

THE HISTORY AND STATUS OF TECHNICAL EDUCATION
IN NIGERIA WITH SPECIAL REFERENCE
TO THE TEN NORTHERN STATES

By

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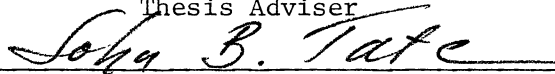


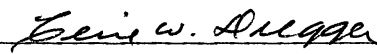
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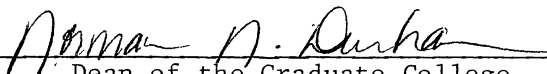
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PREFACE

This study traces the history of technical education in Nigeria and its present status. Special reference was made to the ten northern states. The primary objective is to determine what is being done to improve general education and especially technical education. A successful technical education program for the country and, in particular the ten northern states, will have to take into consideration the building of good facilities, supply of tools and equipment, and adequate teacher training.

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TABLE OF CONTENTS

Chapter	Page
I. SCOPE AND ORGANIZATION OF THE STUDY	1
Introduction	1
Definition of Technical Education.	4
Purpose of Study	5
Division of Study.	5
Review of Previous Studies	5
Summary.	11
Need for the Study	12
Expected Use of the Study.	12
II. THE TEN STATES AND THEIR EDUCATIONAL PROGRAMS	14
Introduction	14
Leadership Struggle.	14
Creation of Twelve States.	15
Creation of More States.	16
The New Names.	16
Geography, People, and Economic Status	18
People.	18
Religion.	19
Geography of the Ten States Combined.	19
Economic Status	20
Educational Development.	20
Mission	21
Secondary Education	22
Technical Education	23
Early Salaries	25
Recommendations	25
Summary.	25
III. METHOD AND PROCEDURE.	28
Introduction	28
Criteria for Making a Good Questionnaire.	28
The Form of a Well-Designed Questionnaire	29
Sponsoring of the Questionnaire	29
Validation of a Questionnaire	30
Population Surveyed.	31
Methods and Procedures	31

Chapter	Page
IV. ANALYSIS OF DATA.	33
Introduction	33
V. SUMMARY AND RECOMMENDATIONS	47
Introduction	47
Summary.	47
Recommendations.	49
State Objectives.	49
Course of Study	50
Supervision	50
Advisory Committee.	50
Textbooks	51
New Departments	51
Shops and Laboratories.	51
State Requirements.	51
Technical Teachers.	52
Advanced Training	52
Teachers' Salaries.	52
Technical Education and Primary Schools	53
Further Research	53
SELECTED BIBLIOGRAPHY.	54
APPENDIX A - LETTER TO THE RESPONDENTS	56
APPENDIX B - LETTER TO THE CHIEF EDUCATION OFFICERS (TECHNICAL) THROUGH THE PERMANENT SECRETARIES	59
APPENDIX C - COPY OF QUESTIONNAIRE	61
APPENDIX D - LIST OF VOLUNTARY AGENCIES.	66
APPENDIX E - REPORT ON TECHNICAL COLLEGE ORGANIZATION FOR NIGERIA APRIL, 1949	69
APPENDIX F - REPORT ON THE FEDERAL ADVISORY COMMITTEE ON TECHNICAL EDUCATION AND INDUSTRIAL TRAINING, 1957	72
APPENDIX G - TABLE SHOWING THE GROWTH OF TECHNICAL AND VOCATIONAL EDUCATION, 1959 - 1966	75
APPENDIX H - TABLE SHOWING PRIMARY SCHOOL, SECONDARY SCHOOL, TECHNICAL AND VOCATIONAL SCHOOL, AND TEACHER EDUCATION ENROLLMENT FIGURES.	78

LIST OF TABLES

Table	Page
I. The Commission's Salary Gradings (UDOJI)	26
II. List of Schools that Returned Questionnaire.	34
III. Qualifications of Technical Teachers	35
IV. Shop Activities.	37
V. Teaching Experience.	39
VI. Industrial Experience.	39
VII. Growth of Vocational/Technical Schools from 1950-1980. . .	40
VIII. School Enrollment and Growth	42
IX. Number of Students in a Class at One Time.	43
X. Use of Teaching Aids	44
XI. Annual Budgets for Equipment and Supplies.	44

FIGURE

Figure	Page
1. Map of Nigeria Showing the 19 States.	17

CHAPTER I

SCOPE AND ORGANIZATION OF THE STUDY

Introduction

The importance of technical education to any development oriented society cannot be over-emphasized. Nigeria, as a nation, has aspired very lately to industrial development and faced with many obstacles to effective industrialization. While these obstacles are natural, some of them are man-made, for example resources management and inappropriate governmental policies. If Nigeria would blame it on the colonial masters who introduced and fostered only liberal education, she might as well blame herself for her inability to perceive where her future lies and the role of technology in that future. At its inception in the country, technical education was received with apprehension. It was felt that the education that stresses the use of hands was for low class, unintelligent people. Contrary to the thinking of the 1950's and 1960's which gave liberal education a pre-eminent role in the development of the country, liberal education has not lived up to its acclaimed value. In Nigeria, the mixed feelings about technical and liberal education gave birth to two schools of thought; one emphasizing liberal education, the other technical education. Since most Nigerian administrators and education planners are offsprings of liberal education, it was very difficult

for advocates of technical education to make headway. The lack of foresight into the role that technical education plays in any developing nation has caused the technological lag that now haunts the country. Nigeria is a country which is rich in many natural resources like oil, tin, columbite, coal, etc., she is also rich in agricultural soil but the lack of technological know-how coupled with resource mismanagement has caused inadequate tapping of these great resources.

The improper management of resources became apparent in view of the present economic state of the country. Just about six years ago, the country was enjoying an oil boom that raised the per capita income of the citizens. In 1982, when Saudi Arabia, the world's largest oil producing country, stepped up her oil production, the whole world experienced an oil glut. Other oil producing nations were hurt by this oil glut because the price of oil fell. This inadvertently hurt their economy. Nigeria was one of the badly hurt nations because she depends solely on oil as a source of national income.

For a long time the country has been negligent in developing other natural resources or improving its agriculture. The present situation is a hard learned lesson that hopefully will put the country on the right track of re-evaluating and redirecting her economy.

It is disheartening that a country like Nigeria, rich in land and with very good soil for agricultural production, still imports over 50% of her grains and other food items. It is high time this trend is reversed.

The industrialization decree of 1976 was intended to develop and raise the production of her industries using available local material and resources, but it seems little has been really achieved. Nigerian

heads of state have tried to develop the country's agricultural production by launching different agricultural programs like "Operation Feed the Nation" and the "Green Revolution", all to no avail. However, all of these can be attributed to lack of technological know-how, but the blame cannot rest there; the administrators and Nigerians general attitudes towards work left much to be desired. Nevertheless, it is good to see that there is a redirection of priorities. The government has now taken positive steps to transfer technology from developed nations like America, Canada, France, Germany, Russia, Japan, etc.

The country's desire for the transfer of middle and high level technology is evidenced from the fact that many educational and other training programs have been implemented, both at the federal and state levels. One of the most popular of these programs is the "Crash Program", better known as the "Manpower Development Program". In this program, young Nigerian men and women alike between the ages of 19-30 are to be trained in various fields of technology from Associate Degree to Masters Degree level. The graduates from these programs, on successful graduation, will go back to fill the nearly empty gap of the middle level manpower. Most of the degree holders are expected to take up teaching appointments.

In the past decade, there has been growing disenchantment with liberal education in many developing countries and attention is fast shifting to technical vocational education. Even in the developed countries, vocational and technical education had remained a top priority for the general welfare of the citizens. This type of education, including agricultural education, is more work oriented but its returns are high and immediate.

The author has chosen this topic to study because of his keen interest in technical/vocational education and his realization of the needs in Nigeria and, in particular, the ten northern states. The material in this text will be presented in such a way as to trace the history of education in general and in particular technical education and its present status. It is hoped that the study will reveal deficiencies in the present programs and suggest some means for improving them.

Definition of Technical Education

In Nigeria, it is common to hear the two terms "technical education" and vocational education" used interchangeably. In this paper, however, the author wishes to draw a distinction between the two terms. The dictionary definition of technical education is "having special, usually practical knowledge especially of a mechanical or scientific subject", while vocational education is defined as "being in training in a specific skill of trade usually with a view to gainful employment soon after completion of training". As a technically oriented individual, the author wishes to deviate a little bit from the dictionary meaning and give an operational definition as used in this study. Technical education, as opposed to skill oriented vocational training, is built upon a solid theoretical basis which supports one or more skill components, whereas vocational education is that which occurs at a relatively lower level and often supports one skill component. It is very specific and its application relates to simple, concrete skills which can be taught and learned without the benefits of extensive theory. In a nutshell, whereas technical education is concerned

with the "why" and "how" of a skill, vocational education is concerned with the "how" of the skill.

Purpose of the Study

This study will give a resume of what is being done in technical education in the ten northern states and how the programs are being conducted. This study will diagnose the curriculum and make suggestions to improve the courses. It is also expected that more programs will be added to the curricula of other schools, more units added to the present curriculum of those schools already sponsoring some form of technical education, adequate equipment and supplies added for all school shops, and that teachers will be motivated to create new interests among students.

Division of the Study

This study is divided into two major parts. The first part is an attempt to trace the history of technical education in Nigeria and the ten northern states in particular.

The second part is a study of the status of technical education in these states.

Review of Previous Studies

Technical education in Nigeria is still in its embryo stage. Although much has been talked about, its importance and advantages, little has been done about its effective implementation. Technical education in Nigeria, especially in the ten northern states, has been neglected for many years. As such, no studies have been carried out

to update its status at the time of writing this paper. The few materials that have been printed are of advocative nature stressing the importance of implementing an effective technical education in the educational system, the level it should be taught, and the training of teachers.

Ohikhena (1974) feels that elementary technology should be introduced into all secondary school curriculum. In a developing country, such as Nigeria, the introduction of this type of education will create a favorable precondition for development. By developing curiosity and creativity in students, a foundation for technological development is instilled in them, thus a student in contact with anything, be it conventional or local, will not end by merely glancing over it but will go further to examine concepts that are applicable to its development into a useful use. With the current trends in technological development all over the world, elementary technology will help prepare students for circumstances they will meet in later life.

