quality teacher production (N=99).

The highest number of Lecturers sampled (32.3%) as shown in the table, are from the cosmopolitan city. It should be noted that the number of students sampled are least in the cosmopolitan city. The least number of Lecturers sampled are from the urban colleges, which also has the highest sampled students.

Also, from the table, the majority of the Lecturers sampled (52.5%) teach technical related courses. This is in contest with the number of students sampled in which majority were offering vocational related courses.

Furthermore, the highest number of lecturers sampled has masters’ degree (45.4%). This is followed: Bachelor’s degree (40.2%). The 40.2% met either be on the masters’ programme or are planning to commence it. 6.2% of the lecturers have PhD degree while two of the respondents did not specify the highest academic qualification possessed by them. Thirty seven point nine percent (37.9%) (more than 1/3) of the lecturers have above 15 years experience in the profession, which shows that the lecturers are well experienced. Only 23.2% have between 0 and 5 years of experience on the job.

Table 7: Teachers’ Opinion on Curriculum and Quality Teacher Production (N =99)

S/N	Items	N	Mean	SD	Remark
1	The present Technical Vocational Education (TVE) curriculum in Colleges of Education (Technical) is adequate to prepare students for the skills required in the labour marker	99	2.89	1.01	A
2	The TVE curriculum is adequate to enable graduates stand on their own as entrepreneurs	99	2.77	0.86	A
3	Graduates need to undergo extra apprenticeship programme after certification to be effective in the labour market	99	3.16	1.02	A

N – No of respondents, S.D – Standard Deviation, A – Agree, D – Disagree

Table 7. presents the mean scores of opinions of lecturers on both TVET curriculum quality and the quality of graduate produce by Colleges of Education in the southwestern Nigeria. Academic performance cut off points of 2.50 was taken as the level of acceptance for quality graduate.

The table therefore reveals that the statements bordering on curriculum as well as the one bordering on quality of graduates were all accepted: Put succinctly, programme adequacy, entrepreneurial readiness, and graduate fitness. For the labour market shows mean score of: 2.89, 2.77, and 3.16 respectively (Table 7). The Lecturers therefore agreed that the present curriculum is adequate to both prepare the students for the skills required in the labour market and also enable them stand on their own as entrepreneurs. The Lecturers were also in agreement with the fact that the graduates need to undergo extra apprenticeship programme(s) after certification, in order to be effective in the labour market.

Table 8: Teachers' Perception on Technical Vocational Education (N=99)

S/N	Items	N	Mean	SD	Remark
4	I enjoy arranging for experiments in the laboratory	99	3.38	0.88	A
5	Designing students activities in practical work is difficult for me	99	1.44	0.91	D
6	I feel sad when I am not available to teach my students	99	3.67	0.67	A

N – No of respondents, S.D – Standard Deviation, A – Agree, D – Disagree

Table 8, shows the mean distribution of lecturers' opinions on different attitudinal measurements. Since the cut-off point for acceptance is 2.50, the lecturers generally were positive in their responses to two of the three items. Therefore the lecturers from different Colleges of education in the south western part of Nigeria enjoyed arranging for experiments in the laboratories. However they disagreed that designing practical work for students was a difficult task for them. They also agreed with the fact that their non availability to teach their students made them sad.

The standard deviation (SD.) indicates the spread of the score from the mean and hence the genuineness of the mean score. A lower SD makes the mean more acceptable, hence indeed items 4 and 6 are accepted since their mean are high and the SDs are comparatively low

Table 9: Lecturers opinions on their level of morale (99)

S/N	Items	N	Mean	SD	Remark
7	The encouragement I receive on my job is the kind that greatly encourages me to make effort	99	2.79	1.02	A
8	I live, eat and breath my job	99	3.27	0.83	A
9	Generally speaking, my career in this institution has been satisfactory	99	3.29	0.72	A

N – No of respondents , S.D – Standard Deviation, A – Agree, D – Disagree

Table 9 shows generally that the ratings of the item were above the average of 2.50 in each case. Thus, the lecturers generally agreed that: they received encouragement on their job;

they live, ate and breathed their jobs and that generally, their careers in their respective institutions had been satisfactory.

Table 10: Lecturers’ Opinions on Administrators’ Managerial Skills (99)

S/N	Items	N	Mean	SD	Remark
10	The efforts of the management enhances the quality of graduates produced	99	2.90	0.95	A
11	From my experience, I feel the management treats staff poorly	99	2.59	1.00	A
12	I think the management considers employee’s welfare much less important than achievement of institutional goals	99	2.63	1.05	A

N – No of respondents , S.D – Standard Deviation, A – Agree, D – Disagree

From Table 10, the opinions of lecturers on all items bordering on administrators managerial skills were positive. Therefore in the lecturers’ opinions; the efforts of the management enhance the quality of graduates produced. They however were of the opinion that managements treat staff poorly and generally considered staff welfare much less important than achievement of institutional goals. As indicated in the column of the standard deviation, the spread of the scores from the mean in the 3 items ranged from 0.95 to 1.05. Hence the spread from the mean is about the same.

Table 11: Lecturers' Ratings of Adequacy of Learning Time (99)

S/N	Items	N	Mean	SD	Remark
13	The teaching hour is enough to fully teach the content of the curriculum satisfactorily	99	2.61	1.11	A
14	The stipulated time for practical is adequate	99	2.38	1.07	D
15	The period allocated for the SIWES programme is too short	99	2.30	1.17	D

N – No of respondents , S.D – Standard Deviation, A – Agree, D – Disagree

Table 11 shows lecturers' ratings of adequacy of learning time. In all, only teaching hours are adjudged as adequate for the teaching of the contents of the curriculum satisfactorily, whereas the time for practical and the period for SIWES were found to be quite inadequate.

Table 12: Lecturers' Ratings of Availability of Instructional Materials

S/N	Availability of Instructional Materials	N	Mean	SD	Remark
16	Modern equipment/tools/materials etc to teach TVE curriculum are available and adequate	99	2.09	0.93	D
17	In terms of instructional materials, the school is well equipped	99	2.41	0.89	D
18	The present instructional facilities in my schools are obsolete and therefore should be upgraded to meet the standard	99	2.97	1.02	A

N – No of respondents , S.D – Standard Deviation, A – Agree, D – Disagree

Table 12 shows that the materials to teach TVE are either inadequate or not available in some situations. Some were obsolete and need upgrading. Similarly. The schools were not well equipped with instructional materials. Therefore the state of the instructional material to teach TVE courses leaves much to be desired.

The S.D of item 18 is higher than those of items 16 and 17 which were rejected. The implication is that the score of the accepted item varied from the mean more than the scores of those rejected. The view of the lecturers on the availability of instructional materials therefore varied widely even through higher mean was recorded.

Table 13: Lecturers' Ratings on Infrastructural Facilities in Their Colleges (99)

S/N	Infrastructural Facilities	N	Mean	SD	Remark
19	In terms of infrastructural facilities, my school is well equipped	99	2.55	0.93	A
20	The present infrastructural facilities in my school are obsolete and therefore should be upgraded to meet the standard	99	2.76	1.08	A
21	More laboratories and lecture rooms are needed in my school	99	3.39	1.00	A

N – No of respondents , S.D – Standard Deviation, A – Agree, D – Disagree

Table 13 shows lecturers' ratings of infrastructural facilities in their colleges. The lecturers in their ratings agreed with all the three (3) items. Therefore, in the opinion of the lecturers, the colleges are well equipped with infrastructural facilities which are obsolete. They also agreed with the statement that more laboratories and lecture rooms need to be built in their colleges. Based on the findings of this research, one could conclude that the facilities are available and adequate but quite obsolete.

The S.D. ranges from 0.93 to 1.08. The difference in the degree of spread of respondents opinion could still be accommodated.

Description of the Independent and Dependent Variables of the Study (N=380)

Table 14: Quality of Teacher Production

S/N	Variable	N	Mean	SD
1	Performance of trainees	344	3.89	0.83
2	Perception of trainees on TVE	344	72.53	12.97

N – No of respondents, S.D – Standard Deviation, A – Agree, D – Disagree

Table 14 shows the quality of teacher production from the Colleges of Education in the south western, Nigeria. On the average, the performance was good but not excellent. The grade point average was found to be 3.89 out of a total of 5.00. Their perception of TVE showed close association (i.e agreement). Their mean attitude score was 72.53. The spread of the attitudinal scores from the mean is however fairly large (12.97). This could be because of the performance scores (which is the students' grade point average) ranges from 0 to 5 while perception scores ranges from 4 to 96.

Table 15: Independent Variables

S/N	Variables	N	Mean	SD
1	Perception of lectures	99	70.67	10.51
2	Lecturers' morale	99	75.73	18.32
3	Administrators managerial skills	99	67.33	15.03
4	Learning time	99	60.48	18.85
5	Availability of instructional materials	99	62.01	12.44
6	Infrastructural facilities	99	72.51	12.79
7	Parents' perception	344	72.49	17.04

Table 15 shows the mean ratings of each of the independent variables. The mean rating of the lecturers' morale (75.73) was the highest while that of learning time (60.48) was the lowest. Perception of lecturers ($\bar{x} = 70.67$) infrastructural facilities ($\bar{x} = 72.51$) and administrators managerial skill ($\bar{x} = 7.33$) were also rated high as the ratings of each was above 60.

In this section, the data collected were analyzed to provide answers to the research questions and also test the hypotheses raised.

Research Question One: To what extent does teachers' perception influence quality technical teacher production from colleges of education?

Table 16: The Relationship Between Teachers' Perception and Students' Performance (N=344)

		Students Performance	Teachers' Perception
Students' Performance	PPMC	1.000	- 0.028
	P-value		0.627
Teachers' Perception	PPMC	- 0.028	1.000
	P- value	0.627	

PPMC – Pearson Product Moment Correlation; P-value – Significant value

A Pearson Product Moment Correlation coefficient was calculated for the relationship between students' performance and teachers' perception. A weak negative correlation that was not significant was found ($r = -0.028$, $p > 0.05$). Therefore teachers' perception is not

related to students' performance in this study. It then follows that teachers' perception might not in any way influence students' performance positively.

Table 17: The Relationship Between Teachers' perception and Students' Perception of TVE courses (N = 344)

		Students Performance	Teachers' Perception
Students' Perception	PPMC	1.000	- 0.042
	P-value		0.443
Teachers' Perception	PPMC	- 0.075	1.000
	P- value	0.443	.

PPMC – Pearson Product Moment Correlation; P-value – Significant value

A Pearson Product Moment Correlation (PPMC) coefficient was calculated for the relationship between students' Perception to TVE courses and teachers' Perception of their workplace. A weak negative correlation that was not significant was also found ($r = -0.042$, $p > 0.05$). Therefore, teachers' perception in the workplace cannot be said to relate with their students' perception of TVE courses. This study shows that teachers' perception does not influence students' perception of TVE courses.

In conclusion, Tables 16 and 17 presented under this research question shows that lecturers' perception in the workplace influenced neither students' performance in TVE courses, nor their perception to TVE courses positively. Students' performance in TVE and perception of TVE are what quality technical teacher production is comprised of in this study. Therefore,

teachers' perception has a weak negative influence that is not significant on quality technical teacher production.

Research Question Two: To what extent does Teachers' Morale influence quality Technical Teacher Production from Colleges of Education?

Table 18: The Relationship between Teachers' Morale and Students' Performance in TVE Courses (N = 344)

		Students	Teachers' Morale
		Performance	
Students' performance	PPMC	1.000	- 0.135*
	P-value	.	0.020
Teachers' Morale	PPMC	- 0.135*	1.000
	P- value	0.020	.

PPMC – Pearson Product Moment Correlation; P-value – Significant value

*** Correlation is significant at the 0.05 level (2 tailed)**

A pearson product moment correlation coefficient were calculated for the relationship between students' performance in TVE courses and teachers' morale. A weak negative correlation that was significant was found ($r = -0.052$ $p < 0.05$). Therefore teachers' morale has a weak negative relationship with the students' performance.

The implication of this finding is that certain schools where teachers' morale is higher, students' performance is comparatively low. The negative relationship is however weak ($r = -0.135$). To buttress this finding, the breakdown of teachers' morale and students' performance across the college is presented below:

Table 19: Description of Teachers' Morale and Students' Performance across Schools:

	Students Performance	Teachers' Morale
Cosmopolitan	3.51	79.656
Urban	4.03	74.662
Semi-Urban	3.91	70.147
Rural	3.83	76.160

Table 19 above shows the reason why there was a weak negative relationship between students' performance and teachers' morale. The institution in the Cosmopolitan city with had the highest in Teachers' Morale seems to show the lowest students' performance. In the next two schools, the higher the teachers' morale, the higher the performance of students. The school with the highest teachers' morale and lowest students' performance is cited in one of the busy cities in the Southwestern Nigeria. This must have been responsible for this negative correlation between teachers' morale and students' performance.

Table 20: The Relationship Between Teachers' Morale and Students' Perception of TVE Courses (N = 344)

		Students Perception	Teachers' Perception
Students' Perception of TVE Course	PPMC	1.000	0.052
	P-value	.	0.332
Teachers' Morale	PPMC	0.052	1.000
	P- value	0.332	.

PPMC – Pearson Product Moment Correlation; P-value – Significant value

Pearson Product Moment Correlation (PPMC) coefficient was calculated for the relationship between teachers' morale and students' perception to TVE courses. A very weak positive relationship which is not significant was found ($r = 0.052$, $p > 0.05$). In conclusion, teachers' morale has a negative influence which is significant on student's performance. It was also seen to have a weak, positive influence which is not reliable on student's Perception to TVE courses.

Research Question Three: Does managerial skills among colleges of education administrators affect the quality of the technical teacher production from those colleges?

Table 21: The Relationship Between Administrators' Managerial Skills and Students' Performance in TVE Courses

		Students' Performance	Administrators' Managerial Skills
Students' Performance in TVE Course	PPMC	1.000	-0.015
	P-value	.	0.799
Administrators Managerial Skills	PPMC	-0.015	1.000
	P-value	0.799	.

PPMC – Pearson Product Moment Correlation; P-value – Significant value

Pearson product moment Correlation coefficient was calculated for the relationship between students' performance in TVE courses and the managerial skills of administrators of the colleges of education. A weak negative correlation that was not significant was found ($r = -$

0.015, $p > 0.05$). Therefore, the managerial skills of administrators in the colleges had a weak negative relationship that was not significant at 0.05 level of significance with students' performance. Hence, certain colleges where the managerial skills of administrators were high, students' performance in TVE courses were found to be relatively low. A further analysis of the administrators' skills and students' performance in TVE courses across schools would be helpful in explaining the finding above.

Table 22: Description of Administrators' Skills and Students' Performance across Schools

Location	Students Performance in TVE Courses	Administrators' Managerial Skills
Cosmopolitan	3.51	66.119
Urban	4.03	66.023
Semi-Urban	3.91	67.955
Rural	3.83	70.805

The rating of administrators' skills put the colleges located in the rural area on top; students performance in TVE courses from Urban was also the best. Comparing Cosmopolitan with Semi Urban, the administrators were rated higher in Cosmopolitan while students' performance was better in Urban.

