NEEDS ASSESSMENT OF TECHNICAL COLLEGES IN DELTA STATE

BY

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2000

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A THESIS SUBMITTED TO THE POSTGRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF EDUCATION (BUSINESS EDUCATION)

DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION
FACULTY OF EDUCATION
AHMADU BELLO UNIVERSITY
ZARIA, NIGERIA.

2000

DECLARATION

I hereby declare that this thesis had been written by me and that it is a record of my own research work. It has not been presented in any previous application for a higher degree. All quotations are indicated by quotation marks and the sources of information are specifically acknowledged by means of references.



.....

Omolu, Odili Benjamin

3/10/2000

.....

Date

CERTIFICATION

VOCATIONAL AND TECHNICAL EDUCATION DEPARTMENT
AHMADU BELLO UNIVERSITY
ZARIA.

This Thesis entitled "NEEDS ASSESSMENT OF TECHNICAL COLLEGES IN DELTA STATE", submitted by Omolu, Odili Benjamin meets the regulations governing the award of the degree of Master of Education (M.Ed) in Business Education of the Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This research work is dedicated to my beloved wife, Maria and my darling daughter, Ishioma, both of them missed my fatherly care during this period of struggle for academic achievement.

ACKNOWLEDGEMENT

The Researcher wishes to express his profound gratitude to all those who in one way or the other, and at different times contributed to the successful completion of this research work.

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Any shortcomings and errors in this research report are entirely the Researcher's responsibility.

Finally, the Researcher wishes to express his gratitude to his darling wife for taking care of the home during the period of the research.

ABSTRACT

The aim of this study was to identify the important resources needed for VTE programme, assess the adequacy of available resources in the Technical Colleges and identify factors affecting academic performance in the colleges, obtain a situational report and make recommendations to improve the skills and academic standard of VTE programme in the Technical Colleges in Delta State. All the six government owned Technical Colleges in Delta State were involved in this study. Out of the 327 population within these schools, 251 were used. This number was made up of 174 Vocational III final year students, 62 VTE Subject Teachers and 15 Administrators. These variables formed the three groups of respondents that answered the same questionnaire directly administered by the researcher. Four research questions raised were answered and the four Null Hypothesis formulated were tested at 0.05 level of significance. ANOVA was the major statistical tool used to analyse the data. The study identified ten important resources needed for the VTE programme in the Technical Colleges. The study also revealed that the most important resources are inadequate in the colleges. It was revealed in this study of the poor academic performance of the colleges in NABTEB's examinations due mainly to lack of important resources, poor attitude to work by Teachers, lack of supervision and poor academic background of students. It was found that student enrolment was dwindling in the colleges due mainly to the refusal of Secondary School Principals to release JSS III graduates for Technical Colleges. Scarcity of VTE Teachers was attributed to poor condition of service of Teachers, better remunerations in other sectors of the economy and embargo on employment by the State government. The study also revealed that the public still perceive Technical Education as meant for drop-outs from the secondary schools. The study also revealed that the

colleges do not have P..T.A. It was found that workshop practice is very irregular in the colleges due mainly to lack of electricity supply, consumable materials and equipment. The study also found that there were abandoned Steel Workshops numbering over eight, uncompleted in each of the Technical Colleges. Based on some of these findings, it was recommended among others that the State Ministry of Education should complete the abandoned steel workshops and provide the essential resources that are lacking in the colleges. The colleges to form P.T. A., run JSS pre-vocational programme and principals of secondary schools to release JSS III graduates who are interested in Technical Education. It was also recommended that stand-by Generators be supplied to the colleges as a supplement to NEPA. The condition of service of Teachers should also be made attractive. Finally, it was suggested that further scientific investigations be conducted on any other areas not covered by this study.