Taiwo (1974) cites a good example of the transfer of pre-vocational and pre-technical education. He feels that since there is no community where the illiterate children do not participate actively in the occupation of their parents, it should, therefore, be encouraged that parents and schools introduce elementary school children to elementary vocational and technical skills as local resource needs and circumstances demand. Early introduction to vocational/technical skills and practice at home, coupled with the liberal education, will bring about a balanced education, hence, enhance a smooth transition to any career to which a student may aspire.

Schwerin (1979) wrote "Constructive planning for technical education in developing countries must begin with a definition of technical education and its objectives". He went on to give his own definition of technical education. His view is that technical education should begin at the tertiary level, in an environment reproducing the setting in which the technical skills are likely to be practiced. The author whole-heartedly agrees with this view. It is crystal clear that one of the major problems of transferring technology by developing nations is that of direct copying without modifications to suit different local or cultural needs. As a result, the quality of skill acquired becomes nonfunctional. For example, most books used in the schools in developing nations are written and printed by foreigners; examples cited in these books, and sometimes diagrams and illustrations, make little or no sense because the student has not been exposed to such things. The environment that was considered at the time of writing is often that of a developed people. The materials for simple projects recommended are completely out of reach of the students, as such they end up learning theory and not practice.

In some schools where training equipment is obtainable, the teachers, due to lack of training or fear of cost factor, are afraid to use them for training purposes and where they are used, the students may become skillful in the use of equipments to work with, but in the real world of work where the facilities are unobtainable, they (the student) find themselves wanting.

Banjo (1974) feels that Nigeria needs a complete overhaul of its educational system, as a whole, and, in particular, in the areas of technical education. For a long time, Nigeria and Nigerians have only

considered paper qualification as a license to greatness or success. A person is given public recognition by the number of diplomas or certificates he or she owns without considering what contributions they have made to the well-being and progress of the country. It is high time that Nigerians, in whatever field they aspire, should back up their academic achievements with the ability to contribute and function properly in the society. To raise the level of technological awareness means a reshaping of technical education; a reshaping of education of all citizens as practitioners of technology, the general public as beneficiaries or consumers of technological progress, and, last but not least important, the policy and decision makers.

It is true that for a technological change to be effective much more is required than the existence of information. The proper people must possess the information and must be part of an organization which can make effective use of the information. A wide range of technical knowledge and manufacturing know-how are often required to transfer the technology of a single industrial product. The transmission of technical knowledge, related to the industrial techniques, requires a high calibre of engineering and technical personnel at both the dispersing and receiving ends. That Nigeria should continue to be a giant nation in Africa as it is claimed, the development of an effective technical education system to transfer and perpetuate technological advancement is very imperative (Ajayi, 1974).

Young (1974) expressed the view that there is manpower shortage in Nigeria. While this may be true ten years back, this view is not shared by the author today. The Nigerian problems are numerous, among which is inappropriate manpower training. When scholarships

are awarded to college and university bound students, industries and commerce, or for that matter, manpower economists are not consulted to find out about developmental trends so that adequate manpower training is made to provide for unforeseen manpower shortage. Because of this, more liberal arts graduates have been produced while very few science and technology graduates have been produced. It is high time this trend is reversed. For a sound technological take up, science and technology has to be introduced and encouraged in all schools. Science and technology teachers should be given some form of incentives that will help motivate creativity. Vocational technical education helps students to acquire salable skills at an early age that will make them independent citizens.

The Nigerian child wants to become self-supporting and independent through his own labor. Nigerian children want to work and thus want their work to be something more than the means of earning a bare subsistence.
(Young, 1974, p. 35)

The change in society, in general, with the tearing away of what use to be close family ties has left the Nigerian child in a position whereby they have to be able to support themselves. They know that their families are no longer able to prepare them for their life's occupation within the extended family circle. The number of secondary school graduates in the country who roam the streets without jobs is on the increase. The federal government would have to take positive steps to revitalize the nation's economy and develop more industries so that more jobs will be created to absorb both secondary school and university graduates. For secondary school graduates, vocational/technical education is one immediate solution to providing salable

skills to them. This will enable the Nigerian child to live quite independently.

The prerequisite for an effective vocational/technical educational program is the training of qualified teachers (Ozoro, 1975).

Nigeria needs to revolutionize her educational system whereby scientific and technological programs are given top priority. The system should also aim at inculcating high standards of discipline to the student and, most of all, the training of qualified and dedicated teachers. Technical education can be divided into three subgroups:

1. technical education offered along with general education in secondary schools (Industrial Arts Education),
2. education and training of craftsmen either through apprenticeship or in special technical training schools (Vocational Education),
3. education of technicians in polytechnics or technical colleges (Technical Education).

Teachers for each of these subdivisions may not be interchangeable without appropriate training because the training of teachers for each area poses special problems. Most Nigerian technical teachers at this time are either graduates of technical teacher colleges or polytechnics; these teachers are only equipped to teach in one of the areas earlier mentioned. For instance, in the areas of general technical education courses as well as some special technical subjects are offered at the West African School Certificate examination level.

The present National Certificate of Education (Technical) program, the only technical teacher certification program in the country, is inadequate to perform the practical and psychological surgery which technical education in the polytechnics badly need. One area to be

viewed critically is that of teacher education. Although much has been done both at the Federal and State levels to train more technical teachers and upgrade the existing ones through in-service training in colleges and universities, much is yet to be accomplished. It is understandable that training of teachers from outside the country is an expensive venture, but the end result actually justifies the means. More Nigerian universities should be encouraged to absorb more technical teacher students for degree programs.

Summary

The role of technology in the future of Nigeria or indeed in the future of mankind is very profound. Formidable obstacles have greatly retarded the country's aspiration to technological development. Nigerians, as a people, are responsible for some of these obstacles. The education and economic planners were shortsighted from seeing where the future of the country lies and the role of technology in that future. The Nigerian society has a myopic vision which wants quick results. Modern technological inventions were not achieved overnight, it took long scientific research and application, sometimes followed by failures and successes. Because of the oil boom of the early seventies, there was a growing feeling that with oil the country could wake up one day and purchase whatever she wanted. This factor and many others have relegated the country into its present technological state.

It is time that Nigeria gave priority to technical education. If she wants her children to continue to live independently, she has to pave the way for them to self-dependence. A strong education council

that will provide effective leadership is a necessity that should, by now, be beyond any doubt. Technical teacher training should be placed number one on the list. In devising the program, all factors that militate against technology should be eliminated.

If Nigeria continues to give teachers, especially technical teachers, pariah status in the society, she will be doomed to technological backwardness.

Need for the Study

Status surveys are needed in all fields to show trends, statistical summaries, and to furnish information upon which predictions for future developments may be based. The current status of technical education in the ten northern states was unknown prior to conducting this study; hence, it was decided to make a study of the status of technical education in the post-primary schools of these states. This study of the history and status of technical education is needed to tell us what is being done in the field and to answer many questions, such as: Are the equipments in the schools adequate? Is the curriculum appropriate? Are the teachers adequately trained? etc.

Expected Use of the Study

As earlier stated, the author proposes to identify certain major problems in technical education in the ten northern states and to show what influence, if any, they have had on the entire educational systems.

It is expected that the study will be used by the various state ministries of education and their advisory committees for technical

education as a foundation for making recommendations for the furtherance of technical education.

CHAPTER II

THE TEN STATES AND THEIR EDUCATIONAL PROGRAMS

Introduction

As a result of the London Conference in 1954, Nigeria was divided into three regions within a federation, namely North, with headquarters at Zungeru which was later moved to Kaduna; East, with headquarters at Enugu; and West, with headquarters at Ibadan. A fourth region was later carved, known as Mid-Western region with headquarters at Benin.

Leadership Struggle

Nigeria remained under colonial rule until October 1, 1960 when she became an independent state, free from British rule. Dr. Nnamdi Azikiwe became the first president under the self rule and Tafawa Balewa was made prime minister.

Six years after she got her independence, Nigeria was plunged into intertribal conflicts that precipitated the civil war of 1967, which lasted four years. The division of the country into four regions had further divided the three larger tribal groups in the country, namely Hausa, Ibo, and Yoruba. There was regional affiliation by these tribes and other minor tribes of the (four) regions. This had resulted in tribal and ethnic tension and antagonism. The Ibos from the East, who have earlier received Western education, were dominant over the

less educated Hausas. There was less agreement or any mutual relationship between the Ibos and the Yorubas of the East and West, respectively, due to the customary, linguistic, and other cultural differences.

In the north, a similar atmosphere prevailed. The dominating ethnic groups, the Fulanis and the Hausas, are less friendly to the Yorubas and relationship with the Ibos has gradually deteriorated.

During this time most government offices in the north, corporations, and commerce were being dominated by the other tribes; especially the Ibos. The coup d'etat of January 15, 1966 made matters worse. The premier of the northern region, Sir Ahmadu Bello, was assassinated. With him was the Prime Minister Tafawa Balewa, also a northerner. General A. Ironsi, an Ibo man, became the head of state. Among other things, he tried to amalgamate the four regions but the northerners were strongly opposed to it because they saw it as a way towards further domination and oppression. During this time, the clashes between the Hausas and Ibos became an everyday activity. There was complete anarchy and disintegration. A counter coup d'etat was imminent. On July 20, 1966, General A. Ironsi was assassinated and Lt. Col. Y. Gowon, a northerner who later became General Y. Gowon, was made head of state.

Creation of the Twelve States

In an effort to wipe out regional affiliations and tribal animosity and expand development, twelve states were created by Y. Gowon, three in the West and three in the East. The other six northern states were created from the former Northern region.

Creation of More States

Having led the country for about nine years, Gowon's regime began to lose its grip on the nation. There was much corruption in the country -- gross negligence of duty, low productivity, and a general deterioration of the society. He was dethroned on July 29, 1975, following a bloodless coup d'etat.

Brigadier Murtala Mohammed became the new head of state. Because of much public dissatisfaction about the boundary inadequacy of the twelve states, seven more states were carved from some of the existing twelve bringing the total number of states to nineteen (Fig. 1).