Table 23: The Relationship Between Administrators’ Managerial Skills and Students’

Perception of TVE Courses

(N = 344)

		Students’ Perception of TVE courses	Administrators Managerial Skills
Students perception of TVE Courses	PPMC	1.00	- 0.236 **
	P- value	.	0.000
Administrators’ Managerial Skills	PPMC	0.236**	1.000
	P- Value	0.000	.

PPMC – Pearson Product Moment Correlation; P-value – Significant value

** Correlation is significant at 0.01 level (2 – tailed)

Pearson product moment Correlation (PPMC) coefficient was calculated for the relationship between Administrators’ managerial skills and students’ perception to TVE Courses. A weak negative correlation at 0.05 level of significance was found ($r = - 0.120$, $p < 0.05$). A further analysis of the ratings of administrators’ skills and students’ perception to TVE courses across schools is presented below:

Table 24: Description of Administrators Managerial Skills and Students perception of TVE Courses across Schools

School	Students’ Perception of TVE courses	Administrators Managerial Skills
Cosmopolitan	73.83	66.119
Urban	75.86	66.023
Semi-Urban	73.58	67.955
Rural	67.62	70.805

Rural had the highest rating in the administrators managerial skills but came last in the perception of the students of TVE courses. Urban had the lowest rating of administrators’ managerial skills but highest in the perception of students to TVE courses. (N = 344)

Research Question Four: Does Academic Learning time affect qualitative Technical Teacher Production from College of Education?

Table 25: The Relationship Between Academic Learning Time and Students’

Performance in TVE Courses		(N = 344)	
		Students’ Performance TVE courses	Academic in Learning Time
Students’ Performance	P- Value	1.000	0.120 *
In TVE Courses	P- value	.	0.039
Academic	PPMC	0.120*	1.000
Learning time	P- Value	0.039	.

PPMC – Pearson Product Moment Correlation; P-value – Significant value

** Correlation is significant at the 0.05 level (2-tailed)

Pearson product moment correlation (PPMC) coefficient was calculated for the relationship between students’ performance in TVE courses and academic learning time in the colleges of education. A weak positive correlation that was significant at 0.05 level was found ($r = 0.229, p < 0.05$).

Table 26: The Relationship Between Academic Learning Time and Students’

Perception of TVE Courses		(N = 344)	
		Students’ perception of TVE courses	Academic Learning Time
Students perception	PPMC	1.000	-0.020
of TVE Courses	P- value	.	0.707
Academic	PPMC	-0.020	1.000
Learning time	P- Value	0.707	.

PPMC – Pearson Product Moment Correlation; P-value – Significant value

Pearson product moment Correlation coefficient was calculated for the relationship between Academic Learning Time and Students' Perception of TVE courses. A very weak negative relationship which is not significant was found ($r = -0.020$, $p > 0.05$).

Table 27: The Relationship between Parental Perception of Technical and Vocational Education and Qualitative Technical Teacher Production from Colleges of Education

		Students' Performance to TVE courses	Parental perception of Technical Education
Students performance To TVE Courses	PPMC	1.000	- 0.087
	P- value	.	0.146
Parental perception of Technical Education	PPMC	- 0.087	1.00
	P- Value	0.146	.

PPMC – Pearson Product Moment Correlation; P-value – Significant value

Pearson product moment Correlation coefficient was calculated for the relationship between students' performance in TVE courses and Parental Perception of Technical and Vocational Education. A very weak negative correlation that was not significant was found ($r = - 0.087$, $p > 0.05$). A further analysis of parental perception of technical and vocational education and students' Performance in TVE courses across schools is presented below:

Table 28: Parental Perception of Technical and Vocational Education and Students' Performance in TVE Courses across Schools:

School	Students' Performance in TVE Courses	Parental Perception of Technical Education
Cosmopolitan	3.51	7.11
Urban	4.03	9.51
Semi-Urban	3.91	8.71
Rural	3.78	8.41

Parental perception of technical and vocational education and students' performance in TVE courses are highest in the institution cited in the urban community and lowest in the one cited within the Cosmopolitan city. Again, environmental influence is seen to be stronger on students' performance in TVE courses than parental perception of technical and vocational education.

Table 29: The Relationship Between Parental Perception of Technical Education and Students' Performance in TVE Courses (N = 344)

		Students' Perception of TVE courses	Parental Perception of Technical and Vocational Education
Students Perception of TVE Courses	PPMC	1.000	0.118
	P- value	.	0.032
Parental Perception of Technical and Vocational Education	PPMC	0.118	1.000
	P- Value	0.032	.

PPMC – Pearson Product Moment Correlation; P-value – Significant value

Pearson product moment Correlation (PPMC) coefficient was calculated for the relationship between Parental Perception of Technical and Vocational Education and Students' perception of TVE courses. A very weak positive relationship which is significant was found ($r = 0.118, p < 0.03$).

Research Question Five: Does the Availability of Modern Machines and Equipment affect qualitative Technical Teacher Production in Colleges of Education?

Table 30: Level of Relationship between Availability of Modern Machines and Equipment and Qualitative Technical Teacher Production in Colleges of Education (N = 344)

		Students' Performance in TVE courses	Availability of Modern Machines
Students' Performance. in TVE	PPMC	1.000	0.160
	P- value	.	0.006
Availability of Modern Machines	Pearson Corr.	0.160	1.000
	P- Value	0.006	.

PPMC – Pearson Product Moment Correlation; P-value – Significant value

** Correlation is significant at 0.05 level (2-tailed)

Pearson product moment correlation (PPMC) coefficient was calculated for the relationship between students' performance in TVE courses and availability of modern machines in the Colleges of Education. A weak positive correlation that was significant at 0.01 level was

found ($r = 0.160$, $p < 0.01$). The availability of modern machines in the Colleges had a low positive relationship with students' performance in TVE courses. Even though the influence was not high, this finding shows that availability of modern machine affects students' performance in TVE courses. The Colleges covered by the study, the more modern machines and equipments there are for instructions, the better the performance of students in TVE courses.

Table 31: The Relationship between Availability of Modern Machines and Equipments and Students Perception of TVE Courses (N = 344)

		Students' perception of TVE courses	Availability of Modern Machine and Equipments
Students perception Of TVE Courses	PPMC	1.000	0.154 *
	P- value	.	0.004
Availability of Modern Machines & Equ.	PPMC	0.154 *	1.000
	P- Value	0.004	.

PPMC – Pearson Product Moment Correlation; P-value – Significant value

* Correlation is significant at 0.05 level

Pearson product moment correlation (PPMC) coefficient was calculated for the relationship between availability of modern machines and equipment and students perception to TVE courses. A very low positive relationship which was not significant was found ($r = 0.154$, $p < 0.05$). This finding shows that the influence of availability of modern machines and equipments on students' perception of TVE courses was observed though minimal. The

finding might be an indication that machines and equipment are needed to impact on students' perception of TVE programmes.

Research Question Six: What is the relationship between availability of Infrastructural facilities and qualitative technical teacher production in Colleges of Education?

Table 32: The Relationship between Availability of Infrastructural Facilities and Students' Academic Performance in TVE Courses (N = 344)

		Student Academic Performance in TVE Courses	Availability of Infrastructural Facilities
Students academic Performance in TVE Courses	PPMC	1.000	0.014*
	P- value	.	0.816
Availability of Infrastructural Facilities	PPMC	0.014*	1.000
	P- Value	0.816	.

PPMC – Pearson Product Moment Correlation; P-value – Significant value

*** Correlation is significant at 0.05 level (2-tailed)**

Pearson product moment correlation (PPMC) coefficient was calculated for the relationship between students' academic performance in TVE courses and availability of infrastructural facilities in Colleges of Education. A weak positive correlation that was significant at 0.05 level was found ($r = 0.014$, $p < 0.05$). Therefore the availability of infrastructural facilities had a weak positive relationship which is significant (reliable); with students' academic performance in TVE courses. The finding in this study showed that availability of

infrastructural facilities had a weak influence on students' academic performance. The more the infrastructural facilities available, the better the academic performance of students in TVE courses. The significant relationship implies that the influence is reliable.

Table 33: The Relationship Between Availability of Infrastructural Facilities in the Colleges and Students Perception to TVE Courses (N = 344)

		Students' Perception of TVE courses	Availability of infrastructural Facilities in College
Students perception of TVE Courses	PPMC	1.000	0.184*
	P- value	.	0.002
Availability of Infrastructural Facilities in the College	PPMC	0.184*	1.000
	P- Value	0.002	.

PPMC – Pearson Product Moment Correlation; P-value – Significant value

*** Correlation is significant at 0.05 level (2-tailed)**

Pearson product moment correlation coefficient was calculated for the relationship between availability of infrastructural facilities and students' perception of TVE courses. A very weak positive relationship which is significant was found ($r = 0.184$, $p < 0.01$). The implication of this finding is that the influence of availability of infrastructural facilities in Colleges of education on students' perception of TVE courses is positive and significant but very weak.

Research Question Seven: What is the level of association between the gender of students and quality technical teacher production?

Table 34: The Level of Association Between Student’s Gender and Performance in TVE courses (N = 344)

		Gender	Students’ academic performance in TVE courses
Gender	PPMC	1.000	0.048
	P- Value	.	0.411
Students academic Performance in TVE Courses	PPMC	0.048	1.000
		0.411	
	P- Value		

PPMC – Pearson Product Moment Correlation; P-value – Significant value

Pearson product moment correlation coefficient (PPMC) was calculated for the relationship between students’ gender and their academic performance in TVE courses. A very weak positive correlation that was not significant at 0.05 level was found ($r = 0.048$, $P > 0.05$). Therefore, Colleges of Education students’ gender had a weak positive association (which is not significant) with students academic performance in TVE courses. The finding in this study therefore showed a very weak influence which is not significant on the academic performance of the students.

Table 35: The Level of Association Between Students' Gender and their Perception Towards TVE Courses (N = 344).

		Gender	Perception of TVE Courses
Gender	PPMC	1.000	-0.094
	P- value	.	0.084
perception of TVE Courses	PPMC	-0.094	1.000
	P- Value	0.084	

PPMC – Pearson Product Moment Correlation; P-value – Significant value

Pearson Product moment correlation coefficient (PPMC) was computed for the association between students' gender and their perception of TVE courses. A very weak negative association which is not significant was found between students' gender and their perception of TVE courses. ($r = -0.094$, $p > 0.05$). Therefore, colleges of education students' gender had a weak negative relationship with their perception of TVE courses.

At the coding stage of the analysis, male variable was coded as 1 while female variable was coded as 2. Given this background, the negative relationship between gender and perception suggests that the male students are more positively disposed to studying TVE courses than their female counterpart. The difference in attitudinal disposition across gender is however not significant ($P > 0.05$).

In this section, the data collected were analyzed to provide result of the test of the hypotheses raised.

Hypothesis One (H₀₁): Parental perception, teachers' morale, teachers' perception, administrators' managerial skills and gender will not relate significantly with qualitative technical teacher production.

Table 36: Relationship Between input Factors and Students' Performance in TVE Courses.

Model Summary

Model	R	R ²	Adjusted R ²	Standard Error	Regression F-Ratio	P-Value
	0.741	0.549	0.540	0.848	64.656	0.000

Model	Sum of Squares	Df	Mean Square	F	Pf value
Regression	231.373	5	46.275	64.656	0.000
Residual	190.377	266	0.716		
Total	421.750	271			

The multiple regression coefficient (R) showing the linear relationship between some input variables (parents' perception, teachers' morale, teachers' perception, administers skills and

gender) on students' performance in TVE courses as shown in Table 36 above is 0.741. The adjusted R-Square value is 0.540. This implies that the variation in students' performance in TVE courses accounted for by the above stated input factors is 54.0%.

Further verification using multiple regression ANOVA however produced F-ratio = 64.656, $P < 0.05$. This implies that there is a significant linear relationship between the input variables stated above and students' performance in TVE courses.

Table 38: Relationship Between input Factor and Students' Perception of TVE Courses.

Model	R	R ²	Adjusted R ²	Standard Error of Estimate	Regression F-Ratio	P-Value
	0.294	0.086	0.072	11.094	6.001	0.000

Model	Sum of Squares	Df	Mean Square	F	Pf value
Regression	3424.561	5	738.651	6.001	0.000
Residual	40136.049	318	123.079		
Total	43560.610	323			

Table 38 above shows that the multiple regression correlation coefficient (R) revealing the linear relationship between the independent variables (input factors) and dependent variables (Students' perception to TVE courses) is 0.294. the adjusted R-square equals 0.072, meaning

that all input variables listed above taking together accounted for 7.2% variation in students' perception of TVE courses.

Multiple regression ANOVA was used to further test the significance of the linear relationship between independent variables and dependent variables. F-ratio value equals 6.001; $P < 0.000$. this implies that the linear relationship between the input variables and students' perception of TVE courses is significant at 0.05 alpha level.

Table 40 Relative Effects of Managerial Skills, Teacher and Parent factor on Students' Performance in TVE Courses.

Model	Input Factors	Estimate	Standard Error	Beta	T	P-Value	Remarks
I	Administrators' management skills	-0.416	0.027	-0.647	-15.483	0.000	S
II	Teachers' morale	-0.359	0.054	-0.311	-6.664	0.000	S
III	Parents' perception	-0.0023	0.003	-0.116	-2.701	0.007	S
IV	Gender	-0.110	0.106	-0.044	-1.034	0.302	NS
V	Teachers' Perception	-0.0075	0.049	-0.003	-0.056	0.956	NS
	Constant	33.260	1.844		18.042	0.000	S
S		= Significant at 0.05 alpha level		N.S		= Not significant at 0.05 alpha level	

Table 40 shows the relative effects of the input factors on students' performance in the order of absolute magnitude as indicated by standardized Beta (β) weights.

Administrators' managerial skills contributed most though inversely to students' performance in TVE courses ($\beta = -0.647$; $T = -15.483$; ; $P < 0.05$). The input factor next to Administrators' managerial skills in the order of contribution is teachers' morale ($\beta = -0.311$; $T = -6.664$; $P < 0.05$) the contributions of parents' perception gender and teachers' perception are as follows;

Parents' perception ($\beta = 0.116$; $T = -2.701$; $P < 0.05$)

Gender ($\beta = -0.044$; $T = -1.034$; $P > 0.05$)

Teachers' Perception ($\beta = -0.003$, $T = -0.056$, $P < 0.05$)

Three of the predictor variables namely administrators' managerial skills, teachers' morale and parents' perception have significant relative effects on student's academic performance in TVE courses. It can be inferred from the result that students' academic performance in TVE courses in institutions where administrators' managerial skills, teachers' morale, gender and parents perception is low seems to be better than students' performance in institutions with higher administrators' managerial skills and teachers' morale and parents' perception.

Table 41: Relative Effects of some Input Factors on Students' Perception of TVE courses

Mode	Input Factors	Estimate	Standard Error	Beta	T	P value	Remarks
I	Administrators management skills	1.465	0.331	-0.241	-4.425	0.000	S
II	Parents perception	0.0789	0.037	0.103	1.832	0.068	S
III	Gender	- 2.279	1.283	-0.099	-1.776	0.077	NS
IV	Teachers morale	0.525	0.648	-0.050	-0.810	0.418	N.S
V	Teachers' Perception	- 0.331	0.586	-0.034	-0.585	0.573	NS
	Constant	72.938	22.729		7.609	0.000	S

S = Significant at 0.05 alpha level. NS = Not significant at 0.05 alpha level.

The relative effects of the highlighted input factors on students' perception to TVE courses in the order of absolute magnitude indicated by standardized Beta(β) weights are presented in the table above. Administrators' managerial skills contributed most although inversely to students' perception to TVE courses ($\beta = -0.241$; $T = -4.425$; $P < 0.05$). Next to administrators' managerial skills is parents' perception to TVE courses whose contribution was found not to be significant ($\beta = 0.103$; $T = -1.832$; $P > 0.05$).

The remaining three variables also have contributions which are not significant on the perception of students to TVE courses. Below are their contributions

Gender ($\beta = -0.099$; $T = -1.776$; $P > 0.05$).

Teachers' morale ($\beta = -0.050$; $T = -0.810$; $P > 0.05$).

Teachers' Perception ($\beta = -0.034$, $T = -0.565$, $P > 0.05$).

Only one predictor (administrators' managerial skills) is found to have significant relative effect on students' perception to TVE courses.

Institutions where administrators' managerial capacity higher seems to produce students with lower perception to TVE courses.



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Table 42: Relationship Between Input Factors and Qualitative Technical Teachers Production (Measured by Students' Performance and Perception)

Correlations		ADMSK	PARATT	INFACLS	TRSMOR	Students' Performance	Students' Perception
ADMSK		1.000					
Pearson Correlation		.					
P-Value		344					
N							
PARATT		-.083	1.00				
Pearson Correlation		.133	.				
P-Value		328	328				
N							
INFACLS		-.600**	-.084	1.00			
Pearson Correlation		.000	.127	.			
P-Value		344	328	344			
N							
TRSMOR		-.090	-.105	-.390**	1.0		
Pearson Correlation		.096	.057	.000	.		
P-Value		344	328	344	344		
N							
Students Performance		-.015	-.087	-.014	-.135*	1.0	
Pearson Correlation		.799	.146	.816	.020	.	
P-Value		298	284	298	298	298	
N							
Students Perception		-.236**	.118*	.164**	-.052	.057	1.0
Pearson Correlation		.000	.032	.002	.332	.328	.
P-Value		344	328	344	344	298	344
N							

****.** Correlation is significant at the 0.01 level (2-tailed).

*****. Correlation is significant at the 0.05 level (2-tailed).

The result on Table 42 above shows that students' performance has a negative significant relationship ($P < 0.05$) with only teachers' morale ($r = -0.135$) and weak negative relationships with administrators' managerial skill ($r = -0.015$); Parents' perception ($r = -0.087$) and infrastructural facilities ($r = -0.014$).

A weak negative significant relationship exist between students' perception and administrators' managerial skills ($P < 0.01$, $r = - 2.236$). A weak positive significant relationship exist between students perception and both parents' perception ($P < 0.05$, $r = 0.118$) and infrastructural facilities ($P < 0.05$, $r = 164$). The relationship between students' perception and teachers' morale is weak, negative and non-significant.

The table also shows that the input variable correlated one another. Two of the correlation are both negative and significant. Infrastructural facilities and Administrators' managerial skills have negative significant correlation that is fairly strong ($P < 0.01$; $r = -0.600$). Teachers' morale and infrastructural facilities also have a weak negative correlation that is significant ($P < 0.01$, $r = -0.390$).

Hypothesis Two (HO₂)

Qualitative Technical Teacher production in the Colleges of Education will not significantly differ due to differences in institutional locations and the administrators' managerial skills.

To test this hypothesis, a 3 x 3 univariate analysis of variance (ANOVA) was performed. The independent factors were institutional location and administrators' managerial skills, while each of academic performance in TVE courses and students' perception of TVE courses was entered as a dependent variable at a time. The results are presented in tables 43 to 44 below.

Table 43: Differences in Academic Performance Due to Institutional Location and Administrators' Managerial Skills

Variable		N	Mean	Standard Deviation
Institution	Cosmopolitan	53	3.51	0.116
	Urban	68	4.03	0.103
	Semi Urban	92	3.91	0.089
	Rural	85	3.78	
Administrator's Managerial Skills	Low	68	3.80	0.104
	Middle	85	3.91	0.094
	High	60	3.78	0.111

Table 44: Comparison of the administrations' managerial skills and students' academic performance in different institutions.

Name of Institution	Administrations Skills	Managerial	Mean student Performance in TVE courses
Cosmopolitan	66.119		3.51
Urban	66.023		4.03
Semi-Urban	67.955		3.91
Rural	70.805		3.78

Table 45: The Test of Significance of Institutional Location and Administrators Managerial Academic Performance.

Dependent Variable: GP

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	14.919	8	1.865	2.657	.009
Intercept	3266.423	1	3266.423	4653.181	.000
NAMINSTA	9.321	3	4.661	6.639	.002
ADMSKC	1.316	2	.658	.937	.393
NAMINSTA * ADMSKC	2.904	6	.726	1.034	.391
Error	143.203	294	.702		
Total	3728.000	213			
Corrected Total	158.122	212			

. R Squared = .094 (Adjusted R Squared = .059)

Table 43 above presents the descriptive data of students' performance in TVE courses in relation to the locations of their institutions and their administrators' managerial skills. The table reveals that the students sampled performed generally well in TVE courses irrespective of their institutions and their administrators' managerial skills. For instance, the lowest mean Grade Point Average (GPA) recorded, was from a college situated in the Cosmopolitan city. This lowest GPA was 3.51 out of a maximum obtainable GPA of 5.00. However, the mean GPA of the students in the various institutions seems to vary from one institution to the other. The students from urban had the highest mean GPA of 4.03, semi-urban followed with 3.91 while Cosmopolitan came last with 3.51.

In terms of administrators' managerial skills, table 40 shows the administrators managerial skills of the college situated in Urban area is least while the mean GPA of students academic performance in TVE courses is highest. For the cosmopolitan college, the administrators managerial skill is slightly higher but the mean GPA of students academic performance is the

lowest of all the four colleges sampled. Rural had the highest score in administrators managerial skills but urban and semi-urban in the mean GPA of students academic performance in TVE courses.

Table 45 shows the calculated f-value of 6.639 resulting in the influence of institution on the mean GPA of students academic performance in TVE courses. This is significant, since the level of significant value (0.002) is less than the 0.05 level of significance given 3 and 294 degrees of freedom at 0.05. It was also found that the influence of administrators' managerial skills on students' performance in TVE courses as shown by the mean GPA is insignificant ($f = 0.937$, $df = 2/204$, significant value = 0.393). These findings indicate that of the two factors (institution and administrator managerial skills) under consideration here, only institution was found to have significant influence on students' academic performance in TVE courses.

Similarly, a test of the interaction effects of students' institution by their administrators' managerial skills ($f = 1.034$, $df = 6/294$, significant value = 0.391 at 0.05 level of significance) was not statistically significant at 0.05 level of significance. This is because the significant value (0.391) is more than 0.05.

Table 46: Post HOC Analysis of Group Means of Academic Performance Based on Institution

(I) name of Institution attended	(J) name of Institution	Mean Difference (I – J)	Std. Error	Sig.	95% Confidence interval	
					Lower Bound	Upper Bound
COSMOPOLITAN	Urban	-.52*	.17	.025	-.99	-4.56E-02
	Semi-Urban	-.40	.16	.094	-.85	4.28E-02
	Rural	-.27	.16	.434	-.72	.19
URBAN	Cosmopolitan	.52*	.17	.025	4.56E-02	.99
	Semi Urban	.12	.15	.891	-.30	.53
	Rural	.25	.15	.417	-.17	.67
SEMI URBAN	Cosmopolitan	.40	.16	.094	-4.28E-02	.85
	Urban	-.12	.15	.891	-.53	.30
	Rural	.14	.14	.808	-.25	.53
RURAL	Cosmopolitan	.27	.16	.434	-.19	.72
	Urban	-.25	.15	.417	-.67	.17
	Rural	-.14	.14	.808	-.53	.25

Based on observed means.

* The mean difference is significant at the .05 level.

The Post hoc analysis was necessitated by the significant mean difference in students' academic performance across institutions at the 0.05 level of significance. The post hoc analysis displayed in table 42 above using multiple comparisons revealed a significant mean difference at 0.05 alpha level between performances of students from the cosmopolitan and urban colleges. The students from urban college performed significantly better than their counterparts in cosmopolitan (as seen in the table, the * implies significant performance).

Table 47: Differences in Students Perception of TVE Courses Due to Institutional Locations and Administrators' Managerial Skills

Variable		N	Mean	Standard Deviation
Institution	COSMOPOLITAN	63	73.833	12.210
	URBAN	81	75.860	11.480
	SEMI URBAN	111	73.588	13.908
	RURAL	89	67.625	10.131
Administrator's Managerial Skills	Low	144	74.973	11.806
	Middle	111	73.588	13.904
	High	89	67.625	10.131

Table 48: Comparison of the Administrator Managerial Skills and Students Perception of TVE Courses in Different Institution

Name of Institution	Administrators Managerial Skills	Student Perception to TVE Courses
COSMOPOLITAN	66.119	73.833
URBAN	66.023	75.860
SEMI URBAN	67.955	73.588
RURAL	70.805	67.625

Table 49: The test of Significance of Institutional Location and Administrators Managerial Skills on Student’s Perception of TVE Courses.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1152.935	8	144.117	.960	.468
Intercept	1198970.487	1	1198970.487	7989.960	.000
NAMINSTA	263.596	3	131.798	.878	.417
ADMSKC	1.615	2	.807	.005	.995
NAMINSTA * ADMSKC	883.040	6	220.760	1.471	.212
Error	36914.672	340	150.060		
Total	1337048.000	255			
Corrected Total	38067.608	254			

Table 48 shows the calculated mean value of TVE students’ perception to their courses due to their institutions and their administrators’ managerial skills. From the analysis, the mean scores of students perception to TVE courses for students in Urban is highest (75.860) and that of students in Rural is lowest (67.625). Generally however, their mean attitude to TVE courses is high and commendable as the lowest mean attitude recorded is found to be higher than 65 out of a maximum obtainable mark of 100.

Similar results were obtained in respect of administrators managerial skills, they all had very high mean scores. The least which is from those with high administrators’ managerial skills is 67.625 while the highest which is 74.973. The difference in the mean attitudinal scores however is not at all pronounced. The results show that the mean scores of administrators’ skills is generally high but differs slightly due to the influence of institution. To test if the above differences in the perception are statistically significant, univariate analysis of variance (ANOVA) was performed and the result is as follows:

The outcome showed no significant effect of administrators' managerial skills ($f = 0.005$; $df = 3/340$; significant value at 0.05 level of significance = 0.995). Similarly, a test of their interaction effect, institution by administrators' managerial skills ($f = 1.471$; $df = 6/340$; significant value at 0.05 level of significance = 0.212) was equally not statistically significant).

From the above findings, the following conclusions emerge:

- * The TVE students in the area of study showed a significant difference in academic performance in their courses due to differences in institutions ($F = 6.639$, $P < 0.05$)
- * The TVE students in the Nigerian Colleges of Education studied showed no significant difference in academic performance due to differences in their administrators' managerial skills ($F = 0.937$, $DF = 2/204$, $P > 0.05$).
- * The TVE students in the Nigerian Colleges of Education studied showed no significant difference in perception of TVE courses due to differences in their institutions' locations ($F = 1.034$, $df = 6/294$, $P > 0.05$)
- * The TVE students in the Nigerian Colleges of Education studied showed no significant difference in perception of TVE courses due to differences in their administrators' managerial skills ($F = 1.471$, $DF = 6/340$, $P > 0.05$),

Hypothesis Three (HO₃)

Qualitative Technical Teacher production in Nigerian Colleges of Education will not significantly differ due to differences in institutional location and learning time.

To test this hypothesis, a 3 x 3 univariate analysis of variance (ANOVA) was performed. The independent factors were institutional location and academic learning time while each of the mean value of students academic performance in TVE courses and students' mean value of attitudinal scores in TVE courses were entered as a dependent variable at a time. The results are presented in Tables 50 to 51

Table 50: Differences in Academic Performance Due to Institutional Location and Learning Time

Variable		N	Mean	Standard Deviation
Institution	COSMOPOLITAN	53	3.51	0.82
	URBAN	68	4.03	0.73
	SEMI URBAN	92	3.91	1.19
	RURAL	85	3.78	0.76
Learning Time	Low	121	3.80	0.81
	Middle	92	3.91	1.19
	High	85	3.78	0.76

Table 51: Comparison of the Academic Learning Time and Students' Academic Performance in TVE Courses in Different Institution.

Name of Institution	Academic learning time	Mean students' Academic in TVE courses
COSMOPOLITAN	54.405	3.51
URBAN	60.778	4.03
SEMI URBAN	68.394	3.91
RURAL	62.475	3.78

Table 52: The test of Significance of Institutional Location and Academic Learning Time on Students' Academic Performance.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	12.179	8	1.522	2.128	.035
Intercept	2235.948	1	2235.948	3125.412	.000
NAMINSTA	7.075	3	3.537	4.945	.008
LEARNTC	.318	2	.159	.222	.801
NAMINSTA * LEARNTC	1.082	6	.270	.378	.824
Error	145.943	249	.715		
Total	3728.000	213			
Corrected Total	158.122	212			

Table 50 presents the descriptive data of students' academic performance according to institutional location and academic learning time. As evident in the table, the students performed generally well in TVE courses irrespective of their institutional location and academic Learning time. For instance, the lowest mean Grade Point Average (GPA) recorded, was from Cosmopolitan College. This lowest GPA was 3.759 out of a maximum

obtainable GPA of 5.00. The students from the other two colleges performed better. The best mean GPA in academic performance came from the Urban college.

In terms of academic learning time, table 47 showed that there is no correlation between academic learning time and students' mean GPA. The urban college came first in academic learning time but second in the students mean GPA. The Cosmopolitan college was however the least both in academic learning time and mean GPA of students academic performance.