Brigadier Murtala Mohammed, in an effort to clear the society of its ills, made many radical changes within a very short period of time. He fired many top governmental civil servants and succeeded in making enemies for himself. He was also assassinated on February 12, 1977, and Brigadier Olusegun Obasanjo became the new head of state. Two years later, Obasanjo handed over power to an elected civilian regime on October 1, 1979, Alhaji Shehu Shagari was elected first Executive President of Nigeria and Dr. Ekweme, Vice President.

The New Names

When more states were created by Brigadier Murtala Mohammed, the other states that were not touched were renamed because the former names were thought to have sectional connotation. The former six northern states became ten in number, namely: Bauchi, Benue, Borno, Gongola, Kaduna, Kano, Kwara, Niger, Plateau, and Sokoto.

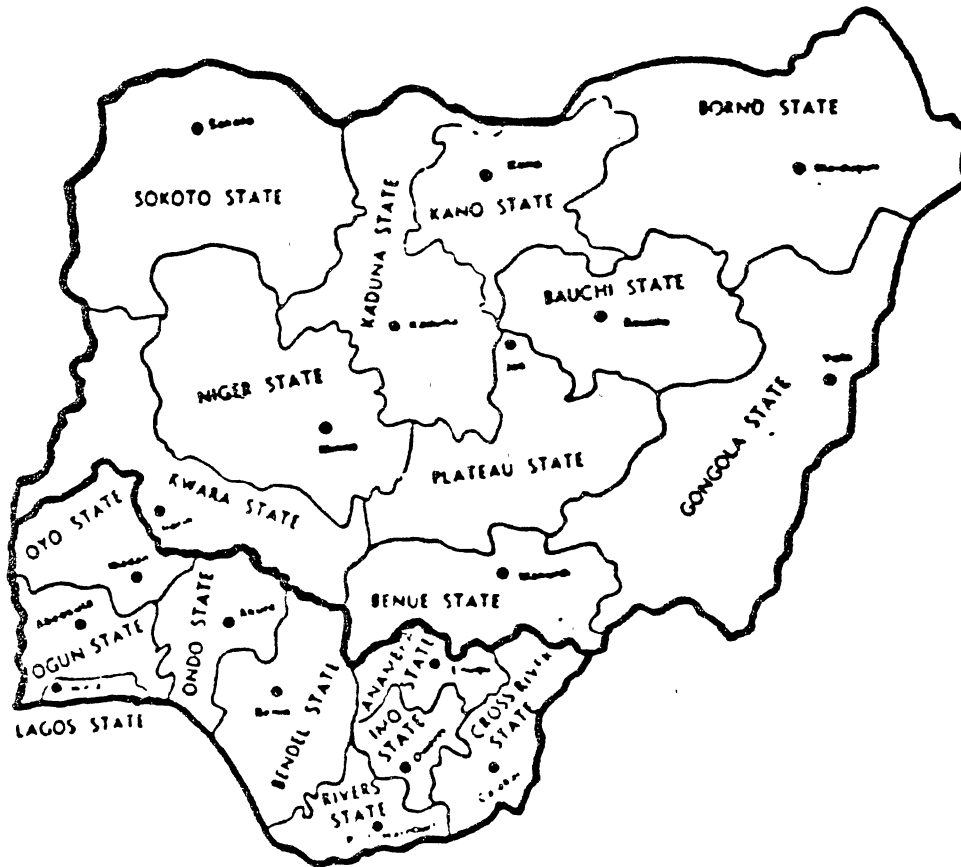


Figure 1. Map of Nigeria showing the 19 states.

Geography, People, and Economic Status

Nigeria, located on the west coast of the African Continent, is bounded on the south by the Gulf of Guinea and on the landward sides by Cameroon, Chad, Niger, and Dahomey. Four main topographic areas may be distinguished in terms of vegetation, altitude, and climate:

1. The hot, humid coastal belt of mangrove swamps is between 10-60 miles wide.
2. north of this is the tropical rain forests and oil palm bush, 50-100 miles wide.
3. The relatively dry central plateau of open woodland and savannah covers a greater part of the northern region, it stands between 6,000-7,000 feet above sea level with no significant mountains.
4. In the extreme north is the semi-arid desert.

Two seasons, dry and wet, are well marked throughout most of Nigeria. The north's dry season, from October to April, is usually made dusty by Sahara winds called 'Harmattan'. In the south, this season extends from November to April with considerable desert wind and some dust in December and January. Annual rainfall varies from 150 inches on the eastern coast to 25 inches or less in the extreme north.

People

Population: 79.8 million (1973 Provisional Census Figure) with an annual growth rate of 2.4-3%. The most populous country in Africa with a density of 224 per square mile, Nigeria accounts for almost 25% of Black Africa's people. Although less than 30% of Nigerians live in

in the metropolitan areas, at least 24 cities have populations in excess of 100,000. Fourteen of these cities are from the northern states.

The variety of customs, languages, and traditions among Nigeria's 250 ethnic groups gives the country a rich heterogeneity. The three major languages are Hausa, Ibo, and Yoruba. Communication between people of varying ethnic backgrounds frequently takes place in English which is the official language.

Religion

About 52% of Nigerians are Muslims, 34% Christians, and 14% practice Animism. In the ten northern states, Islam is the dominant religion which accounts for most of the above 52% figure.

Geography of the Ten States Combined

The ten states combined together made up what used to be the northern region and occupies more than half the total area of Nigeria -- from the big rivers, Niger and Benue, in the south to the boundaries of Nigeria and Niger Republic in the semi-arid desert north. These states together are bounded in the west by the Benin Republic and on the east by Cameroon. They cover land ranging in elevation from the savanna grassland to the small hills and mountains of the plateau up to the plains and semi-arid desert of the north.

Apart from the two main rivers earlier mentioned, the Cross River, Lake Chad, and the extensive lagoons of the southern coastal area play an important role in transportation and other economic activities, like fishing and dry season farming, employing both primitive and modern irrigation systems. During the past half decade,

development has been going on in dam construction in the far northern areas where the annual rainfall falls below 24 inches.

Economic Status

The prosperity of any country depends upon its commerce, agriculture, ranching, and other resources. Nigeria, Africa's number one oil producer, ranks second in oil exportation to the United States of America. Although oil is not extracted to any significant degree in any of the ten northern states, their contribution to the economy of the country in other areas like agriculture, commerce, and ranching is of very significant importance.

Nigeria's exports amounted to \$9.3 billion in 1974, with 92% of this coming from petroleum. This figure shows the country's dependency on oil. Other mineral resources are also found in some of the northern states, tin in Jos Plateau and columbite in Sokoto, located in Sokoto state. The Kaduna oil refinery, the only one in the north, is also an economic boost. The Yankari Games Reserve, in Bauchi State, and the Abuja cattle ranch, in Niger State, are notable tourist attractions internationally.

Educational Development

Education in Nigeria is not a new development. From time immemorial, every social group has provided a system whereby children have been trained for their adult roles in its existence. Successive generations of boys and girls have learned in their homes, in the fields, and the market places and through peers and initiation rites,

the knowledge which their elders wished to pass on in order that a certain continuity might be maintained in the community's life.

Mission

The first experience of education in Nigeria as practiced in Europe was brought by the Portuguese merchant adventurers in the early 15th century. In 1571, the Portuguese missionaries built a seminary off the coast of Nigeria on an island called Sao Thomme. These early missionaries made frequent visits to Warri, a town in Nigeria.

There was an enormous growth of the trans-atlantic slave trade in the 16th and 17th centuries. The efforts made by these early missionaries to organize education was thwarted by primitive inhabitants. As such, little educational impact was made upon the people inland.

It was not until the last quarter of the 19th century that Western education made any significant impact in Nigeria. The first modern missionary contact was made in 1842 when Reverend Thomas Freeman and Mr. and Mrs. DeGraft of the Wesleyan Methodist Mission from the Gold Coast arrived at Badagry, established a mission there, and built a school. From that time onwards, Western education and influence began to develop in the Southern Provinces. The Catholic missionaries joined the same year. By 1846, Baptist Christians had settled in Abeokuta, Southern Nigeria. In Northern Nigeria, comprising of the ten northern states, missionary education activities developed at a much slower pace. This was due to the fact that Islam and Arabic civilization had already formed a tap root. Islamic schools were estimated to be over 2,000 in the North at this time. Agreement had to be reached between the British government and the Emirs before

Christian missionaries were permitted into the Emirates to establish their schools. Also, there was antagonism towards Western education by the Hausas and Fulanis who saw Christianity as a threat to Islam in the North. However, the missionaries were able to penetrate into the pagan areas of the North and started mission work and built elementary schools.

Secondary Education

One of the first secondary schools to be opened in Nigeria was the Church Missionary Society Grammar School, built in Lagos in 1859 with an enrollment of six students, all boys. In 1847, the United Church of Scotland started a mission in Calabar, six years later the Southern Baptist convention from the United States began work at Oyo, under the leadership of T. J. Bowen. A school was built in Lagos called Baptist Academy. Another school was called St. Gregory Grammar School. Many more secondary schools were built in the areas around the coast.

In the North, schools could not start due to resistance offered by the Islamic Emirs who were bitterly against Western education. However, in 1914, at the verge of the First World War, Mr. Vischer, then a school supervisor, succeeded in establishing four primary schools in the northern provinces of Nasarawa where there were two schools and Katsina where a craft school had earlier been established. The beginning of technical education in the North was the opening of these two craft schools.

Similar primary and craft schools were requested by the other Emirs who saw the benefit of such education in their different emirates. The Emir of Sokoto requested schools for Birnin Kebbi and Argungu, also the Emirs of Zaria, Bida, and Ilorin made similar requests. The Shehu of Borno also had requested that a craft school be established in his emirate. It must be kept in mind that at this time school administrators and planners were faced with the problem of educating the pagan non-Muslims, while continuing to develop the system for fanatic Muslims. In this regard, provincial schools were established to absorb the Muslim students. These schools started in Bida, Katsina, Kano, Nasarawa, Sokoto, and Zaria. These schools were later upgraded to provincial secondary schools.

It must be mentioned here that the missionaries did not sanction the idea of provincial schools because it was a threat to their missionary work.