The computed f-value indicates that a significant difference existed due to institutional location ($f = 4.945$; $df = 3/249$; significance value recorded = 0.008). The computed f-value showed that no significant difference was observed due to academic learning time ($f = 0.222$; $df = 2/249$; significance recorded is 0.801). A test of the interaction effect of institutional location by academic learning time ($f = 0.378$; $df = 6/249$; with a level of significance of 0.824) were not statistically significant at 0.05 alpha level. To determine where significant differences exist between institutions based on their location, pair wise comparisons were performed using scheffe post hoc analysis and the results are summarized in table 49 below:

Table 53: Post hoc Analysis of Group Means for Mean GPA of Students' Academic Performance

(I) name of Institution attended	(J) name of Institution attended	Mean Difference (I – J)	Std. Error	Sig.	95% Confidence interval	
					Lower Bound	Upper Bound
COSMOPOLITAN	Urban	-.52*	.17	.025	-.99	-4.56E-02
	Semi-Urban	-.40	.16	.094	-.85	4.28E-02
	Rural	-.27	.16	.434	-.72	.19
URBAN	Cosmopolitan	.52*	.17	.025	4.56E-02	.99
	Semi Urban	.12	.15	.891	-.30	.53
	Rural	.25	.15	.417	-.17	.67
SEMI URBAN	Cosmopolitan	.40	.16	.094	-4.28E-02	.85
	Urban	-.12	.15	.891	-.53	.30
	Rural	.14	.14	.808	-.25	.53
RURAL	Cosmopolitan	.27	.16	.434	-.19	.72
	Urban	-.25	.15	.417	-.67	.17
	Rural	-.14	.14	.808	-.53	.25

* The mean difference is significant at the .05 level

Post hoc analysis displayed in table 49 using scheffe revealed a significant mean difference at 0.05 alpha level for Cosmopolitan and Urban colleges. For instance students of Urban College performed significantly better than their counterparts in Cosmopolitan college as evidenced by the * on – 0.52 in table 49.

Table 54: Differences in Students' Perception to TVE Courses Due to Institutional Location and Academic Learning Time

Variable		N	Mean	Standard Deviation
Institution	COSMOPOLITAN	63	73.833	12.210
	URBAN	81	75.860	11.480
	SEMI URBAN	111	73.588	13.908
	RURAL	89	67.625	10.131
Academic Learning Time	Low	93	74.973	11.806
	Middle	100	67.625	13.908
	High	62	73.588	10.131

Table 55: Comparison of the Academic Learning Time and Students' Perception of TVE Courses in Different Institutions.

Location	Academic Learning Time	Students' Perception of TVE Courses
COSMOPOLITAN	54.405	73.833
URBAN	60.778	75.860
SEMI URBAN	68.394	73.588
RURAL	62.475	67.625

Table: 56: The Test of Significance of Institutional Location and Academic Learning Time on Student's Perception of TVE Courses.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1169.793 ^a	8	146.224	.975	.456
Intercept	918677.565	1	918677.565	6124.880	.000
NAMINSTA	164.015	3	82.008	.547	.580
LEARNTC	461.469	2	230.735	1.538	.217
NAMINSTA * LEARNTC	572.268	6	143.067	.954	.434
Error	36897.815	340	149.991		
Total	1337048.000	255			
Corrected Total	38067.608	254			

Table 54 shows the mean values of TVE students' perception of their courses due to their institutions and academic learning time. From the analysis, the mean scores of students' perception to TVE courses due to institutional location is generally high. The students in Urban had the highest mean score (75.860) while those from Rural had the lowest mean score (67.625).

Similarly results were obtained in respect of academic learning time. The disposition (Perception) of the students in the study of TVE courses appears not to be directly proportional to the time available to them to learn those courses. Cosmopolitan had the lowest mean academic learning time and came second in the students' perception to TVE courses. To test if the above differences in College of Education students' perception of TVE courses are statistically significant, univariate analysis of variance (ANOVA) was performed and the result is as follows:

The computed f-value ($f = 0.547$; $df = 3/340$; significant = 0.580) as shown in table 65 shows that institutional location was not a factor in students' perception of TVE courses.

The computation also indicates no significant effect of academic learning time ($f = 1.538$; $df = 3/340$; significant value at 0.05 alpha level = 0.217).

Similarly, a test of their interaction effect, institutional location by academic learning time ($f = 0.954$; $df = 6/340$; significant value at 0.05 level = 0.434) was equally not statistically significant.

From the above findings, the following conclusions emerge:

- * The TVE students in the sampled Colleges of Education showed a significant difference in academic performance in their courses due to differences in institutional locations ($F=9.222$, $DF = 2/249$, $P>0.05$).
- * The TVE students in Nigerian Colleges of Education showed no significant difference in academic performance in their courses due to differences in the academic learning time ($F= 0.378$, $df = 6/249$, $p>0.05$).
- * The TVE students in Nigerian Colleges of Education showed no significant difference in perception of TVE courses due to differences in their institutional locations($F= 1.538$, $df = 3/340$, $p>0.05$)
- * The TVE students in Nigerian Colleges of Education showed no significant difference in perception of TVE courses due to differences in academic learning time ($F= 0.954$, $df = 6/340$, $p>0.05$).

Hypothesis Four (HO₄)

The location of the Nigerian Colleges of Education and availability of instructional materials will not significantly impact on the Production of Qualitative Technical Teachers.

To test this hypothesis, a 3 x 3 univariate analysis of variance (ANOVA) was performed.

The independent factors were institutional location and availability of instructional material, while each of the academic performance in TVE courses and students perception of TVE courses was entered as a dependent variable at a time. The results are presented in tables 57 to 59.

Table 57: Differences in Academic Performance Due to Institutional Location and Availability of Instructional Materials

Variable		N	Mean	Standard Deviation
Institution	COSMOPOLITAN	53	3.51	0.82
	URBAN	68	4.03	0.73
	SEMI URBAN	92	3.91	1.19
	RURAL	85	3.78	0.76
Availability of Instructional Materials	Low	138	3.67	0.79
	Middle	68	4.03	0.73
	High	92	3.91	1.19

Table 58: Availability of Instructional Materials Means Score and Students' Mean Academic Performance in TVE Courses in Different Institutions.

Name of Institution	Availability of Instructional material	Students' mean academic performance in TVE courses
COSMOPOLITAN	58.872	3.51
URBAN	64.480	4.03
SEMI URBAN	64.886	3.91
RURAL	59.625	3.78

Table 59: The Test of Significance of the Influence of Institutional Location and Availability of Instructional Materials on Students' Academic performance

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	12.642	8	1.580	2.216	.028
Intercept	2322.731	1	2322.731	3257.063	.000
NAMINSTA	7.287	3	3.643	5.109	.007
AVINMAC	.139	2	6.955E-02	.098	.907
NAMINSTA * AVINMAC	2.323	6	.581	.814	.517
Error	145.480	294	.713		
Total	3728.000	213			
Corrected Total	158.122	212			

Table 57 presents the descriptive data of students' performance in TVE courses in relation to the location of their institutions and availability of instructional materials. The table reveals that the students sampled performed generally well in TVE courses irrespective of the locations of their institutions and their administrators' managerial skills. For instance the lowest mean Grade Point Average (GPA) recorded, was from a College situated within the Cosmopolitan city. This lowest GPA was 3.51 out of a maximum obtainable GPA of 5.00. The mean GPA of the students in the other institutions seems to vary from one institution to the other. The students from Urban had the highest mean GPA of 4.03, Semi urban followed with 3.91 while Rural had 3.78. In terms of availability of instructional materials, table 58 shows that where the availability of instructional Materials is highest the mean GPA of students' academic performance in TVE courses is second.

Table 59 shows the calculated F-value of 5.109 resulting from the influence of institutional location on the mean GPA of students' academic performance in TVE courses. This is

significant, since the significant value (0.007) is less than the 0.05 level of significance with 3 and 294 degrees of freedom at 0.05 level of significance. The availability of instructional materials did not significantly affect students' performance in TVE courses as shown by the mean GPA of (F = 0.098, df = 3/294, and a significant value of 0.907). Hence from the finding of this study, only institutional location was found to have significant influence on students academic performance in TVE courses.

Similarly, a test of the interaction effects of students institutional location by availability of Instructional Materials (f = 0.814, df = 6/294, significant value = 0.517 at 0.05 level of significance) was not statistically significant at 0.05 level of significance. This is because the significant value (0.517) is more than the 0.05 level of significance.

Table 60 : Post HOC Analysis of Group Means of Academic Performance Based on Institutional Locations

(I) name of Institution attended	(J) name of Institution	Mean Difference (I – J)	Std. Error	Sig.	95% Confidence interval	
					Lower Bound	Upper Bound
COSMOPOLITAN	COE	-.52*	.17	.025	-.99	-4.56E-02
	OSCOED	-.40	.16	.094	-.85	4.28E-02
	TASCE	-.27	.16	.434	-.72	.19
URBAN	FCE (T) AKOKA	.52*	.17	.025	4.56E-02	.99
	OSCOED	.12	.15	.891	-.30	.53
	TASCE	.25	.15	.417	-.17	.67
SEMI URBAN	FCE (T) AKOKA	.40	.16	.094	-4.28E-02	.85
	COE	-.12	.15	.891	-.53	.30
	TASCE	.14	.14	.808	-.25	.53
RURAL	FCE (T) AKOKA	.27	.16	.434	-.19	.72
	COE	-.25	.15	.417	-.67	.17
	OSCOED	-.14	.14	.808	-.53	.25

The Post-hoc analysis was necessitated by the significant mean difference in students' academic performance across institutions at the 0.05 level of significance. The post hoc

analysis displayed in table 56 above using multiple comparisons revealed a significant mean difference at 0.05 alpha level between students' performances from Cosmopolitan and Urban Colleges. The students from Urban performed significantly better than their counterparts in Cosmopolitan city (as seen in the table, the * on – 0.52 implies significant performance).

Table 61: Differences in Students Perception of TVE Courses Due to Institutional Locations and Availability of Instructional Materials

Variable		N	Mean	Standard Deviation
Institution	COSMOPOLITAN	63	73.833	12.210
	URBAN	81	75.860	11.480
	SEMI URBAN	111	73.587	13.908
	RURAL	83	67.620	10.131
Availability of Instructional Materials	Low	152	70.198	11.421
	Middle	81	75.860	11.480
	High	111	73.588	13.908

Table 62: Comparison of the Availability of Instructional Materials and Students' Mean Perception of TVE Courses Indifferent Institutions

Name of Institution	Availability of Instructional material	Students' mean perception to TVE courses
COSMOPOLITAN	58.872	73.833
URBAN	64.480	75.860
SEMI URBAN	64.886	73.587
RURAL	59.625	67.625

Table 63: The Test of Significance of the Influence of Institutional Location And Availability of Instructional Materials on Students' Perception of TVE Courses

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	679.488 ^a	8	84.936	.559	.811
Intercept	939866.389	1	939866.389	6183.973	.000
NAMINSTA	159.341	3	79.671	.524	.593
AVINMAC	404.803	2	202.402	1.332	.266
NAMINSTA * AVINMAC	91.848	6	22.962	.151	.962
Error	37388.120	340	151.984		
Total	1337048.000	255			
Corrected Total	38067.608	254			

Table 62 shows the calculated mean of TVE students' perception to their courses across institutional locations and availability of instructional materials. From the analysis, the mean scores of students perception to TVE courses for students in Urban area is highest (75.860) and that of students in Rural (67.620) is lowest. Generally however, their mean perception of TVE courses is high since the lowest mean perception recorded is 67.620 out of a maximum of 100.

Similar results were obtained in respect of availability of instructional materials, they all had very high mean scores. The least which is from Cosmopolitan College is 58.872 while the highest which is from Semi Urban is 64.886. The difference in the mean perceptual scores however is not at all pronounced. The results show that the mean scores of students' perception of TVE courses is generally high but differs slightly due to the influence of institutional locations and Availability of Instructional Materials. To test if the above

differences in the attitude are statistically significant, univariate analysis of variance (ANOVA) was performed and the result is as follows:

The computed f-value for effects of institutional location ($f = 0.524$; $df = 3/340$; significant value at 0.05 alpha level = 0.593) shows that institutional location was not a factor in students perception of TVE courses.

The computation also indicates no significant effect of Availability of Instructional Materials ($f = 1.332$; $df = 3/340$; significant value at 0.05 level of significance = 0.266). Similarly, the interaction effect between institutional location and Availability of Instructional Materials ($f = 0.151$; $df = 6/340$; with a significant value of 0.05 level of significance was 0.962) was not statistically significant.

From the above findings, the following conclusions emerged:

- * The TVE students in the sampled Nigerian Colleges of Education showed a significant difference in academic performance in their courses due to differences in institutional locations ($F= 0.098$, $df = 3/394$, $p>0.05$)
- * The TVE students in Nigerian Colleges of Education in the study showed no significant difference in academic performance in their courses due to differences in Availability of Instructional Materials ($F= 0.814$, $df = 6/294$, $p>0.05$)
- * The TVE students in Nigerian Colleges of Education showed no significant difference in perception to TVE courses due to differences in their institutions' locations ($F= 1.332$, $df = 3/340$, $p>0.05$)

- * The TVE students in Nigerian Colleges of Education showed no significant difference in perception of TVE courses due to differences in Availability of Instructional Materials ($F= 0.151, df = 6/340(F= 0.378, df = 6/249, p>0.05), p>0.05)$)

Hypothesis Five (HO₅)

The Institutional Location and Infrastructural Facilities will not significantly impact on the Production of Qualitative Technical Teachers

To test this hypothesis, a 3 x 3 univariate analysis of variance (ANOVA) was performed. The independent factors were institutional location and infrastructural facilities while mean students academic performance in TVE courses and students' mean attitudinal scores in TVE courses was entered as a dependent variable at a time. The results are presented in tables 64 to 66 below.

Table 64: Differences in Academic Performance Due to Institutional Location and Infrastructural Facilities

Variable		N	Mean	Standard Deviation
Institution	COSMOPOLITAN	53	3.51	0.82
	URBAN	64	4.03	0.73
	SEMI URBAN	87	3.91	1.19
	RURAL	85	3.78	0.76
infrastructural facilities	Low	153	3.89	0.76
	Middle	53	3.51	0.82
	High	92	3.91	1.19

Table 65: Comparison of the Availability of Infrastructural Facilities and Students Performance in Different Institutions.

Name of Institution	Availability of Instructional material	Students' performance in TVE courses
COSMOPOLITAN	74.189	3.51
URBAN	72.087	4.03
SEMI URBAN	74.656	3.91
RURAL	70.147	3.78

Table 66: The test of significance of the Influence of Institutional Location and Availability of Infrastructural Facilities on Students' Academic Performance

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	14.992 ^a	8	1.874	2.858	.005
Intercept	2867.723	1	2867.723	4374.039	.000
NAMINSTA	9.144	3	4.572	6.973	.001
INFRAC	.141	2	7.026E-02	.107	.898
NAMINSTA * INFRAC	4.428	6	1.107	1.689	.154
Error	127.847	195	.656		
Total	3577.000	298			
Corrected Total	142.838	203			

As evident in table 64, the students perform generally well in TVE courses irrespective of their institutional location and infrastructural facilities. For instance, the lowest mean Grade Point Average (GPA) recorded, was from a Cosmopolitan College. This lowest GPA was 3.51 out of a maximum obtainable GPA of 5.00. The students from the other three colleges performed better. The best mean GPA in academic performance was that of Urban College of Education.

In terms of infrastructural facilities, table 61 showed that where the availability of infrastructural facilities is highest, the mean GPA of students' performance in TVE courses was second to the highest. The highest mean recorded is 4.03 and the lowest is 3.51. This shows a general excellent performance in TVE courses.

The computed f-value showed that a significant difference was observed due to institutional location ($f = 6.973$; $df = 3/298$; significant value at 0.05 level of significance = 0.001). The computed f-value showed that no significant difference was observed due to infrastructural facilities ($f = 0.107$; $df = 3/298$; significant value at 0.05 level of significance value = 0.898). A test of the interaction effect of institutional location and infrastructural facilities ($f = 1.689$; $df = 6/298$; significant value at 0.05 level of significance = 0.154) was not statistically significant at 0.05 alpha level.

To determine where significant differences exist between institutions based on their location, pair wise comparisons were performed using scheffe post hoc analysis and the results are summarized in table 67 below:

Table 67: Post hoc Analysis of Group Means for Mean GPA of Students' Academic Performance Using Scheffe

(I) name of Institution attended	(J) name of Institution attended	Mean Difference (I – J)	Std. Error	Sig.	95% Confidence interval	
					Lower Bound	Upper Bound
COSMOPOLITAN	Urban	-.52*	.17	.025	-.99	-4.56E-02
	Semi Urban	-.40	.16	.094	-.85	4.28E-02
	Rural	-.27	.16	.434	-.72	.19
URBAN	Cosmopolitan	.52*	.17	.025	4.56E-02	.99
	Semi Urban	.12	.15	.891	-.30	.53
	Rural	.25	.15	.417	-.17	.67
SEMI URBAN	Cosmopolitan	.40	.16	.094	-4.28E-02	.85
	Urban	-.12	.15	.891	-.53	.30
	Rural	.14	.14	.808	-.25	.53
RURAL	Cosmopolitan	.27	.16	.434	-.19	.72
	Urban	-.25	.15	.417	-.67	.17
	Semi Urban	-.14	.14	.808	-.53	.25

Post hoc analysis displayed in table 67 using Scheffe post hoc analysis revealed a significant mean difference at 0.05 alpha level for Cosmopolitan and Urban Colleges. Students of Urban performed significantly better than their counterparts in Cosmopolitan Colleges shown on table 67 to be – 0.52.

Table 68: Differences in Sampled Colleges of Education Students' Perception of TVE Courses Due to Institutional Location and Infrastructural Facilities

Variable		N	Mean	Standard Deviation
Institution	COSMOPOLITAN	63	73.833	12.210
	URBAN	76	75.860	11.480
	SEMI URBAN	105	73.588	13.908
	RURAL	89	67.625	10.131
infrastructural facilities	Low	102	71.549	11.526
	Middle	68	73.833	12.210
	High	74	73.588	13.908

Table 69: Institutional Location and Availability of Instructional Materials on Students' Academic Performance

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	697.287	8	87.161	.569	.803
Intercept	1095123.977	1	1095123.977	7144.704	.000
NAMINSTA	120.174	3	60.087	.392	.676
INFRAC	185.939	2	92.969	.607	.546
NAMINSTA * INFRAC	370.692	6	92.673	.605	.660
Error	36020.267	235	153.278		
Total	1279963.000	294			
Corrected Total	36717.553	243			

The result in table 68 showed the calculated mean scores of TVE students' perception of their courses due to their institutional location and Infrastructural Facilities. From the analysis, the mean scores of students' perception of TVE courses due to institutional location

is generally high. The students in the Urban College had the highest mean score (75.860) while those from rural College had the lowest mean score (67.625).

Similarly, results were obtained in respect of Infrastructural Facilities. The disposition (Perception) of the students in Colleges of Education in the study of TVE courses appears to be directly proportional to the available infrastructural facilities. The group categorized as low in Infrastructural Facilities had the lowest mean attitudinal score while the group categorized as high in Infrastructural Facilities had the highest mean attitudinal score.

To test if the above differences in College of Education students' perception of TVE courses are statistically significant, univariate analysis of variance (ANOVA) was performed and the result is as follows:

The computed f-value for effects of institutional location ($f = 0.392$; $df = 3/294$, significant value at $p = 0.05 = 0.676$) as shown in table 64 was not a factor in students' perception of TVE courses. The computation also indicates no significant effect of Infrastructural Facilities ($f = 0.607$; $df = 3/294$; significant value at 0.05 alpha level = 0.546).

Similarly, a test of the interaction effect of institutional location and Infrastructural Facilities ($f = 0.605$; $df = 6/294$; significant value at 0.05 level = 0.660) was equally not statistically significant. From the above findings, the following conclusions emerged:

- * The TVE students in Colleges of Education in the study showed a significant difference in academic performance in their courses due to differences in institutional locations ($F = 0.107$, $df = 3/298$, $p > 0.05$).
- * The TVE students in the sampled Colleges of Education showed no significant

difference in academic performance in their courses due to differences in the Infrastructural Facilities ($F= 1.689$, $df = 6/298$, $p>0.05$)

- * The TVE students in the study showed no significant difference in perception of TVE courses due to differences in their institutional locations ($F= 0.607$, $df = 6/294$, $p>0.05$)
- * The TVE students in the study showed no significant difference in perception of TVE courses due to differences in the Infrastructural Facilities ($F= 0.605$, $df = 6/294$, $p>0.05$).

Summary of Findings:

Research Question one examined the influence of lecturers' perception on quality technical teacher production as measured by the two instruments TVESCO for students and TCTQ for lecturers. The quality technical teacher output was determined by the students' performance in TVE courses and their perception of TVE courses. Pearson product moment correlation coefficients were calculated to determine the direction and magnitude of the relationship between the two variables (lecturers; perception and quality technical teacher production). Results indicated evidence of a weak relationship that is not significant between lecturers' perception and quality technical teacher output as seen in tables 16 and 17 for lecturers', perception and students' performance ($r=-0.028$, $p>0.05$). For teachers' perception and students' perception; $r=-0.042$ and $p>0.05$. Therefore lecturers' perception has a weak negative relationship (that is not significant) on quality technical teacher production.

Research Question two examined the relationship between lecturers' morale on quality Technical teacher production from selected South-West Nigeria Colleges of Education as measured by the two instruments TVESCO and TCTQ. Results of the Pearson product moment correlation showed that lecturers' morale has a weak negative relationship which is not significant with students' performance ($r=-0.35$, $p>0.05$). Also a very weak positive relationship which is also not significant was found between lecturers' morale and students' perception of TVE courses ($r=0.011$, $p>0.05$). Generally, the relationship between lecturers' morale and quality technical teacher production is weak.

Research Question three investigated the relationship between administrators' managerial skills and qualitative technical teacher production, as measured by TVESQ and TCTQ. Results showed a weak negative relationship that was not significant between administrators' managerial skills and students' performance in TVE courses ($r=0.015$, $p>0.05$). A weak negative relationship that was significant was found between administration managerial skills and students perception about TVE courses ($r=-0.236$, $p<0.01$). In all the relationships were weak.

Research Question four examined the influence of academic learning time on quality technical teacher production in selected Colleges of Education in South-West, Nigeria. Pearson product moment correlation results showed the association between academic learning time and students' performance in TVE courses to be weak, positive and non-significance at 0.01 level of significance ($r=0.229$, $p>0.01$). For academic learning time and

students' perception, a very weak positive relationship which is not significant at 0.01 level of significance was found ($r=-0.020$, $p>0.05$). Hence the influence of academic learning time on quality technical teacher production was positive but weak.

Research Question five also examined the influence of availability of modern machines and equipments on quality technical teacher production from South-West, Nigerian Colleges of Education. A weak positive correlation that was significant at 0.01 level of significance was found between availability of modern machines and equipment and students' performance in TVE courses ($r=0.160$, $p<0.01$). A weak positive relationship which however was not significant was found between availability of modern machines and equipment and students perception about TVE courses ($r=0.154$, $p>0.05$).

Research Question six investigated the influence of availability of infrastructural facilities on quality technical teacher production in South-West, Nigerian Colleges of Education. A weak positive correlation that was significant at 0.05 levels was found between availability of infrastructural facilities and students' performance ($r=0.014$, $p<0.05$). Also a very weak positive relationship which is significant was found between availability of infrastructural facilities and students' perception of TVE courses ($r=0.164$, $p<0.01$).

Research Question seven examined the influence of gender on quality technical teacher production from South-West Nigerian Colleges of education. A weak, positive correlation which was not significant at 0.05 level was found between students' gender and their

performance in TVE courses ($r=0.048$, $p>0.05$). Also a very weak negative association which was not significant was found between student's gender And their perception of TVE courses was found ($r=-0.094$, $p>0.05$).

The study further tested some hypotheses which were raised in chapter one. Hypothesis one tested the significance of the relationship between parental perception, lecturers' morale, lecturers' perception, administrators' managerial skills and gender with quality technical teacher production. The multiple regression coefficients between the factors and students performance was found to be 0.741. The multiple regression ANOVA produced a significant linear relationship (F ratio =64.656. $P<0.05$). Also the adjusted R-square value was 0.540; meaning that the variation in students' performance in TVE courses accounted for by the above stated input factors was 54.0%. On the relationship between the input factors and students' perception of TVE courses; the multiple regression coefficient R^2 revealing the linear relationship between the factors and student' perception of TVE courses is 0.294. The adjusted R-square equals 0.072, meaning that all input factors listed above taking together accounted for 7.2% variation in students' perception of TVE courses. The multiple Regression ANOVA produced a significant linear relationship between the factors and students' perception of TVE courses (F-ratio=6.001, $p<0.01$).

In hypotheses two, 3 x 3 univariate analyses of variance was used to test the significance of the differences between quality technical teacher production from South-Western Nigerian Colleges due to differences in institutional location and administrators' managerial skills.

The result showed a calculated F value of 6.639 which was found to be significant ($p < 0.05$). It was also found that the influence of administrators' managerial skill on students' performance in TVE courses is insignificant ($F = 0.937$, $df = 2/204$, $p > 0.05$). Therefore, of the two factors under consideration in the hypothesis (institutional location and administrators' managerial skills), only institutional location was found to have significant influence on students' academic performance in TVE courses. Similarly, the interaction effect between institutional location and administrators' managerial skills was not statistically significant at 0.05 level of significance ($F = 1.034$, $df = 6/294$, $p > 0.05$). Administrators' managerial skills was found to have a significant effect which was not significant on students' perception ($F = 0.005$, $df = 3/340$, $p > 0.05$). Similarly, a test of interaction effect between institutional location and administrators' managerial skills showed a non-significant effect ($F = 1.471$; $df = 6/340$, $p > 0.05$).

Hypothesis three tested the effect of academic learning time on quality technical teacher production. The computed F-value showed that no significant difference was observed due to academic learning time ($F = 9.222$; $df = 2/249$, $p > 0.05$). A test of interaction effect of academic learning time and institutional location also showed a difference which is not significant ($F = 0.378$, $df = 6/249$, $p > 0.05$). Institutional location was also found not to have significant influence on students' perception of TVE courses ($F = 0.547$; $df = 3/340$; $p > 0.05$). The influence of academic learning time on students' perception of TVE courses was also found not to be significant ($F = 1.538$; $df = 3/340$; $p > 0.05$). Similarly, a test of interaction

effect of institutional location by academic learning time was equally not statistically significant ($F=0.954$; $df=6/340$, $p>0.05$).

Hypothesis four tested the significance of the effect of availability of instructional materials on quality technical teacher production. The findings showed that availability of instructional materials did not significantly affect students' performance in TVE courses ($F=0.098$; $DF=^3/394$; $p>0.05$). Similarly, a test of interaction effects of institutional location by availability of instructional materials on students' performance was not statistically significant ($F=0.814$; $DF=^6/294$, $p>0.05$). The computed F-value also indicated no significant effect of availability of instructional materials on students' perception of TVE courses ($F=1.332$; $df = 3/340$; $p>0.05$). Similarly, the interaction effect of institutional location by availability of instructional materials on students' perception is not statistically significant ($F=0.151$; $df = 6/340$; $p>0.05$).

Hypothesis five tested the significance of the effect of availability of infrastructural facilities on quality technical teacher output. The computed F-value showed that no significant difference in students' academic performance was observed due to availability of infrastructural facilities ($F=0.107$, $df = 3/298$, $p>0.05$). A test of interaction effect of institutional location by availability of infrastructural facilities was found not to be statistically significant at 0.05 level ($F=1.689$; $df = 6/298$; $p>0.05$). On the significance of the effect on students' perception of TVE courses, the computation indicates no significant effect of infrastructural facilities ($F=0.607$; $df = 3/294$, $p>0.05$). Similarly, a test of

interaction effect of institutional location and infrastructural facilities was equally not statistically significant ($F=0.605$; $df = 6/294$; $p>0.05$).

In conclusion, the following major findings were obtained.

- Lecturers' perception has a weak negative relationship that is not significant with students' performance in TVE courses ($r = -0.028$, $p>0.05$).
- Lecturers' perception in the work place also has a weak negative relationship that is not significant on students' perception of TVE courses ($r=-0.042$, $p>0.05$).
- Lecturers' morale has a weak negative relationship that is statistically significant with students' performance in TVE courses($r= -0.135$, $p<0.05$).
- Lecturers' morale has a very weak positive relationship that is not significant to students' perception of TVE courses ($r= 0.052$, $p<0.05$).
- School Administrators' managerial skills has a weak negative relationship that is not significant with students' performance in TVE courses ($r= -0.015$, $p>0.05$).
- School Administrators' managerial skills has a weak negative relationship that is significant with students' attitude to TVE courses ($r= -0.236$, $p<0.05$).
- Academic learning time has a weak positive relationship (that is significant) with students' performance in TVE courses ($r= 0.120$, $p<0.05$).
- Academic learning time has a weak negative relationship (that is not significant) with students' perception of TVE courses ($r= -0.020$, $p>0.05$).
- Parental perception of TVE has a weak negative relationship (which is not significant) with students' performance in TVE courses ($r= -0.087$, $p>0.05$).
- Parental perception of TVE courses has a weak positive relationship (which is significant) with students' perception of TVE courses ($r= 0.118$, $p<0.05$).
- Availability of modern machines and equipment has a weak positive relationship (which is significant) on students performance in TVE courses ($r= 0.160$, $p<0.05$).
- Availability of modern machines has a weak positive relationship (which is significant) with students' perception of TVE courses ($r= 0.154$, $p<0.05$).