Technical Education

Up to 1960 and beyond most schools in Nigeria, especially in the North, were operated by voluntary agencies. Considering the cost of building a technical school, it is small wonder then that technical education was put aside and partly forgotten. Other factors that have contributed to the lag in technical education were that

1. government and industrial organizations requiring the services of a labor force with varying skills followed the tradition of British craft industries with some form of apprenticeship or training on the job; and

2. at this material time the demand for workers with a high degree of advanced technical and theoretical knowledge was very small.

During this time, the few existing vocational, craft, and technical schools were operated by either private individuals, governments, or private firms, among these institutions only those that were operated within industries, i.e., Shell, B.P., and United African Trading Company, could be reckoned with. They were the only ones that were fairly equipped.

The first big step taken by government towards technical education came about following the Ashby recommendation to establish the technical college at Yaba in Lagos. The standard in this school was comparable to that obtained at a good English technical college. There was a problem, however, with enrollment into this school. There were no feeder schools to the technical college. The existing craft schools and other apprentice training programs were ill equipped to provide adequate technical subject instruction to enable graduates from these schools to proceed to Yaba Higher College. There was a big gap between the "tradesman" and the apprentice-type of training at professional or semi-professional levels. In the Northern region, as part of her ten years development plan, a trade center was established in Kaduna. In 1948, this center was providing courses for apprentices in carpentry, mechanical engineering, and bricklaying. In 1955, similar centers were opened in Bukuru, Jos, and Kano. The enrollment in the Kaduna Trade Center in 1948-49 was 73 students, in 1950-51 there were 93, and in 1955, 223. In 1955, in Bukuru Trade Center, there was 210 students and in Kano, 145. By 1963, most of the trade centers had been upgraded to full-fledged technical schools, but not properly equipped. In 1972,

the craft schools were all upgraded to secondary technical schools. There are several technical schools now all over the ten northern states. In addition to these, most of the secondary schools offered technical courses in addition to their academic courses. Each of the ten Northern states now has a technical college at the post-secondary level.

Early Salaries

It was not until 1955, in the federal territory of Lagos, that a committee was set up under the chairmanship of Mr. H. H. Kaine to review and give recommendations on the salaries of non-government teachers.

Recommendations

The following salary scale was recommended:

Graduate with teaching qualifications: ₦ 1,248 - ₦ 2,760
 Graduate without teaching qualifications: ₦ 1,200 - ₦ 2,760
 Yuba Diploma: ₦ 612 - ₦ 1,320
 Teachers Senior Certificate: ₦ 612 - ₦ 1,320
 Elementary: ₦ 276 - ₦ 552
 Higher Elementary (4 years of school): ₦ 348 - ₦ 984
 Secondary (IV) Pass (untrained): ₦ 212 - ₦ 324
 Standard (IV) Pass (untrained): ₦ 180 - ₦ 276

In 1976, the Udoji Commission was set up to review the entire salary gradings in the country (Table I)(Fafunwa, 1974).

Summary

This chapter reviews the very early development of education in Nigeria, the activities of missionaries, early Western education in Nigeria, the governmental instability that directly and indirectly affects schools, the slow pace of school policies, educational

TABLE I
THE COMMISSION'S SALARY GRADINGS
(UDOJI)

Grade	1	2	3	4	5	6	7	8	9
	Naira	Naira	Naira	Naira	Naira	Naira	Naira	Naira	Naira
1	720	745	770	795	820	845	870		
2	800	830	860	890	920	950	980		
3	900	940	980	1060	1060	1100	1140		
4	1100	1130	1160	1190	1220	1260	1290	1320	1350
5	1379	1419	1468	1517	1566	1615	1664	1713	1762
6	1630	1705	1780	1855	1930	2080	2080	2155	2230
7	2000	2110	2220	2330	2440	2550	2660	2770	2880
8	2780	2913	3046	3179	3312	3445	3578	3711	3884
9	3980	4130	4280	4340	4580	4730	4880	5030	5180
10	5350	5470	5590	5710	5830	5950	6070	6190	6430
11	5445	5737	6029	6321	6613	6905			
12	6129	6453	6777	7101	7425	7749			
13	6895	7262	7629	7996	8363	8730			
14	7730	8170	8580	8990	9400	9810			
15	7760	8495	10260	11025					
16	9819	10683	11547	12411					
17	11043	12105	12987	13959					

development in the North, and the role played by the Emirs. The chapter also briefly discussed the geography and economic status of the country and especially the ten states concerned.

CHAPTER III

METHOD AND PROCEDURE

Introduction

In order for one to carry out a survey of this nature, it becomes necessary to delve into the present conditions of technical education programs in the ten northern states. What applies to one state is applicable to the others. The questionnaire technique was one of the major sources used to assemble the statistical information for the study of technical education schools in the ten northern states. A brief summary of the questionnaire technique is given here.

Criteria for Making a Good Questionnaire

Respondents often ask these questions about the research worker who sponsors a questionnaire:

1. Who is he?
2. Where is he located?
3. What is his title?
4. Is he dependable?
5. Is he qualified to carry out such a study?
6. What school is sponsoring this study?
7. What faculty is sponsoring this study?

If the respondent can answer these questions satisfactorily for himself, a higher percentage of return will be received by the researcher.

The Form of a Well-Designed Questionnaire

In the beginning of the questionnaire, provision was made for the respondent's name, his/her address, and a line for their position. The title possessed by the one answering the questionnaire adds prestige to it. Without this information much of the value of the questionnaire is lost. Each set was fastened together. Questions will not be asked in a questionnaire if the answers could be found elsewhere. The purpose of this type of research is to collect information which can only be secured from those to whom the questionnaire are addressed.

The problem was being studied in advance to insure ample knowledge as to what questions should be asked. This will enable one to refrain from asking questions that are not needed to complete the study. Many inquiry forms are not returned because either they are too long, ambiguously worded, improper directions, or even dirty, and the respondent just felt that the value in returning them does not justify the time that must be given to answer the questions. One characteristic of a good questionnaire is that: it should be as short as possible, only long enough to get the essential data. Long questionnaires frequently find their way into wastebaskets.

A research worker can always insure a higher return percentage by being considerate of the people questioned. This can be accomplished when the questions do not require much of the person's time.

Sponsoring of the Questionnaire

A letter was enclosed with the questionnaire explaining the needs and importance of such a study. That the letter and questionnaire was correct in sentence structure, rhetoric, composition, and spelling goes

without say, as one must try to impress the prospective respondents that he is able to carry on the study intelligently. It is sometimes necessary to send a letter of inquiry in advance asking the addressee, in a courteous way, for a few minutes of his time to answer the questions. Due to time and distance, it was not possible to do this. However, self-addressed, stamped return envelopes were enclosed to minimize time and expense and for the convenience of the respondent. Follow-up cards were sent for a speedy response.

Validation of a Questionnaire .

The respondent should be qualified to answer the questions that are being sent him. For example, a teacher should know his qualifications, salaries, experience, value of tools, size of shop or laboratory, type of equipment, etc.

The prospective respondents to whom the questionnaire were sent were so far assumed to be those in the best position to give reliable answers.

The respondents were given a summary of the findings in consideration of the time spent in answering the questions. They were informed of this when the first inquiry was made. This was believed to have induced them to take part more readily.

The questionnaire system, if used as a research instrument, is highly beneficial, if those who use it would assume some responsibility for its validation.

Another frequently helpful element in the approach is the promise to supply a summary of findings to such respondents if they indicate a desire for it. If this practice of supporting a summary of findings

were fairly consistently followed, it should accomplish a great deal in reducing the resentment against the questionnaire procedure.

If sending summaries, as promised, became a general practice, it might be found that the percentage of responses would be greatly increased over the 70% which is now considered a good average.

Population Surveyed

The purpose of this study, as earlier mentioned, is to give the history and present status of technical education in the ten northern states of Nigeria. It is also hoped to identify those problematic areas like funding for equipment and materials and the training and upgrading of technical teachers. Specifically, this study is intended to pinpoint areas that need proper consideration in implementing an effective technical education program.

Twenty questionnaires were sent to the chief educational officers (technical) of each of the ten northern states to distribute to all the technical schools in their states and secondary schools that offer any kind of technical education program. The questionnaires were intended for both principals and classroom teachers of any form of technical/ industrial education program. The students and staff from the liberal arts were excluded because it was felt that they would know little about technical education.

Methods and Procedures

The 200 questionnaires that were sent to Nigeria were sent in bulk to the author's close and very reliable relation. Twenty copies of the questionnaires were sent to each of the chief education officers

(technical) of each of the ten northern states. In some cases, it was necessary to travel to the state capitols to submit the questionnaires in person (hand-to-hand) as for example in Kaduna, Kano, Sokoto, Plateau, and Borno States. The answered questionnaires were sent back to the chief education officers in a supplied, self-addressed envelope, who then sent them back to the author's relation within three to four weeks. When the author's relation collected all the questionnaires, they were returned in bulk the same way they were received. Reminder cards were sent to the chief technical education officer of each of the states after two weeks. Out of the 200 questionnaires sent, only 40 were returned. A compilation was made of the responses to each of the 26 questions. The comments were also examined regarding responses to the last question which was meant for general remarks.

CHAPTER IV

ANALYSIS OF DATA

Introduction

The primary purpose of this study was to identify those reasons that have hindered the progress of technical education in Nigeria, particularly in the ten northern states. Although much has been said in the Nigerian Dailies about the importance of vocational and technical education in promoting both the social and economic welfare of the citizens, little has been done to popularize and improve it. It is hoped that major areas of concern will be revealed from this study and hopefully positive steps are taken to improve the situation.

Although response was received from 25 schools, not all the ten states were represented (Table II). These reports came from six of the ten states. Because conditions that exist in one state in the north are very similar to the others, it is proper to assume that problems that emanate from these six states represent problems experienced in all the ten states.

Of the 45 respondents to the questionnaires, Table III gives the academic qualifications of the teachers. The table did not, however, reveal the type of area of discipline they received. It can be seen that only 1 out of the 45 teachers read to the Doctorate Degree level, 5 have the Higher National Certificate in an engineering technology field, and 13 are formally trained teachers in a technical field.