- Availability of infrastructural facilities has a weak positive relationship (which is not significant) with students' performance in TVE courses ($r=0.014$, $p>0.05$).
- Availability of infrastructural facilities has a weak positive relationship (which is significant) with students' perception of TVE courses ($r= 0.184$, $p<0.05$).
- Students' gender has a weak positive relationship (which is not significant) with students performance in TVE courses ($r= 0.048$, $p>0.05$).
- Students' gender has a weak negative relationship (which is not significant) with students' perception of TVE courses ($r= 0.048$, $p>0.05$).
- The TVE students showed a significant difference in performance in their courses due to differences in institutions.
- The TVE students in the Nigeria Colleges of Education studied showed no significant difference in performance due to differences in their administrator's managerial skills.
- The TVE students in Nigeria Colleges of Education showed no significant differences in performance due to the academic learning time.
- The TVE students in Nigerian Colleges of Education showed no significant differences in perception of TVE courses due to differences in academic learning time.
- The TVE students in Nigerian Colleges of Education in the study showed no significant difference in performance in their courses due to differences in availability of instructional materials.
- The TVE students in the sampled Colleges of Education showed no significant difference in performance in their courses due to differences in the infrastructural facilities.

CHAPTER FIVE

DISCUSSION OF FINDINGS, IMPLICATIONS, CONCLUSION AND RECOMMENDATIONS.

Introduction

This study investigated the major factors influencing production of qualitative technical teachers in Colleges of Education in southwestern, Nigeria. Its ultimate aim is to help identify a series of practical, affordable suggestions on how to produce qualitative technical teachers from our Colleges of Education.

It also tested the significance of the influence of location of institutions, administrators' managerial skills, availability of instructional materials and infrastructural facilities on quality technical teacher production in Colleges of Education in South-West Nigeria.

Discussion of Findings

Eight (7) research questions and five (5) research hypotheses have been generated as presented in chapter one. The results of the analyses done using relevant statistical tools with the aid of statistical package for social sciences (SPSS) were as presented in the proceeding section. This section of the study, presents the discussion of the findings.

Teachers' Perception and Technical Teacher Production in Colleges of Education.

Tables 12 and 13 show that lecturers' perception in the workplace influenced neither students' performance in TVE, nor their perception of TVE positively. Students' performance in TVE and perception of TVE are what quality technical teacher production is comprised of in this study. Therefore, teachers' perception has a weak negative influence that is not significant on

quality technical teacher production. Since significant correlation indicates a reliable relationship. The non significance in relationship in the results presented in the two tables suggests that this finding may not be reliable (Cronk, 2004). In essence, that teachers' perception is not found to influence quality technical teacher production may not be applicable to other Colleges in other geopolitical zones in the country.

This finding is consistent with the findings of South well et al (2006), Amarto & Watson (2003), Chuch (2002) and Morris (2001) which shows a low mathematical score despite a more positive attitude to mathematics. It however contradicts the findings by Reyndos and Walbery (1992) who found a causal influence of performance upon perception. Stephen & Sandra (2006) and Iroegbu (2006) also found that perception potentially influenced the learning outcomes of children. They had the view that perception could be used to change the level of cognitive, affective and psychomotor output of learners. This research finding from the colleges of education in the south western part of Nigeria could also be because of other factors influencing students' performance in and perception of TVE in the south west that are stronger on students in the south west than the influence of their lecturers' perception. This may not be the case in the other geopolitical zones. For instance, the enlightenment on Technical Vocational Education (because of earlier exposure to western education) and the drive for personal development might be responsible for the high perceptual score among the students. Besides, the quota system prevalent in the civil service and the fact that myriads of graduates from the south west had to compete for few vacancies in the civil service is compelling many of the trainees to have positive attitude towards TVE courses which could enable them establish something on their own after graduation. The challenge of having to compete for few vacancies in government employment due to the few vacancies available for

millions of graduates from the southwest must have endeared the trainees to TVE courses. Hence the positive attitude and high performance inspite of the lower perception of their lecturers to their work.

Lecturers' Morale and Qualitative Technical Teacher Production.

Teachers' morale was found to have a weak negative relationship which is significant with the students' performance. The finding disagrees with the finding of Bryle and Driscoll (1998) who found that schools where teacher's morale are higher, there is a lower rate of student problem behaviour and dropout. Nervmann, Ruther and Smith (1989) also found teachers' sense of efficacy in teaching, their sense of community within the school and their expectations for success in advancing learning among their students are related to orderliness of student behaviour, support for innovation, administrative responsiveness as well as task-interdependence. The implication of the finding of this study is that certain schools where teachers' morale is higher, students' performance is comparatively low. The negative relationship is however weak ($r = -0.135$). The school with the highest teachers' morale and lowest students' performance is the Metropolitan College. This must have been responsible for this trend. The distractions in the city such as business transactions, dual studentship, other trainings available, the stress of moving from one area to another as well as the high cost of living and the efforts at making too ends meet must have taken their tolls on the performance of students in the TVE courses. It is not surprising therefore that inspite of high teachers' morale, the students' performance in the TVE courses in the school was comparatively low. The weak negative relationship between teachers' morale and students' performance is found to be significant. This shows that the weak relationship is reliable, meaning that this weak

relationship is applicable to the entire population of the study. In other words, we can infer that this weak negative relationship between teachers' morale and students' performance is applicable in all colleges of education in Nigeria.

A very weak positive relationship which is not significant was found ($r = 0.011, p > 0.05$) between teacher morale and students' perception to TVE courses. The implication of this finding is that the influence of teachers' morale on students' perception towards TVE courses is not at all a serious issue. This may be because some of the students are of age, they had made up their minds for or against the profession and would not be easily influenced. Some had also tried the University Matriculation Examination and other means of entry into tertiary institutions without succeeding. They had enough tutoring from experience and could no longer be influenced by their teachers' morale. Besides, other factors like finance, family responsibilities (for those married) could be having greater influence on them than the teachers' morale.

Administrators' Managerial skills and Qualitative Technical Teacher Production in Colleges.

A weak negative correlation that was not significant was found ($r = - 0.015, p > 0.05$) between administrators' managerial skills and performance in TVE courses. Therefore, the managerial skill of administrators in the colleges has a weak negative relationship which is not significant at 0.05 level of significance with students' performance. Hence, certain colleges where the managerial skills of administrators were high, students' performance in TVE courses were found to be relatively low. The finding of this study contradicts the finding of Owings, Kaplan & Nunnery's (2005) where principals with the higher ratings had higher levels of students

performance in their schools. Glanz et al., (2007) also found out that Principals who practice and build skills in leadership for teaching and learning can positively impact on their schools' learning and student's performance.

The rating of administrator skills put the Rural on top; students' performance in TVE courses from Urban was also the best. Comparing Cosmopolitan with Semi- Urban, the administrators were rated higher in Cosmopolitan while students' performance was better in Semi Urban. Again, the various factors associated with the city life must have exerted a greater influence on the students. In the city, because of the high cost of living, distractions of business, dual studentship and other trainings in town that are available to students, many so called full time students are not always on ground to learn. This is bound to affect their performance. This must have been responsible for the weak positive influence of administrators' managerial skills on students' performance in TVE courses in the Colleges of education. The influence according to this finding is not significant at 0.05 level of significance. This shows that the weak positive relationship may not be noticed in other colleges outside the south west.

A Pearson Product Moment Correlation (PPMC) coefficient was calculated for the relationship between Administrators Managerial Skill and Students' perception to TVE Courses. A weak negative correlation that was significant at 0.01 level was found ($r = - 0.236$, $p < 0.01$)

Academic Learning Time and Qualitative Technical Teacher Production in Colleges of Education.

A Pearson Product Moment Correlation (PPMC) coefficient was calculated for the relationship between students' performance in TVE courses and academic learning time in the

Colleges of education. A weak positive correlation that was significant at 0.01 level was found ($r = 0.229, p < 0.01$). Therefore, the academic learning time had a weak positive relationship with students' academic performance in TVE courses. The findings of this study is in agreement with Chickering and Gamson (1997) who opined that sufficient time should be allocated to the task in order to carryout an effective learning. Posser (1994) also theorized that vocational training will be effective in proportion as the specific training experience for forming right habits of doing and thinking are repeated to the point that the habit developed are those of the finished skills necessary for gainful development. Even though the influence found in this study is not high, this finding showed that academic learning time influences students' academic performance in TVE courses. If more time is given to learn the courses, students' performance will be better. The relationship is significant. Hence it is reliable. It can be inferred that this positive weak influence of Academic Learning time on students' Academic performance in TVE courses exists in all the Colleges of Education in Nigeria.

A Pearson Product Moment Correlation (PPMC) coefficient was calculated for the relationship between Academic Learning Time and Students' perception of TVE courses. A very weak positive relationship which is not significant was found ($r = -0.020, p > 0.05$). The implication of this finding is that the influence of Academic learning time on students' perception of TVE course is positive but very weak.

In conclusion, the Academic Learning time is seen to have stronger influence on students' academic performance in TVE courses which is the cognitive aspect of the learning outcome than it does on the students perception of TVE courses which is the affective aspect of the learning outcome.

Availability of modern Machines and Equipment on Qualitative Technical Teacher Production in Colleges of Education.

A Pearson Product Moment Correlation (PPMC) coefficient was calculated for the relationship between students' performance in TVE courses and availability of modern machines in the Colleges of education. A weak positive correlation that was significant at 0.01 level was found ($r = 0.160$, $p < 0.01$). Therefore, the availability of modern machines in the colleges had a weak positive relationship with students' performance in TVE courses. Even though the influence is not high, this finding showed that availability of modern machine affects students' performance in TVE courses. The relationship is also significant, therefore it can be inferred that the influence will cut across all the Colleges of Education. Therefore, generally, in all the Colleges, the more modern machines and equipments there are for instructions, the better the performance of students in TVE courses in colleges of education in Nigeria.

A Pearson Product Moment Correlation (PPMC) coefficient was calculated for the relationship between availability of modern machines and equipments and students perception of TVE courses. A very weak positive relationship which is not significant was found ($r = 0.154$, $p < 0.05$). This finding showed that the influence of availability of modern machines and equipments on students' perception of TVE courses is quite minimal. The influence exists but it is not pronounced. The weak relationship is found to be significant. This implies that the findings in Colleges of education in other Geopolitical zones in Nigeria will be the same with the findings in the South West.

In conclusion, the influence of modern machines and equipments on students' academic performance is positive, weak and significant. The influence of availability of modern machines and equipments on students' perception of TVE courses is weak and statistically insignificant. The implication is that the findings on the influence of modern machines and equipment on students' performance in TVE courses as well as students' perception of TVE course is applicable to the entire TVE students in all Colleges of Education in Nigeria.

Influence of Availability of Infrastructural Facilities and Qualitative Technical Teacher Production in Education.

A Pearson Product Moment Correlation (PPMC) coefficient was calculated for the relationship between students' academic performance in TVE courses and availability of infrastructural facilities in Colleges of Education. A weak positive correlation that was significant at 0.05 level was found ($r = 0.014$, $p < 0.05$). Therefore the availability of infrastructural facilities had a weak positive relationship with students' academic performance in TVE courses. The finding in this study showed that availability of infrastructural facilities had a weak influence on students' academic performance. The more the infrastructural facilities available, the better the academic performance of students in TVE courses. The significant relationship implies that the influence is reliable.

A Pearson Product moment Correlation (PPMC) coefficient was calculated for the relationship between availability of infrastructural facilities and students' perception of TVE courses. A very weak positive relationship which is significant was found ($r = 0.164$, $p > 0.01$). The implication of this finding is that the influence of availability of infrastructural facilities in Colleges on students' perception of TVE courses is positive but very weak.

Gender (Student) on Qualitative Technical Teacher Production in Colleges.

The computed Pearson Product Moment correlation (PPMC) coefficient between College of Education students' gender and performance showed a weak positive relationship. Since the male variable was coded 1 while the female variable was coded 2, this suggests that female students' performance in TVE courses was slightly higher than that of their male counterparts. This association however is based on the sampled students and cannot be generalized to the entire population since it is not significant. The computed Pearson Products Moment Correlation (PPMC) coefficient showed a weak negative association between gender and students' perception of TVE courses. With the male variable coded as 1 and female variable coded as 2; the negative correlation implies that the male students are more positively disposed to TVE courses than their female counterparts.

In summary, in relating students gender with performance and perception, a weak relationship was found in both cases. Male students were however found to be slightly better in perception when compared with their female counterparts while female fared better in performance when compared with their male counterpart. In both cases however the association was found to be weak. Therefore, gender has a very weak association with Quality Technical Teacher Production which is not significant.

Significance of Administrators' managerial skills, parental perception, teachers' morale and infrastructural facilities on qualitative teacher production.

Administrators managerial skills was found in this study to have contributed most to the production of qualitative technical teacher production. It's contribution to both performance and perception of students are both seen to be significant. Parents' perception was also noticed to have a significant contribution to both students' performance and students' perception. The influence of administrators' managerial skills is however negative but significant. The implication of the finding is that high score in administrators managerial skill means lower score in both performance and perception. The negative influence is however high and reliable.

Differences Between Qualitative Technical Teacher Production by institutions and Administrators' Managerial skills.

The students in this study, performed generally well in TVE courses irrespective of their institutions and their administrators' managerial skills. For instance the lowest mean Grade Point Average (GPA) recorded, was from the Metropolitan College. This lowest GPA was 3.51 out of a maximum obtainable GPA of 5.00. However the mean GPA of the students in the various institutions seems to vary from one institution to the other. The students from Urban College had the highest mean GPA of 4.03, Semi-urban College followed with 3.91 while the Cosmopolitan College followed with 3.759.

In term of administrators managerial skills, table 20 shows the administrators managerial skills of the Urban College is highest while the mean GPA of students academic performance in TVE courses is highest. For the Cosmopolitan College, the administrators' managerial skill

is slightly higher but the mean GPA of students academic performance is the lowest of all the four colleges sampled. The rural College had the highest score in administrations managerial skill but came behind Urban and Semi-urban in the mean GPA of students academic performance in TVE courses.

Table 34 shows the calculated f-value of 6.639 resulting in the influence of institutional location on the mean GPA of students' academic performance in TVE courses. This is significant, since the level of significant value (0.002) is less than the 0.05 level of significance given 3 and 294 degrees of freedom at 0.05. It was also found that the influence of administrators' managerial skill on students' performance in TVE courses as shown by the mean GPA is insignificant ($f = 0.937$, $df 2/204$, significant value = 0.393). These findings indicate that of the two factors (institutional location and administrators managerial skills) under consideration here, only institutional location was found to have significant influence on students' academic performance in TVE courses. This finding is not consistent with the finding of Glanz, Shulurikan and Sullivan (2007) who found that schools with effective supervision model has significant increases in student performance because a culture of teacher empowerment and collaboration is established. Willhard (2003) also in a study on "The relationship between principal Response to Adversity and Students' performance" emphasized the importance of the principal in influencing student performance.

Their mean attitude of TVE courses is high and commendable as the lowest mean attitude recorded is found to be higher than 65 out of a maximum obtainable mark of 100.