TABLE II
LIST OF SCHOOLS THAT RETURNED QUESTIONNAIRE

Name of School	City
1. Government Technical College	Kano
2. Vocational Training Center	Belwa
3. Vocational Training Center	Numan
4. Vocational Training Center	Mafara
5. Government College, Birning	Kudu
6. Government Technical College	Wudil
7. Government Technical Training School	Idah
8. Vocational Training Center	Kangiwa
9. Government Secondary Technical School	Tusau
10. Government Secondary Technical School	Numan
11. Vocational Training Center	Kano
12. Vocational Training Center	Kware
13. Vocational Training Center	Zing
14. Government Secondary Technical School	Sokoto
15. Government Secondary Technical School	Acida
16. Vocational Training Center	Ambursa
17. Government Vocational Training Center	Gombi
18. Murtala College	Yola
19. Vocational Training Center	Karim Lamido
20. Government Secondary Technical School	Mubi
21. Government Secondary Technical School	Mashi
22. Government Secondary Technical School	Soba
23. Government Technical Training School	Kaduna
24. Vocational Training Center	Dura
25. Vocational Training Center	Kafanchan

TABLE III
 QUALIFICATIONS OF TECHNICAL TEACHERS

Name of Diploma/Certificate	Number of Teachers
Primary School Leaving Certificate	1
West African School Certificate	3
Technical School Certificate	5
Ordinary National Diploma or Ordinary National Certificate	3
National Certificate of Education (Technical)	13
Higher National Diploma or Higher National Certificate	5
Bachelor of Science or Bachelor of Arts	9
Master of Science or Master of Arts	5
Doctor of Philosophy or Doctor of Education	1
Total	45

Three have the Ordinary National Diploma or Ordinary National Certificate, five are Technical School graduates, while three have the West African School Certificates. Only one of the teachers had not read beyond the primary school level, but years of teaching in a trade field has enabled him to be a staff member in a secondary school.

These statistics are very interesting because it shows that 36 out of the 45 teachers teaching in either a vocational or secondary technical school has read beyond the secondary or technical school level. This, of course, means that academically they are qualified to teach. The number of university and polytechnic graduates is a bit

encouraging. However, one would have expected more Higher National Diploma or Higher National Certificate graduates from the polytechnics to be teaching technical courses in these schools. Nevertheless, the explanation could be that they get better jobs with the industries because of their technical discipline, hence, they shun teaching.

The age range of these teachers is from 26 years to 48 year, with the median age being 29. Median is used here because the mean age would have been inflated by a single age of 48. Nevertheless, the figures show that many young adults go into teaching. This is important because, at this age, the teachers are very energetic and dynamic.

Question number three, in the questionnaire was meant to reveal how long a teacher stays in a school; the response is baffling. Twenty of the respondents have been in these schools for a period of less than one year. Only one-half have stayed continuously in their school for between two and four years. Three reported spending from eight to ten years in their schools. Considering that it takes a year or two for a teacher to get adjusted to a new school, one can conclude that half of the teachers in these schools are new to the schools. However, if the school is a new one, then it is understandable.

From Table I, it is clear that most of these schools are vocational training schools, few are secondary technical schools, and a very few are purely technical training schools. The response to question number ten will reveal how long these schools have been in existence. Meanwhile, it is worthwhile to know the kinds of courses that are taught in the schools

From Table IV, it can be seen that woodwork is offered in all

the schools while technical drawing and metalwork are offered in 20 schools, respectively.

TABLE IV
SHOP ACTIVITIES

Name of Activity	Number of Schools Teaching It
Automechanics	18
Building Trades	15
Electricity	16
Electronics	9
Machine Shop	8
Metalwork	20
Painting/Decoration	3
Sheet Metal Work	5
Technical Drawing	20
Plastics	--
Leather Work	--
Ceramics	--
Printing Trades	--
Woodwork	25

One would expect metalwork and technical drawing to be offered in all the schools, but it is not. However, since sheet metal work is offered in five schools, it is proper to conclude that it takes the place of metalwork. Electricity is taught in 16 of the schools,

automechanics in 18, building trades in 15, electronics in 9, machine shop in 6, and painting and decorating in 4. Other trades like plastics, leatherwork, ceramics, and printing are not offered in any of the schools. The reasons given for not offering some of these important courses in the vocational technical schools is that either there are no teachers to teach them or lack of facilities. Most of these courses are offered in lieu of the teacher's specialization teaching in the area. When asked to report their areas of specialization, 18 teachers reported to be specialized in either carpentry or cabinet-making, six for metalwork, three for machine shop, three for sheet metal work, eight for building trades, three for automechanics, two for electricity, one for electronics, two for business and finance, one for geography, and one for english. There seems to be little congruency between teachers' specialization and the number of schools offering their courses. It seems that some other teachers start a program, then leave after a short while and another teacher from a different specialty is asked to teach the course. Although 50% of the teachers reported not to have stayed long in these schools, the figure of their years in the teaching profession is encouraging. More than three-quarters reported having taught from 6 to 20 years (Table V).

Forty-seven percent of the respondents have worked in an industry for only a period of from six months to one year. Twelve percent of these have had two to four years industrial experience (Table VI). Since practical experience in an industry is a vital asset to any vocational technical teacher, most of the teachers do not seem to be equipped practically to teach in these schools.

TABLE V
TEACHING EXPERIENCE

Years of Training	Number of Teachers
6 months - 4 years	13
5 months - 10 years	8
11 months - 15 years	10
16 months - 20 years	7
21 months - 25 years	7
Total	45

TABLE VI
INDUSTRIAL EXPERIENCE

Work in Industry	Number of Teachers
Yes	22
No	19
Not reported	4
Total	45

Table VII shows that between 1950 to 1955 only two vocational schools were in existence. These schools were called trade centers. From 1956 to 1960, three schools were established, these were the pre-independence years when Nigeria was still being ruled by the

British. After Nigeria got her independence in October 1960 and became a republic state in 1973, three more trade schools were opened in the then northern region. It can be seen that before independence and the early years after independence not much was done as regards vocational technical education. Between 1971 and 1975, only one school was opened as these years were the Nigerian Civil War years. Emphasis on technical education took place between 1976 to 1980. The military government, which saw the importance of vocational technical education, converted most secondary and commercial schools to comprehensive schools and opened more vocational schools; 15 in number and more were underway.

TABLE VII
GROWTH OF VOCATIONAL/TECHNICAL SCHOOLS
FROM 1950 - 1980

Year School was Opened	Number of Schools
1950 - 1955	2
1956 - 1960	3
1961 - 1965	2
1966 - 1970	5
1971 - 1975	1
1976 - 1980	15
Total	28

Table VIII shows the enrollment figures at the opening of the different schools. One school shows a decrease in student enrollment, Vocational Trade Center, Numan. The reason for the decrease in student enrollment was not disclosed. Another school, Government Secondary Technical School, Acida, did not show any increase in student enrollment. One will assume that since the school had just been opened, the number of students will still be the same. Because the author knows some of these schools personally, some of the enrollment figures are very alarming. Hopefully, more buildings have been added to contain the students.

Table IX indicates that some of the laboratory or workshop classes are packed full at laboratory class period. One wonders how a teacher could teach laboratory work or shop to more than thirty students at any one time. Considering the size of buildings reported in this study and the equipment, it sounds like mockery of vocational technical education to have these numbers of students in a laboratory class at any one time. In a theory class, it might be possible to teach such a large class, but in a practical or laboratory class, it is an impossible situation. This is a problem area that needs to be looked into.

Concerning the use of textbooks, 18 of the 25 schools reported using textbooks for their trade technology which included technical drawing. However, the textbooks used vary from school to school. One of these schools used physics textbooks for its trade science and calculation. How relevant this is, needs to be investigated. From the titles of the books reported, it seems that some of them are good books, but that also is open to investigation. Nine schools did not

TABLE VIII
SCHOOL ENROLLMENT AND GROWTH

Name of School	Enrollment When School was Opened	Current Enrollment
Government Technical College, Kano	---	1,250
Vocational Trade Center, M/Balewa	124	184
Vocational Trade Center, Mafara	66	237
Vocational Trade Center, Numan	70	60
Government College, Birnin Kuda	320	941
Government Technical College, Wudil	75	1,047
Government Technical Training School, Idah	50	750
Vocational Training Center, Kangiwa	250	356
Government Secondary Technical School, Tusau	56	800
Government Secondary Technical School, Numan	60	800
Vocational Training Center, Kano	---	759
Vocational Training Center, Kware	139	556
Vocational Training Center, Zing	64	128
Government Secondary Technical School, Sokoto	140	650
Government Secondary Technical School, Acida	108	108
Vocational Training Center, Ambursa	216	4,450
Government Vocational Training Center, Gombi	50	155
Murtala College, Yola	50	1,110
Vocational Training Center, Karim Lamido	60	119
Government Secondary Technical School, Mubi	30	989
Government Secondary Technical School, Mashi	40	1,115
Government Secondary Technical School, Soba	55	1,275
Government Secondary Technical School, Kaduna	142	655
Vocational Training Center, Daura	65	230
Vocational Training Center, Kafanchan	80	320

report the use of any form of textbook. One wonders how the courses are being taught without the use of a textbook to guide the teacher.

TABLE IX
NUMBER OF STUDENTS IN A CLASS
AT ONE TIME

Number of Students	Number of Schools
6 - 12	1
13 - 19	2
20 - 26	3
27 - 33	6
34 - 40	7
41 - 46	2
47 - 53	1
Total	22

Table X indicates that 18 of the 25 schools use some form of visual aids to enhance learning. Most of these visual aids are in the form of wall charts and models. No form of visual aid was reported from seven schools. However, television monitors and film strips are not used in any of these schools. Only two schools report the use of overhead projectors.

Visual aids are an important part of successful teaching if all the students are to be reached. Knowing that individuals learn differently, more visual aids should be used in the class.