Similar results were obtained in respect of administrators managerial skills; they all had very high mean attitudinal scores. The least which is from those with high administrators' managerial skills is 67.625 while the highest which is 75.860. The difference in the mean

attitudinal scores however is not at all pronounced. The results show that the mean attitudinal scores of students perception to TVE courses is generally high but differ slightly due to the influence of institutional location and administrators managerial skills.

Differences Between Quality Technical Teacher Production by Institutions and Learning Time

The students perform generally well in TVE courses irrespective of their institutional location and academic Learning time. For instance, the lowest mean Grade Point Average (GPA) recorded, was from Cosmopolitan located in the heart of the urban city of Lagos. This lowest GPA was 3.759 out of a maximum obtainable GPA of 5.00. The students from the other two colleges performed better. The best mean GPA in academic performance came from the Urban College.

In terms of academic learning time, there was no correlation between academic learning time and students' mean GPA. Semi Urban came first in academic learning time but second in the students mean GPA. Cosmopolitan was however the least both in academic learning time and mean GPA of students academic performance. The mean scores of students' perception of TVE courses due to institutional location is generally high. The students in Cosmopolitan College had the highest mean score (72.787) while those from Urban had the lowest mean score (70.241).

Similarly results were obtained in respect of academic learning time. The disposition (attitude) of the students in the study to TVE courses appears not to be directly proportional to the time

available to them to learn those courses. Cosmopolitan College had the lowest mean academic learning time and came third in the students' perception to TVE courses.

Differences Between Quality Teacher Production and Availability of Instructional Materials

The students sampled performed generally well in TVE courses irrespective of their institutions and their administrators' managerial skills. For instance the lowest mean Grade Point Average (GPA) recorded, was from Cosmopolitan College. This lowest GPA was 3.51 out of a maximum obtainable GPA of 5.00. However the mean GPA of the students in the various institutions seems to vary from one institution to the other. The students from the College in urban area had the highest mean GPA of 4.03, Semi Urban followed with 3.91 while Rural had 3.78. In terms of Availability of Instructional Materials, where the Availability of Instructional Materials is highest the mean GPA of students' academic performance in TVE courses is second.

The post hoc analysis displayed in table 49 using multiple comparisons revealed a significant mean difference at 0.05 alpha levels between students' performances from Cosmopolitan and Urban. The students from Urban performed significantly better than their counterparts in Cosmopolitan (as seen in the table, the * on - 0.52 implies significant performance). The mean scores of students' perception of TVE courses for students in Urban are highest (75.860) and that of students in Rural (67.625) is lowest. Generally however, their mean attitude to TVE courses is high since the lowest mean attitude recorded is 67.625 out of a maximum of 100.

Similar results were obtained in respect of Availability of Instructional Materials; they all had very high mean attitudinal scores. The least which is from Cosmopolitan area is 58.872 while the highest which is from Semi -urban is 64.886. The difference in the mean attitudinal scores however is not at all pronounced. The results show that the mean attitudinal scores of students' attitude to TVE courses are generally high but differ slightly due to the influence of institutional locations and availability of Instructional Materials.

Differences Between Quality Technical Teacher Production, Institutional Location and Availability of Infrastructural Facility

The students performed generally well in TVE courses irrespective of their institutional location and infrastructural facilities. For instance, the lowest mean Grade Point Average (GPA) recorded, was from Cosmopolitan area. This lowest GPA was 3.51 out of a maximum obtainable GPA of 5.00. The students from the other three Colleges performed better. The best mean GPA in academic performance was that of the College in the urban area.

In terms of infrastructural facilities, table 60 showed that where the availability of infrastructural facilities is highest, the mean GPA of students' performance in TVE courses was second to the highest. The highest mean recorded is 4.03 and the lowest is 3.51. This shows a general excellent performance in TVE courses.

The mean scores of students' perception to TVE courses due to institutional location is generally high. The students in Urban had the highest mean score (75.860) while those from Semi Urban had the lowest mean score (67.625).

The disposition (attitude) of the students in Colleges of Education to TVE courses in the study appears to be directly proportional to the available infrastructural facilities. The group

categorized as low in Infrastructural Facilities had the lowest mean attitudinal score while the group categorized as high in Infrastructural Facilities had the highest mean attitudinal score.

Implications of the findings for Technical and Vocational Education.

- The findings in this study have shown to a large extent that Lecturers' perception of TVE courses generally has a weak negative relationship with quality Technical Teachers production. That is, positive perception of lecturers in the workplace resulted in slightly lower quality technical teacher production.
- The relationship between lecturers' morale and quality technical teacher production is also weak. This finding have significant implications in determining other school input variables capable of affecting positively the quality of technical teachers from the Nigerian Colleges of Education.
- The weak relationship observed between lecturers' perception and morale and quality technical teacher production implies that there are other stronger school input variables that should be considered in the bid to raise the quality of technical teachers turned out of the Nigerian Colleges of Education. Variables like institutional location, age of students, perception of students themselves as well as encouragements of students by way of awards of scholarship and bursary should also be considered.
- The weak negative relationship between lecturers' perception and quality technical teacher production suggests the need for a balanced approach in discerning the school input variables that could enhance quality technical teacher production. As the teachers are encouraged to put in their best, students should also be encouraged. Moreover, the

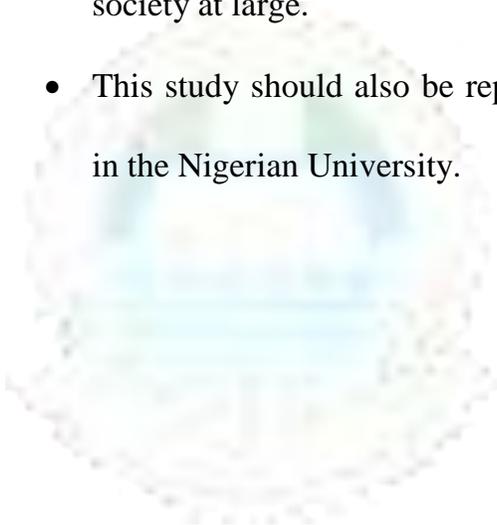
enrolment in technical and vocational course is about the lowest when compared with other courses offered in those colleges.

- The school administrators' managerial skills are also seen in this study to have a weak negative relationship with quality technical teacher production. The result is similar to that of lecturers' perception and morale and quality technical teacher production. The implication of this finding is that, if students are not properly motivated, school administrators skills would not be able to impact positively on quality technical teachers graduating from the Nigerian Colleges of Education again, there is the need for a balanced approach (which must of necessity touch both the administrators and students) in deciding on which school input variables is capable of enhancing quality technical teacher production from the Nigerian Colleges. Scholarship and bursary awards, good hostel and classroom environment as well as proper citing of the school (to encourage concentration on the parts of the students) should be given serious considerations.
- Academic learning time, parental perception, availability of modern machines, availability of infrastructural facilities as well as students' gender according to this study all have weak relationship with quality technical teacher production. The implication of this is the need to lay more emphasis in further researches on investigating the relationship between other school input variables that are student centered and quality technical teacher production.

Suggestion for Further Research

- Future researches should be conducted to investigate the relationship between the lecturers' perception and morale and students' learning outcomes. Perhaps, there will be the need to replicate this work in other parts of the country where culture, religious view as well as general view about life differs from what obtains in the South Western Nigerian. Specially, there will be the need to replicate this study in the Northern part of Nigeria where the few that are ready to go to school, especially the females are given every necessary encouragement.
- There is a need to consider how school input variables / factors that are student centred (such as scholarship/bursary awards, good hostel accommodation, conducive learning environment etc) influence students' learning in and perception of TVE courses. This will help to support or oppose the suggestions offered as a result of the findings of this study.
- There will be the need for a longitudinal research to investigate how students' perception of TVE courses develop overtime and what factors are most critical to enhancing students' perception of TVE courses at various stages of their career.
- It will be necessary to conduct experimental studies to determine the best instructional approaches capable of improving students' performance in TVE courses and their perception of TVE courses.
- There will also be the need to go in-depth in determining those school input variables capable of enhancing students' learning outcomes and the best approaches in applying them. This could be done through the use of classroom observational techniques, focus group discussion or a combination of both.

- It is not enough to look at how modern machines and infrastructural facilities influence quality technical teacher production; research should go beyond this. There will be the need to investigate the types of modern machines available, how adequate they are compared to the population of students and how competent the lecturers are in using those machines.
- There will also be a need for an impact evaluation of the quality of the products and their performance in their different professions; years after graduation. This will enable us to ascertain the type and level of impact on the immediate as well as the Nigerian society at large.
- This study should also be replicated using the vocational technical education students in the Nigerian University.



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Conclusion

The influence of school input variables on the production of qualitative technical teachers in colleges of education in southwestern Nigeria has been investigated.

In conclusion the school input variables (lecturers' perceptions, Lecturers' morale, school administrators' managerial skills, academic learning time, parental perception, availability of modern machines, availability of infrastructural facilities and gender) studied had a weak relationship with qualitative technical teacher production. The relationships between each of lecturers' morale, academic learning time and availability of modern machines with students' academic performance in TVE courses were found to be significant. It however established that the relationships between each of School Administrators' managerial skills, parental perception, availability of modern machines and availability of infrastructural facilities with students' perception of TVE courses were also found to be significant. Thus, improved lecturers' morale, more academic learning time and availability of modern equipment will enhance students' academic performance in TVET courses.

The relationships between each of school administrators' managerial skills, parental perception, availability of modern machines and infrastructural facilities improved students' perception of TVE courses.

The study also concluded that Institutional location affect qualitative technical teacher production in Colleges of Education in Southwestern Nigeria. Therefore, it can be inferred that improved lecturers' perception and morale, administrative skills, parents' perception and

morale, availability of modern machines and infrastructural facilities will enhance qualitative technical teacher production in Colleges of Education in Southwestern Nigeria.

Recommendations

Based on the finding of this study, the following recommendations are made.

- Lecturers' perceptions do not seem to relate positively with students' performance in and perception to TVE courses especially in the southwest Nigeria. Therefore other seemingly strong factors such as students' commitment to study, financial stress etc; capable of causing distractions should be given serious attention in addition to ensuring positive attitudes on the parts of teachers.
- The findings of this study appear to demonstrate the fact that increase in lecturers' morale may not cause a noticeable improvement in student's performance and perception. Rather than concentrating on just boosting lecturer's morale alone, there is the need to focus more on the students in policy making. The findings from the study have shown that school administrators' skills do not seem to relate positively with students performance in and perception of TVE courses. It is therefore recommended that school Administrators in their supervisory roles should give priority to teaching and learning activities in the colleges.
- Parental perception has been seen to impact negatively on performance and positively on perception. To produce quality technical teachers, a high positive parental perception will not suffice; we need to ensure that people are selected to pursue courses they have potentials for; rather than allow pressures from their parents to prevail on them.

- Academic learning time is seen to have a weak positive relationship and a weak negative relationship with performance and perception respectively. There is therefore the need to improve on the quality of instruction time in order to improve on students' performance in TVET courses. The criteria for appointing lecturers to teach TVE courses should include not only a certificate in education but also a demonstration of competence in the teaching of the courses. To improve on the perception of students of TVE courses, there is the need to employ the services of technicians who have several years of practical experience to complement the efforts of the lecturers. In essence, the added hours of contact should not be given to lecturing but laboratory and practical work to be supervised by these technicians and practitioners of many years' experience. Recently, one of the universities in the southwest, appointed a musician with about four (4) decades of experience in Juju music to lecture music. In the same vein, people that are competent and have long years of practical experience should be involved in TVE courses in college of Education.
- Availability of modern machines and equipment was also seen to have a weak positive relationship with both performance in and perception of TVE courses. Normally, availability of modern equipment is supposed to have greater influence on performance and perception. That the finding showed otherwise means that these machines are probably not used for instruction. Somebody says "teachers teach the way they are taught and not the way they are told to teach." To produce quality technical teachers who will not only use the modern equipment to teach, they must be properly taught with the equipment while in school.

- Human resources and other factors needed for effective utilization of these machines in instruction should be made available. Because of the peculiarity of TVE courses especially the high percentage of practical applications needed, the lecturer/student ratio used to determine how many lecturers and instructors to be employed for a given population of students should be disregarded. More hands will be needed for TVE courses than other disciplines.
- The availability of infrastructural facilities does not seem to have appreciable impact on performance and perception. Beyond ensuring adequate facilities, there is the need to ensure confident and competent human resources; instructional facilities and electricity should be in place. There is the need to make TVE classes exciting and interesting to students.
- Since students' gender has a weak association with performance and perception, both genders need to be given attention in the instruction of TVE courses in order to improve quality technical teacher production in Nigeria. All possible strategies should be applied to encourage and boost students' morale to study and promote technical courses. Both genders should also be encouraged to enroll in the TVE courses.

Contributions to Knowledge

1. The candidate developed a model for improving technical and vocational education.
2. The candidate generated base-line data that can be used by educational planners.
3. The candidate provided a lot of experiential illustrations of the organizational behaviour of administrative and academic staff of the colleges of education.