Table XI shows that 19 of these schools are given an annual budget to work with. Although some schools reported that the budget

TABLE X
USE OF TEACHING AIDS

Name of Visual Equipment	Number of Schools That Use Them
Models	18
Overhead Projector	2
Film Strip	--
Television Monitor	--
Other Visual Aids	18
None	7

TABLE XI
ANNUAL BUDGET FOR EQUIPMENT
AND SUPPLIES

Yes	19
No	6

is determined by their ministry of education, other schools report that equipment, tools, and other supplies are given to them on request. Six schools did not report any kind of budget. Funding is the most crucial factor in operating a vocational and technical school. The procedure for getting equipment and supplies has been stated, but how efficient these processes are, leave much to be desired.

Most of the schools have separate lecture and tool rooms. Although their sizes are very small, they serve their purposes. Asked how many industries did the class visit during the past two years, only one-third of the schools reported having some of their students visit an industry.

The response to question number twenty of the questionnaire on the type of equipment available in the shops and laboratories is very discouraging. It clearly shows that almost all the schools are very poorly equipped. Although many of these schools are located out of the city, they have either a clinic or a hospital that is within reach at any time. Unfortunately, those schools that have clinics do not have permanent nurses employed. Student medics are trained to take care of them. This is a very sad situation, but one that cannot be helped considering the acute shortage of medical personnel in the country. None of the schools have a permanently employed counselor. Those schools who reported having a career master, the career masters are appointed by the principal; he is a member of the teaching staff. None of these schools are co-educational. This is a depiction of the nature of the society, very stereotyping to women.

The response to question number twenty-two is very similar in all cases. Question: What in your opinion is the major problem of teaching

in this area? The response was unanimous that lack of qualified teachers and inadequate tools and equipment pose a lot of problems.

In summing up the response to question number twenty-six of the questionnaire, three problem areas were identified:

1. Lack of adequate tools and equipment. More needs to be done to supply the schools with tools and equipment.
2. Lack of qualified teachers to teach. More teachers need to be trained.
3. Lack of good condition of service. The civil service should provide the proper atmosphere to attract qualified people into the teaching profession.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

Introduction

In order to facilitate the use of this study, a summary of the findings is given in this chapter. The data is treated in two ways, according to the group as a whole to show the comparison of the groups and the trend of the states. The difference from state to state is not emphasized because it was felt that all the northern states have identical problems in regards to technical education. At this juncture, the author would like to point out those states that seemed to be doing all they could to improve their people technologically -- Kano, Gongola, Sokoto, Kaduna, and Plateau States. The recommendation for vocational and technical education will be included in this chapter.

Summary

The history of a nation reveals very much about that nation; the path the country has gone through and the trends of events that have shaped the country's economic progress. Nigeria and Nigerians have a long history of a feeling of apprehension when it comes to vocational and technical education which stresses the use of hands. This is traceable to the way western education was introduced into the country and its ramifications.

The stability of a country and other governmental policies have direct influence on the country's educational progress. After receiving her independence from Britain, Nigeria experienced leadership upheavals. This leadership struggle has affected educational development, an example can be seen from the data from 1971 to 1976 when only one school was opened. This was during the Nigerian Civil War period. Many existing schools in the eastern region were destroyed. A type of retardation of progress.

The study was supposed to cover all the vocational schools, the secondary technical schools, and the purely technical schools in the ten northern states. However, only six states, with a total number of 25 schools, were represented. Forty-five teachers returned their questionnaires. In analyzing the data, it was found that the schools that responded are either vocational schools, secondary technical schools, or technical training colleges. This was expected.

Most of the teachers have academic qualifications that will enable them to teach in these schools; however, they fall short in the practical experience. Because most of these schools have just been recently opened, is the reason why many of the teachers have not spent more than one year to two in them.

The five prominent subjects being offered in these schools are woodwork, metalwork, technical drawing, automechanics, and electricity. A good number of the teachers have had a considerable teaching experience.

Although most of these schools were just started within the past five years, the student enrollment number is very alarming. It shows the students' interest in vocational technical education as Uka (1974)

indicated (see page 14). This is not to overlook the one school that did not report any increase in student enrollment and the other school which showed a decrease in student enrollment.

Most of the schools did not have visual aids and the procedure for providing funds or equipment to the schools was very crude.

Many of these schools have an acute shortage of teachers and the supply of tools and other equipment is very inadequate. From the teachers' remarks, it seems that they are generally dissatisfied with the way the programs are being operated.

Recommendations

After a careful study of technical education in the ten northern states of Nigeria, the author would like to present the following recommendations. Recognition of the physical, human, and financial limitations for the advancement of technical education programs is acknowledged and the recommendations are made with due respect to the administrators, both at state and local levels, who have much to do with the advancement of the educational system of all these states.

State Objectives

The objectives of vocational technical education should be established for each of the states and clearly stated as to enable the lowest teacher in rank to interpret. These objectives should be flexible so as to meet the needs of the students and the community using locally available resources and materials.

Course of Study

A course of study should be established for each type of vocational and technical program. This course of study should be revised from time to time within a reasonable period of time in order that the department may keep abreast with the continuous changes in the field.

Supervision

Apart from the chief education officers, who spend their whole time at state headquarters, state supervisors of technical education and more state technical supervisors should be trained. The functions of these inspectors would be to coordinate the programs of each state and bring to the classroom teacher pertinent information concerning the different programs and their progress. They (the inspector or supervisors) should be experienced technical teachers who know the problems in the fields.

Advisory Committee

Any vocational or technical education program can hardly be successful without advisory committees to advise on policy and what should be done. It is my opinion that each state should establish an advisory committee on vocational and technical education. The duties of this committee would be, in addition to what was stated above, to advise on the nature of economic trends and manpower needs of the individual states. The committee should work under the direction of the state supervisor. A recommended membership for the committee are as follows:

Two teachers from a small city school.
 Two teachers from a large city school.
 One inspector of technical education from a small city school.
 One inspector of vocational technical education from a large city school
 Two heads of departments from technical colleges.
 Two heads of departments from a polytechnic.
 One representative from the state university of each state.
 Chief technical education officers of each state.
 Two industrial representatives from the community.
 A supervisor of curriculum.

Textbooks

Textbooks should be adopted and used throughout every state. The courses of study should be built around the textbooks adopted by each state. Texts should be chosen for all types of courses in vocational and technical schools that are offered throughout each of the states.

New Departments

New departments and courses should be developed or established in order to meet the needs of the high percentage increase in the enrollment of students.

Shops and Laboratories

The general shop lends itself to the secondary technical schools where the choice of study in a technical area is optional. It takes less equipment and it is cheaper to establish a good shop of this nature. However, if the vocational schools are to be successful, they very much need to be equipped.

State Requirements

Drawing is the most universal language of communication to use today. A glance at a textbook, a magazine, or any newspaper will show

that drawing is an indispensable part of any vocational or technical program. It should, therefore, be taught in all the schools. It should be required that, apart from their course work, a year or two course work should include drawing.

Technical Teachers

The present National Certificate in Education Technical is a very good one for technical teachers. People from other engineering fields who intend to join the teaching profession should be made to take some educational courses to prepare them for the task of teaching.

Advanced Training

National Certificate in Education Technical teachers, who desire to advance their studies, should be given opportunity in the universities to pursue a Bachelor of Science degree in their teaching specialization. The Ahmadu Bello University or the University of Nigeria, Nsukka, have started these programs. It is hoped that they will expand the departments to increase the enrollment figure. This should also include graduate work.

Teachers' Salaries

Salaries should vary according to the qualifications and experience of the teachers with the promise of advancement. However, conditions of service for teachers and other remuneration should be improved.

Technical Education and Primary Schools

Vocational and technical education should be developed in the primary schools. This may be in the form of career education or industrial art education. The present course in primary school, known as hand craft, is a good base.

Further Research

The author is not very satisfied with the outcome of this research. It is his wish that it was more detailed than this; however, it paves the way for curious questions like what has the country done in regards to vocational and technical education.

The following subjects are areas that a detailed study will prove helpful.

1. A detailed study of the course offerings in the schools.
2. Students' views of vocational and technical education.
3. Teacher education institutions and their relationship with industries.
4. Curricula of vocational and technical schools.
5. Placement of graduates from the programs.
6. Problems concerning the establishment of vocational programs in primary schools.

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APPENDIX A

LETTER TO THE RESPONDENTS

International Students Office
Oklahoma State University
315 Student Union
Stillwater, Oklahoma 74074
U.S.A.
February 2, 1982

Dear Sir,

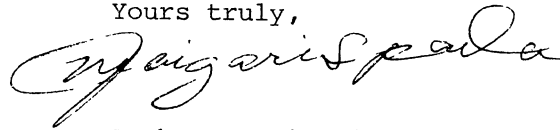
I am student of Industrial Arts Education at Oklahoma State University. I am writing my Masters degree thesis on this subject. "The History and Status of Technical Education in Nigeria with Special Reference to the Ten Northern States." I appeal to you for your assistance to make this study a success. Your background and experience qualify you as the professional source I must have to get an accurate picture of these programs in the Secondary Schools of the Ten Northern States.

An attempt is being made to locate the weak points in the implementation of technical education and to reveal the actual problem areas encountered by teachers. Your cooperation in completing the enclosed questionnaire will be highly appreciated. Information about your particular situation will provide a basis for improvements in the overall technical education program.

I strongly feel that the subject and inquiry are worthy of your time and attention and of course, I will consider any help you can give me as a personal favor.

Please return the completed questionnaire to the Permanent Secretary, Ministry of Education of your state not later than ten (10) days from the date you receive this questionnaire.

Yours truly,

A handwritten signature in cursive script, appearing to read 'Ayuba A. Maigari', written in dark ink.

Ayuba A. Maigari

Approved: Dr. Harold H. Polk
Faculty of Industrial Arts Education
Oklahoma State University
Stillwater, Oklahoma
U.S.A.

APPENDIX B

LETTER TO THE CHIEF EDUCATION OFFICERS
(TECHNICAL) THROUGH THE PERMANENT
SECRETARIES

International Student Office
Oklahoma State University
315 Student Union
Stillwater, Oklahoma 74078
U.S.A.

February 10, 1982

The Permanent Secretary
ATTENTION: C.E.O. (Technical)

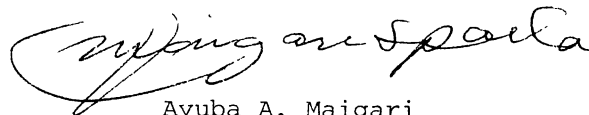
A research study is being conducted on this topic "The History and Status of Technical Education in Nigeria with Special Reference to the Ten Northern States."

Twenty (20) respondents are required from your state. One of these respondents must be the principal from Technical Schools, Secondary Technical Schools, Vocational Schools, and other Secondary Schools that have technical departments.

Result of the finding of this study will be mailed to you as soon as the study is completed.

Thank you.

Yours faithfully,



Ayuba A. Maigari
Graduate Student
O.S.U.

AAM:jn

APPENDIX C

COPY OF QUESTIONNAIRE

Direction: Please answer the following questions to the best of your ability as they apply to your situation.

Name of Respondent _____ Position _____

Address _____ Date _____

Name of School _____

Division _____ State _____

1. What is your educational level? _____

2. Your age? _____

3. How long have you been in this school? _____

4. Was the school originally a trade school? _____ If not, when was the technical department introduced? _____

5. What technical subjects were offered when the department was opened?

6. What other technical subjects have been included since then?

7. What is your field of specialization? _____

8. Your years of teaching experience? _____

9. Have you ever worked in an industry? _____

If yes, would you please supply the following information:

Years in Industry	Position Held	Name of Industry

10. What year was this school opened? _____ What was the enrollment number? _____ How many students are currently enrolled in the school? _____
11. Are all technical courses in your school optional? _____
If not, which courses are required? _____
12. Is your school co-educational? _____ If yes, are girls allowed to take technical courses? _____
13. How many hours lecture _____ Workshop practice _____ do you have a week?
14. Supply the information asked for in the following teaching schedule:

Period	Time	Subject	No. of Class	Textbook, if any
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

15. What teaching aids do you use: (check) (a) Visual Aids _____,
(b) Models _____, (c) Overhead Projector _____, (d) T.V. Set _____,
(e) Others _____
16. Are you given a yearly budget for buying tools and supplies?

16. If yes, how much _____
17. What is the size of your shop? Length _____ Height of Ceiling
 _____ Width _____
18. Does your shop have in it (a) Tool Room? _____ Lecture Rm? _____
19. How many industries, other than school shops, did your class visit
 last year? _____
20. Please submit the following information concerning the machines
 used by students for learning purposes in your shop.

Name of Machine	Make	Number of Machine	Size of HP Rating
-----------------	------	-------------------	----------------------

Machine Lathe			
---------------	--	--	--

Wood Lathe			
------------	--	--	--

Circular Saw			
--------------	--	--	--

Band Saw			
----------	--	--	--

Jointer			
---------	--	--	--

Drill Press			
-------------	--	--	--

Jig Saw			
---------	--	--	--

Surfacer			
----------	--	--	--

Mortiser			
----------	--	--	--

Tool Grinder			
--------------	--	--	--

Router			
--------	--	--	--

Shaper			
--------	--	--	--

Arc Welding			
-------------	--	--	--

Oxy Arc Welding			
-----------------	--	--	--

Others			
--------	--	--	--

21. Do you consider these equipments, tools and materials adequate for teaching this course? _____ If not, what equipment, tools, and materials do you need most. _____
- _____
- _____
22. What in your opinion is the major problem of teaching in this field?
- _____
- _____
23. What medical facility is readily accessible to your school (check one). (a) Hospital _____ (b) Dispensary _____ (c) Clinic _____
24. Does the school have its own clinic or dispensary? _____
- _____
25. Does the school have a permanently employed nurse? _____
Academic Counselor? _____ Career Master? _____ Write yes or no where applicable.
26. May I have your suggestions for improvement, correction, or solutions in these major problem areas.
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____

APPENDIX D

LIST OF VOLUNTARY AGENCIES

(a) List of Voluntary Agencies
having the Status of Approved Voluntary
Agency in 1948, and (b) List of Voluntary
Agencies Running Schools in 1964.

(a) List of Voluntary Agencies having the Status of Approved
Voluntary Agency in 1948

<i>Region</i>	<i>Voluntary Agency</i>	
Eastern and Western Regions, Lagos and Colony	Roman Catholic missions	
	Anglican Church and Missions, including the Diocese of Lagos and C.M.S. Yoruba Mission, Diocese of the Niger and C.M.S. Niger Mission	
	Presbyterian Church of Biafra and Church of Scotland Mission	
	Methodist Mission	
	Baptist Convention and Baptist Mission (Southern Baptist Convention of U.S.A.)	
	Cameroons Baptist Mission (Northern Baptist Con- vention of U.S.A.)	
	Native Baptist Mission	
	Basel Mission	
	Qua Ibo Mission	
	Salvation Army	
	African Church	
	Ansar-Ud-Deen Society	
	Talim-ul-Islam Ahmadiyya	
	Moslem Schools, Ijebu-Ode	
	Lutheran Mission	
	Seventh Day Adventist Mission	
	United African Congregational Church	
	United Native African Church Mission	
	Apostolic Church Schools, Ilesha	
	Swedenborg Memorial Church	
	New Church Mission	
	Christ Army Church	
	Proprietor, Aggrey Memorial College, Arochuku	
	Proprietor, Henshaw Town School, Calabar	
	Northern Provinces	Anglican Church, including the Archdeaconry of the North and C.M.S. Northern Nigeria Mission
		Sudan United Mission
		Sudan Interior Mission
Roman Catholic Mission		
Church of the Brethren Mission		
Dutch Reformed Church Mission United Missionary Society		

Methodist Mission
 Baptist Mission
 United Native African Church Mission
 African Church
 Qua Ibo Mission
 Seventh Day Adventist Mission
 Apostolic Church

(b) List of Voluntary Agencies Running Schools in 1964

African Church
 African Methodist Episcopal Zion Mission
 Ahmadiyya Movement
 Ansar-Ud-Deen Society
 Apostolic Church
 Assemblies of God
 Baptist
 Benin Baptist
 Christ Apostolic Church
 Church of Brethren Mission
 Church Missionary Society (Anglican)
 Community Voluntary Agency
 Government
 Islamic Mission
 Local Authority
 Methodist
 Native Authority
 Nawar-Ud-Deen Society
 Niger Delta Diocese
 Nigeria Social Development Society
 Pilgrim Baptist
 Presbyterian Church of Nigeria
 Private Nigerian proprietors
 Other Muslim societies
 Other voluntary agencies
 Qua Ibo Mission
 Roman Catholic Mission
 Salvation Army
 Seventh Day Adventist
 Sudan Interior Mission
 Sudan United Mission
 United Mission Society
 United Native African Mission
 Zion Methodist
 Zumratul Islamic Society

APPENDIX E

REPORT ON TECHNICAL COLLEGE ORGANIZATION

FOR NIGERIA APRIL, 1949

Report on Technical College Organisation for Nigeria, 2 April 1949

Members

W. A. Thorp—Chief Inspector of Technical Education, Nigeria
F. J. Harlow—Principal, Chelsea Polytechnic, London

An Inter-University Council Delegation of 1946-7 had recommended in its report that colleges of higher education, additional to a university college, should be established in Nigeria; and referred to these institutions as 'regional colleges'. No details of the organisation of the proposed colleges and few of the needs they were to satisfy were included in the report. Mr Harlow and Mr Thorp were therefore selected by His Excellency, Sir John Macpherson, to look into these things.

Terms of Reference

1. To make an assessment of the need for establishing a college or colleges of higher technical education with provision for training for the social services.
2. To advise on the organisation and location of those colleges.
3. To indicate how the new college organisation and the institutions for technical education provided under the ten-year development plan can be integrated into a complete technical education structure.

Recommendations

1. A 'Nigerian College of Arts, Science and Technology' should be established with branches at Ibadan, Zaria, Enugu under unified control. Initially, the Ibadan Centre should be the most highly developed.
2. The college must provide all the forms of higher education of non-university character which the territory requires.
3. Courses run in conjunction with departmental schools and training within industry must take a prominent place in the organisation. In most cases, the 'sandwich' type of training will probably prove most suitable.
4. The entrance standard should in general be that of the School Certificate examination.
5. The college should have a semi-autonomous constitution in which the principal and college council would be responsible for everything except the broadest outline of the Education department.
6. The development programme for secondary schools should include

- provision for technical secondary as well as for traditional secondary grammar schools, and greater provision should be made for science, arts, handicrafts and physical education in both primary and secondary schools.
7. Provision must be made as a matter of extreme urgency for the training of secondary school teachers as well as for an increase in the number of trained primary and infant school teachers. The technical colleges should include departments for the training of an adequate number of non-graduate secondary school teachers to supplement graduate teachers from the university college.
 8. The technical college should undertake the training of youth leaders and community centre workers and stress extra-mural work in community education. It should assist in the drive for community development.

APPENDIX F

REPORT ON THE FEDERAL ADVISORY COMMITTEE ON
TECHNICAL EDUCATION AND INDUSTRIAL
TRAINING, 1957

Report of the Federal Advisory Committee on Technical Education and Industrial Training, 1957

Members

D. A. Russell - Chairman, Federal Adviser on Technical Education
 J. W. Murray - Representing the Director of Broadcasting
 M. Landreth - Representing the Director of Commerce and Industry
 P. A. Thompson - Representing the Director of Federal Public Works
 A. G. Baker - Representing the Director of Posts and Telegraph
 G. Foggon - Commissioner of Labour
 J. L. King - General Manager E.C.N.
 E. S. William - Representing the General Manager, Ports Authority
 G. H. Binnie - Representing the General Manager, Nigerian Railway
 Corporation
 E. C. Faley
 D. W. C. Shaw
 F. E. Turton Hart
 L. U. Agonsi - Representing trade unions

} Representing the Lagos Chamber of Commerce

Terms of Reference

1. To advise the Minister on the development and training, including the common training, required to meet industrial and commercial needs.
2. To carry out an examination of technical education in the areas of:
 - (i) an assessment of the number and categories of trained persons required to meet the needs of industry and commerce during, say, the next five years;
 - (ii) a broad indication of the nature of training required for such persons;
 - (iii) recommendations to the government concerned as to modifications necessary to existing technical institutions and additional ones required to meet the needs of each area.