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Appendix A

Table 1: Credits to Be Earned for Graduation

	100L	200L	300L
Automobile Technology	4	4	5*
Building Technology	4	4	5*
Electrical/Electronics Technology	4	4	5*
Metalwork Technology	4	4	5*
Woodwork Technology	4	4	5*
Workshop Management	-	-	1
Technical Drawing	4	4	2
Introduction to Vocational Education	1	-	-
Entrepreneurship Education	-	2	2
Applied Mechanics	2	-	-
Fluids	1	-	-
Heat Engines	-	1	-
Mathematics	2	-	-
Physics	2	-	-
Chemistry	-	2	-
Special methodology	-	2	-
SIWES	-	2	-
Project	-	-	2
TOTAL	32*	33*	14

Source: National Commission Colleges of Education Minimum Standard (2002)

APPENDIX B

Table 2: Grade Point, Grade Point Average And Cumulative Grade Point Average:

Credit units	Percentage scores	Letter grades	Grade points average	Grade points Average (GPA)	Cumulative Grade point Average (CGPA)V	Level of pass in subjects
1	11	III	(GP)IV	(GPA)	Average	VI
Vary according to contact hours assigned to each course per week per semester and according to work load earned by student.	70-100	A	5	Derived by multiplying 1&IV and dividing by total credit units.	4.50-5.00	Distinction
	60-69	B	4		3.50-4.49	Credit
	50-59	C	3		2.40-3.49	Merit
	45-49	D	2		1.50-2.39	Pass
	40-44	E	1		1.00-1.49	Low pass
	0-39	F	0		0 - 0.99	Fail

Source: National Commission Colleges of Education Minimum Standard (2002)

APPENDIX C

Table 3: Enrolment of Students by Subject and Sex in Colleges of Education in Nigeria from 1999/2000 – 2004/2005 Academic Session

SESSION/ COURSE	SEX	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005
TECHNICAL EDUCATION	M	2347 (1.71)	2931 (1.93)	2959 (0.91)	3466 (1.12)	3772 (0.96)	3334 (0.93)
	F	456 (0.33)	1472 (0.97)	613 (0.19)	166 (0.05)	497 (0.13)	466 (0.13)
	T	2803 (2.04)	4403 (2.89)	3572 (1.10)	3632 (1.18)	4269 (1.08)	3800 (0.56)
VOCATIONAL EDUCATION	M	6817 (4.95)	7931 (5.21)	11817 (3.65)	8773 (2.85)	11851 (3.00)	10071 (2.80)
	F	8013 (5.82)	8415 (5.53)	7753 (2.40)	10847 (3.52)	13676 (3.46)	12665 (3.52)
	T	14830 (10.78)	16346 (10.74)	19570 (6.05)	19620 (6.37)	25527 (6.46)	22286 (6.19)
TECHNICAL VOCATIONAL EDUCATION	M	9164 (6.66)	10862 (7.14)	14776 (4.57)	12239 (3.97)	15623 (3.96)	13405 (3.73)
	F	8469 (6.15)	9887 (6.50)	8366 (2.58)	11013 (3.57)	14173 (3.59)	19198 (5.34)
	T	17633 (12.81)	20749 (13.64)	23142 (7.15)	23252 (7.54)	29796 (7.54)	32603 (9.06)
SCIENCE EDUCATION	M	7722 (5.61)	8015 (5.27)	18090 (5.59)	20163 (6.54)	25014 (6.33)	22894 (6.36)
	F	8178 (5.94)	8620 (5.67)	18354 (5.67)	19713 (6.40)	26405 (6.69)	24392 (6.78)
	T	15900 (11.55)	16635 (10.93)	36444 (11.26)	39876 (12.94)	51419 (13.02)	47286 (13.14)
OTHER COURSES	M	47381 (34.43)	56198 (36.94)	120970 (37.38)	118827 (38.55)	146081 (36.99)	137624 (38.25)
	F	56719 (41.20)	58565 (38.49)	143095 (44.21)	126259 (40.97)	167656 (42.45)	142310 (39.55)
	T	104100 (75.63)	114763 (75.43)	264065 (81.59)	245086 (79.52)	313737 (79.44)	279934 (77.80)
GRAND TOTAL	M	64267 (46.69)	75075 (49.34)	153836 (47.53)	151229 (49.07)	186718 (47.28)	173923 (48.34)
	F	73366 (53.31)	77072 (50.66)	169815 (52.47)	156985 (50.93)	208234 (52.72)	185900 (51.66)
	T	137,633 (100)	152,147 (100)	323,651 (100)	308,214 (100)	394,952 (100)	359,823 (100)

Figures in parentheses are in percentage (%)

Source: Statistical Digest on Colleges of Education in Nigeria

APPENDIX D

Table 4: Summary of Graduates from by Subject and Sex in Sixty-Five Colleges of Education in Nigeria from 2001/2002 – 2004/2005 Academic Session

SESSION/ COURSE	SEX	2001/2002	2002/2003	2003/2004	2004/2005
TECHNICAL EDUCATION	M	523 (1.92)	825 (1.69)	772 (1.05)	598 (0.84)
	F	114 (0.42)	191 (0.39)	168 (0.23)	368 (0.52)
	T	637 (2.34)	917 (1.88)	940 (1.28)	966 (1.35)
VOCATIONAL EDUCATION	M	1095 (4.03)	1522 (3.13)	2408 (3.28)	2093 (2.93)
	F	1414 (5.20)	2174 (4.47)	3030 (4.12)	2990 (4.19)
	T	2508 (9.22)	3696 (7.59)	3438 (4.68)	5083 (7.12)
TECHNICAL VOCATIONAL EDUCATION	M	1618 (5.95)	2347 (4.83)	3180 (4.33)	2691 (3.77)
	F	1527 (5.62)	2365 (4.86)	3198 (4.35)	3358 (4.70)
	T	3145 (11.56)	4712 (9.68)	6378 (8.68)	6049 (8.47)
SCIENCE EDUCATION	M	1439 (5.29)	2990 (6.14)	5270 (7.17)	5459 (7.34)
	F	1994 (7.33)	2941 (6.04)	4853 (6.04)	6505 (9.11)
	T	3433 (12.63)	5931 (12.18)	10123 (13.78)	11965 (11.65)
OTHER COURSES	M	8876 (32.64)	18597 (38.20)	27364 (37.24)	24774 (34.69)
	F	11738 (43.17)	19443 (39.94)	29618 (40.31)	28637 (40.09)
	T	20614 (75.81)	38040 (78.14)	56982 (77.55)	53411 (74.78)
GRAND TOTAL	M	11933 (43.88)	23934 (49.16)	35814(49.74)	32924 (46.10)
	F	15259 (56.12)	24749 (50.84)	37669 (51.26)	38500 (53.90)
	T	27,192 (100)	48,683 (100)	73,483 (100)	71,424 (100)

Figures in parentheses are in percentage (%)

Source: Statistical Digest on Colleges of Education in Nigeria

APPENDIX E

TECHNICAL COLLEGE TEACHER QUESTIONNAIRE (TCTQ)

ON SCHOOL INPUTS AND PRODUCTION OF QUALITATIVE TECHNICAL TEACHERS IN NIGERIA.

Dear Sir/Madam,

This questionnaire is designed to generate data to answer the research questions and hypothesis formulated for this study. All responses and information obtained will be used strictly for the research study.

Your co-operation in filling the questionnaire will be appreciated. Thank you.

SECTION A:

* Name of Institution: _____ *Department: _____

* Course taught: _____ *Number of Students taught in class: _____

* Academic qualification: _____ *Professional qualification: _____

* Number of years of experiences in teaching: _____

* Training / Seminars / Workshops attended in the last one year

1 -2 () 3 - 4 () 5 - 6 () 7 and above ()

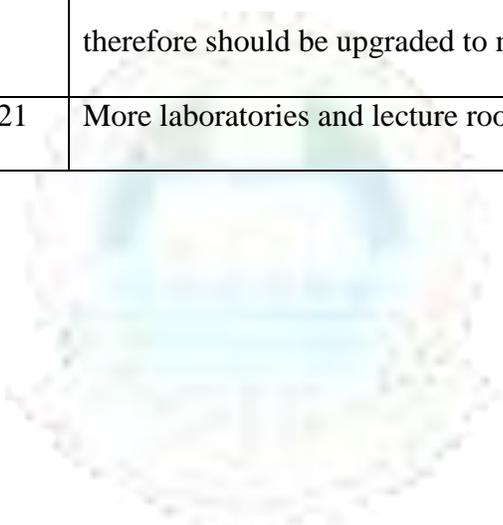
SECTION: B: Please tick the appropriate column

Strongly disagree (SD), Moderately disagree (MD), Moderately agree (MA) and Strongly agree (SA)

S/N	ITEM	SD	MD	MA	SA
1.	The present Technical Vocational Education (TVE) curriculum in Colleges of Education (Technical) is adequate to prepare students for the skills required in the labour market.				
2.	The TVE curriculum is adequate to enable graduates stand on their own as entrepreneurs				

3.	Graduates need to undergo extra apprenticeship programme after certification to be effective in the labour market.	SD	MD	MA	SA
	TEACHERS ATTITUDE				
4.	I enjoy arranging for experiments in the laboratory				
5.	Designing students activities in practical work is difficult for me				
6.	I feel sad when I am not available to teach my students				
	TEACHERS MORALE				
7.	The encouragement I receive on my job is the kind that greatly encourages me to make effort				
8.	I live, eat and breathe my job				
9.	Generally speaking, my career in this institution has been satisfactory				
	ADMINISTRATORS' MANAGERIAL SKILLS				
10.	The efforts of the management enhances the quality of graduates produced				
11.	From my experience, I feel the management treats staff poorly				
12.	I think the management considers employee welfare much less important than achievement of institutional goals				
	LEARNING TIME				
13.	The teaching hour is enough to fully teach the content of the curriculum satisfactorily				
14.	The stipulated time for practical is adequate				
15.	The period allocated for the SIWES programme is too short				

	AVAILABILITY OF INSTRUCTIONAL MATERIALS	SD	MD	MA	SA
16.	Modern equipment/tools/materials etc to teach TVE curriculum are available and adequate				
17.	In terms of instructional materials, the school is well equipped				
18.	The present instructional facilities in my schools are obsolete and therefore should be upgraded to meet the standard				
	INFRASTRUCTURAL FACILITIES				
19.	In terms of infrastructural facilities my school is well equipped				
20.	The present infrastructural facilities in my school are obsolete and therefore should be upgraded to meet the standard				
21.	More laboratories and lecture rooms are needed in my school				



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APPENDIX F

TECHNICAL VOCATIONAL EDUCATION STUDENTS' QUESTIONNAIRE (TVESQ) ON SCHOOL INPUTS AND PRODUCTION OF QUALITATIVE TECHNICAL TEACHERS IN NIGERIA.

Dear Sir/Madam,

This questionnaire is designed to generate data to answer the research questions and hypothesis formulated for this study. All data and information obtained will be used strictly for the research study.

Your co-operation in filling the questionnaire will be appreciated. Thank you.

SECTION A:

- * Name of Institution attended: _____
- * Course of study (Area of Specialization): _____
- * Sex: Male () Female ()
- * Age: 15 -19 () 20 -24 () 25 - 29 30 - 34 () 40 and above ()
- * Qualification at the point of entry into the college:
TC II () Technical College () WASSCE/GCE/NECO ()
Others (Please specify) _____
- * Mode of entry into the college: Pre-NCE () JAMB () Local Source ()
- * Cumulative Grade Point Average: 4.50-5.00 (), 3.50-4.49 (), 2.50-3.49 ()
1.50-2.49 (), Below 1.50 ().
- * Grade Point Average Last semester. 4.50-5.00 (), 3.50-4.49 (), 2.50-3.49 ()
1.50-2.49 (), Below 1.50 ().

SECTION: B Technical Vocational Education Students' and Parents' attitudinal Scale.

Please rate the following items by ticking. Strongly Disagree = 1 to Strongly Agree = 4, according to the way you perceive them.

Strongly disagree (SD), Moderately disagree (MD), Moderately agree (MA) and Strongly agree (SA)

		SD	MD	MA	SA
1.	Exposure to technical and vocational education makes me feel nervous and uncomfortable				
2.	Technical and vocational education classes are dull and boring				
3.	I prefer education and general courses to technical and vocational education courses				
4.	I find practicing technical drawing a complex process				
5.	I dislike woodwork practical				
6.	I am always excited at the electrical/electronic practical classes				
7.	Getting students involved in block making and building construction is advantageous				
8.	Students should be encouraged to acquire practical skills in technical and vocational courses				
9.	General education alone would not suffice for the total education of an individual				
10.	I enjoy practical in metal work				
11.	Making students to know the relationship between the principles and practice of auto mechanic facilitates learning				
12.	I am satisfied with courses in technical and vocational education in the college				
13.	I always like to update my knowledge in the principles involved in technical and vocational education				

		SD	MD	MA	SA
14.	I always like to update my knowledge in technical and vocational education practical				
15.	The nature of the technical and vocational education courses stirs real enthusiasm in me				
16.	There is something about my perception of the prospects of pursuing courses in technical and vocational education that greatly encourages me to do my best				
17	I believe the training we are exposed to in technical and vocational education courses are adequate				
18	The infrastructural facilities required for effective teaching and learning in TVE are adequate				
19	My school is adequately equipped with instructional materials for teaching TVE courses				
20	I have no particular feeling being a students of TVE				
21	I believe the functionality of the instructional materials in college positively affect our performance in TVE classes				
22	The management of my school are in full support of TVE programmes				
23	The instructors, lecturers and laboratory attendants are the best set of people I would love to work with				
24	Other courses are more important than TVE courses				
	PARENTAL ATTITUDE				
25	My parents prefer any of the courses in the university to the TVE courses I am doing				

26	The encouragement I receive from my parents influences my overall attitude to TVE				
27	My parents have not considered it worthwhile to part with the required money I need for the programme				



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APPENDIX G

RELIABILITY ANALYSIS OUTPUT FOR TVESQ

Reliability

***** Method 1 (space saver) will be used for this analysis *****

RELIABILITY ANALYSIS - SCALE (ALPHA)

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Alpha if Item Deleted
ITEM1B	51.4219	77.3247	.1582	.7800
ITEM2B	51.5947	74.0152	.3227	.7673
ITEM3B	51.7076	75.4809	.2361	.7745
ITEM4B	51.8173	76.9432	.2139	.7746
ITEM5B	51.6545	77.4269	.1818	.7770
ITEM6B	51.8505	75.9276	.2198	.7756
ITEM7B	51.5681	73.9062	.3576	.7645
ITEM8B	51.0532	72.7705	.5550	.7531
ITEM9B	51.7475	74.4360	.3182	.7675
ITEM10B	51.6279	73.6344	.3770	.7631
ITEM11B	51.4917	72.5641	.4584	.7573
ITEM12B	51.3555	72.1099	.4985	.7546
ITEM13B	51.2027	72.9488	.4897	.7561
ITEM14B	51.2259	72.2288	.5097	.7542
ITEM15B	51.5714	73.6524	.3886	.7623
ITEM16B	51.3987	72.2339	.4785	.7558
ITEM17B	51.5880	72.4964	.4407	.7583
ITEM18B	51.8372	75.5901	.2699	.7709

Reliability Coefficients

N of Cases = 301.0

N of Items = 18

Alpha = .7751

APPENDIX H

TCTQ RELIABILITY COEFF. MINUS ITEM 20

Reliability

***** Method 1 (space saver) will be used for this analysis *****

RELIABILITY ANALYSIS - SCALE (ALPHA)

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Alpha if Item Deleted
VAR00001	52.6000	24.3000	.4303	.6385
VAR00002	53.0000	18.5000	.8156	.5535
VAR00003	51.8000	31.7000	-.8142	.7259
VAR00004	51.8000	27.7000	-.0212	.6783
VAR00005	54.2000	31.2000	-.4203	.7409
VAR00006	51.8000	27.7000	-.0212	.6783
VAR00007	52.8000	21.2000	.7658	.5875
VAR00016	54.2000	27.2000	.0525	.6752
VAR00017	54.0000	23.5000	.7532	.6154
VAR00018	52.0000	23.5000	.7532	.6154
VAR00019	53.6000	27.3000	.0000	.6844
VAR00021	51.6000	27.8000	.0000	.6721
VAR00008	52.2000	25.7000	.3241	.6530
VAR00009	52.2000	25.7000	.3241	.6530
VAR00010	52.6000	24.3000	.4303	.6385
VAR00011	53.6000	27.8000	.0000	.6721
VAR00012	53.6000	27.8000	.0000	.6721
VAR00013	52.8000	20.2000	.5034	.6166
VAR00014	52.8000	20.2000	.5034	.6166
VAR00015	53.2000	27.2000	.0525	.6752

Reliability Coefficients

N of Cases = 5.0

N of Items = 20

Alpha = .6702