Duration of the Committee Sitting

December 1955-February 1957

Recommendations

1. An annual intake of trainees to Yaba Trade Centre should be introduced instead of recruitment at the end of the course as is the current practice.
2. Yaba Trade Centre should co-operate with the smaller employers who are unable to undertake full apprenticeship training in a joint apprenticeship scheme for craftsmen whereby practical and supplementary theoretical training will be given in the Trade Centre during the first three years of training followed by two years' training in industry.
3. A joint training scheme for artisans similar to that of craftsmen with a uniform period of training of three years throughout all groups made up of one year in Yaba Trade Centre followed by two years in industry should be introduced.
4. Yaba Trade Centre should at least double its present training potential with the emphasis on those trades for which the demand is greatest. This would increase the number under training from approximately 320 to 700.
5. Yaba Trade Centre should be non-residential to allow for more workshops and classrooms under the new joint scheme of training.
6. There should be inducement by way of realistic salaries to achieve the desired qualified instructional staff.
7. There should be a uniform period of training of five years for all craftsmen.
8. A government-sponsored apprenticeship training committee should be set up to determine those organisations willing and able to train apprentices.
9. Courses in radio mechanics, mechanical trades, electrical trades, building trades, refrigeration trades in Yaba Technical Institute should have intakes to train for the City and Guilds of London Institute qualification.
10. Courses in supervisory techniques suitable for chargemen, assistant foremen, foremen, and similar categories should be established in Yaba Technical Institute as soon as possible.

APPENDIX G

TABLE SHOWING THE GROWTH OF TECHNICAL
AND VOCATIONAL EDUCATION,
1959 - 1966

Table showing the Growth of
Technical and Vocational Education, 1959-1966

Number of Schools, Number of Teachers and Pupils by Sex

Year	No. of Schools	Teachers			Pupils			Average Number of Pupils	
		M	F	MF	M	F	MF	Per School	Per Teacher
NORTH									
1959	12	174	1	175	1,309	—	1,309	109	7
1960	14	178	2	180	2,012	—	2,012	144	11
1961	16	212	2	214	2,401	—	2,401	150	11
1962	16	209	3	212	2,608	—	2,608	163	12
1963	16	219	7	226	2,658	—	2,658	166	12
1964	16	226	11	237	2,703	—	2,703	169	11
1965	18	224	12	236	2,884	72	2,956	164	13
1966	16	248	6	254	2,920	—	2,920	183	11
EAST									
1959	7	46	1	47	698	30	728	104	16
1960	9	55	1	56	863	13	876	97	16
1961	9	65	—	65	1,275	34	1,309	124	17
1962	8	61	1	62	1,527	44*	1,571	192	25
1963	7	68	3	71	1,643	45*	1,688	241	24
1964	10	77	2	79	1,649	90	1,739	174	22
1965	15	144	64	280	2,153	122	2,375	158	19
1966	23	160	38	198	2,475	805	3,280	143	17
WEST									
1959	4	39	8	47	168	79	247	62	5
1960	4	36	—	36	137	57	194	49	5
1961	4	29	—	29	399	55	454	114	16
1962	6	57	—	57†	971	93	1,064	177	15
1963	6	54	1	55	695	80	775	129	14
1964	6	57	1	58	756	59	815	136	14
1965	12	63	14	77	1,070	186	1,256	105	16
1966	12	99	17	116	1,358	296	1,654	138	14
LAGOS									
1959	2	72	1	73	1,776	5	1,781	891	24
1960	2	78	1	79	1,927	28	1,955	978	25
1961	2	66	5	71	1,817	42	1,859	927	26
1962	2	74	5	79	1,951	47	1,998	949	25
1963	2	85	5	90	2,161	73	2,234	1,117	25
1964	3	82	4	86	2,341	104	2,445	815	29
1965	3	93	6	99	2,130	195	2,325	775	24
1966	3	114	7	121	2,299	232	2,531	844	21

Year	No. of Schools	Teachers			Pupils			Average Number of Pupils	
		M	F	MF	M	F	MF	Per School	Per Teacher
NIGERIA									
1959	25	331	11	342	3,951	114	4,065	163	12
1960	29	347	4	351	4,939	98	5,037	174	14
1961	31	372	7	379	5,892	131	6,023	194	16
1962	32	401	9	410	7,057	184	7,241	226	18
1963	31	426	16	442	7,157	198	7,355	237	17
1964	39	554	19	573	9,651	260	9,911	254	17
1965	63	663	97	760	11,913	733	12,646	201	17
1966	73	719	70	789	13,647	1,412	15,059	206	19
MID-WEST									
1964	4	112	1	113	2,202	7	2,209	552	20
1965	15	139	1	140	3,676	58	3,734	249	27
1966	19	98	2	100	4,595	79	4,674	246	47

*Including 34 (1962) and 45 (1963) secretarial students in the Women's Occupational Training Centre, Aba, which is a teacher-training college.

†Excluding teachers of the Technical College, Ibadan. The average number of pupils per teacher has been calculated with the exclusion of pupils in this college.

Table derived from *Statistics of Education, 1963 and 1966* (Lagos, Federal Office of Statistics).

APPENDIX H

TABLE SHOWING PRIMARY SCHOOL, SECONDARY SCHOOL,
TECHNICAL AND VOCATIONAL SCHOOL, AND
TEACHER EDUCATION ENROLLMENT

FIGURES

Tables showing Primary School,
Secondary School, Technical and Vocational
School, and Teacher-Education Enrolment
Figures

(a) *Primary School Enrolment Figures by Regions, 1937-1966, and Total for all States, 1970*

	<i>East</i>	<i>Lagos</i>	<i>North</i>	<i>West</i>	<i>Total</i>
1937					238,879
1947	320,000	—	66,000	240,000*	626,000
1951	500,000	—	107,561	395,000*	1,002,561
1952	518,944	—	122,615	398,100*	1,039,659
1953	572,705	—	143,809	429,542*	1,146,056
1954	664,707	—	153,696	456,600*	1,275,003
1955	742,542	37,038	168,521	811,432	1,759,533
1956	904,235	38,872	185,484	908,022	2,036,613
1957	1,209,167	50,182	205,769	982,755	2,447,873
1958	1,221,272	56,688	229,164	1,037,388	2,544,512
1959	1,378,403	66,320	250,912	1,080,303	2,775,938
1960	1,430,514	74,468	282,849	1,124,788	2,912,619
1962	1,266,566	98,511	359,934	1,108,999	2,834,010
1963	1,278,706	107,552	410,706	1,099,418	2,896,382
1964	1,173,277	119,013	452,319	1,104,879†	2,849,488
1965	1,199,692	129,894	492,829	1,089,327†	2,911,742
1966	1,236,872	142,118	518,864	1,128,127†	3,025,203
1967-9 WAR YEARS - NO FIGURES AVAILABLE					
1970 FIGURE FOR ALL STATES					3,515,827

* West figures include Lagos enrolment until 1955.

† West figures include Mid-West Region from 1964 to 1966 (though Mid-West Region was created in 1964).

(b) Secondary School Enrolment Figures, 1926-1970

	East	Lagos	North	West	Total
1926					518
1937					3,851
1947					9,908
1952	8,644	—	3,249	(not available)	(not available)
1953	9,182	—	(not available)	7,325	(not available)
1954	9,544	—	2,382	9,259	21,185
1955	10,584	3,157	2,671	10,935	27,347
1956	11,118	3,904	3,263	12,621	39,017
1957	12,242	4,087	3,651	16,208	36,188
1958	13,960	4,591	4,086	18,754	41,391
1959	15,789	4,804	4,683	22,374	47,650
1960	18,263	4,953	6,264	25,755	55,235
1962	32,712	10,058	7,995	144,734	195,499
1963	39,938	11,372	9,881	150,688	211,879
1964	47,806	12,633	12,885	131,688	205,012*
1965	58,556	13,535	15,276	121,648	209,015*
1966	68,737	14,088	17,700	110,780	211,305*
1967-9 WAR YEARS - NO FIGURES AVAILABLE					
1970	ALL STATES				310,054

* West figures include Mid-West Region from 1964 to 1966 (though Mid-West Region was created in 1964).

(c) Technical and Vocational School Enrolment Figures, 1962-1970

Year	Government Schools		Local Authority Schools		Aided Schools		Unaided Schools		All Schools	
	No. of Schools	No. of Pupils	No. of Schools	No. of Pupils	No. of Schools	No. of Pupils	No. of Schools	No. of Pupils	No. of Schools	No. of Pupils
NIGERIA										
1962	26	6,579	—	—	1	138	5	527	32	7,241
1963	26	6,721	—	—	1	140	4	494	31	7,355
1964	27	7,055	—	—	1	148	7	673	39	10,085
1965	—	—	—	—	—	—	—	—	63	12,756
1966	29	7,855	6	626	2	725	29	5,853	66	15,050
1967-9 WAR YEARS - NO FIGURES AVAILABLE										
1970	42	7,353	2	183	17	5,049	4	836	65	13,421

(d) Teacher-Education Enrolment Figures, 1962-1970

Year	No. of Schools (a)	Teachers			Pupils			Average Number of Pupils	
		M	F	MF	M	F	MF	Per School	Per Teacher
NIGERIA									
1962	287	1,558	499	2,057	23,715	7,455	31,170	109	15
1963	266	1,548	504	2,052	24,586	7,753	32,339	122	16
1964	257	1,411	499	1,910	23,645	7,409	31,054	119	16
1965	195	—	—	1,925	23,323	7,603	30,926	159	16
1966	193	1,349	488	1,837	22,847	7,646	30,493	158	17
1967-9 WAR YEARS - NO FIGURES AVAILABLE									
1970	160	1,491	366	1,857	—	—	32,314	202	18

VITA ³

Ayuba Adidon Maigari

Candidate for the Degree of

Master of Science

Thesis: HISTORY AND STATUS OF TECHNICAL EDUCATION IN NIGERIA WITH
SPECIAL REFERENCE TO THE TEN NORTHERN STATES

Major Field: Industrial Arts Education

Biographical:

Personal Data: Born in Idon Kachia Administrative Area, June 23,
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Education: Graduate from Kawo Baptist Day School, Kaduna, 1966
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