TABLE OF CONTENTS

			PAGE
TITLE PAGE		-	i
DECLARATION		-	ii
CERTIFICATION		-	iii
DEDICATION		-	iv
ACKNOWLEDGEMENT		-	v
ABSTRACT		-	vi
TABLE OF CONTENT		-	viii
LIST OF TABLES		-	x
LIST OF APPENDICES		-	xi
ABBREVIATIONS		-	xii
CHAPTER ONE:	INTRODUCTION		
1.0	Introduction	-	1
1.1	Background Information to the Study	-	2
1.2	Statement of Problem	-	2
1.3	Research Objectives	-	4
1.4	Research Questions	-	5
1.5	Research Hypothesis	-	5
1.6	Significance of the Study	-	5
1.7	Scope of Study	-	6
CHAPTER TWO:	REVIEW OF RELATED LITERATURE		
2.1	Introduction	-	8
2.2	National Policy on Education	-	8
2.3	Vocational Technical Education in Nigeria	-	12
2.4	Enrolment into Technical Colleges	-	16
2.5	Staffing of Vocational Technical Colleges	-	17
2.6	Supply of Equipment and Materials	-	20
2.7	Financing of VTE programmes	-	22
2.8	Provision of Facilities	-	24
2.9	Obsolete Nature of the VTE Curriculum	-	25
2.10	Textbooks and Materials	-	28
2.11	Guidance Counsellor	-	29
2.12	Evaluation - Continuous Assessment	-	32
2.13	Empirical Studies	-	33
2.14	Summary	-	35

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1	Introduction	-	37
3.2	Research Design Adopted	-	37
3.3	Population of Study	-	37
3.4	Sample Size and Sample Procedure	-	39
3.5	Method of Data Collection	-	41
3.6	Pilot Study	-	43
3.7	Method of Data Analysis	-	45
3.8	Summary	-	45

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.0	Introduction	-	46
4.1	Personal and Demographic Information	-	46
4.2	Answering Research Questions	-	50
4.3	Testing Research Hypothesis	-	57
4.4	Summary	-	61

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1	Introduction	-	62
5.2	Summary of Findings	-	62
5.3	Conclusions	-	64
5.4	Recommendations	-	65
5.5	Recommendations for further research	-	70
5.6	Implication for classroom instruction	-	70
	References	-	71
	Appendices	-	77

LIST OF TABLES

			PAGE
2.1	Delta State Technical Colleges, Enrolment from 1995 to 1999	-	16
3.1	Population of Study	-	38
3.2	Determination of Sample Size for the Study	-	40
3.3	Selection of a Stratified Sample for Group III	-	41
4.1	Designations of Respondents	-	46
4.2	Qualifications of Respondents	-	47
4.3	Area of Specialisation/Studies by Respondents	-	48
4.4	Teaching Experience of Respondents	-	49
4.5	Population of Schools of Respondents	-	50
4.6	Resources Needed for VTE programme in the Technical Colleges in Delta State	-	51
4.7	Resources available in the Technical Colleges in Delta State	-	52
4.8	Academic Performance of the Technical Colleges	-	54
4.9	Measures to improve academic standards in the Technical Colleges	-	55
4.10	Analysis of Variance for $Ho^{(1)}$	-	57
4.11	Analysis of Variance for $Ho^{(2)}$	-	58
4.12	Analysis of Variance for $Ho^{(3)}$	-	59
4.13	Analysis of Variance for $Ho^{(4)}$	-	60

LIST OF APPENDICES

			PAGE
1 (a)	NABTEB's Examination Results from 1995 to 1999	-	77
(b)	Table for Determining Sample Size from a given population	-	78
2.	Data used for Research Questions	-	79
3 (a)	Principals response scores to Variable One	-	80
(b)	Teachers response scores to Variable One	-	81
(c)	Students response scores to Variable One	-	82
4 (a)	Principals response scores to Variable Two	-	83
(b)	Teachers response scores to Variable Two	-	84
(c)	Students response scores to Variable Two	-	85
5 (a)	Principals response scores to Variable Three	-	86
(b)	Teachers response scores to Variable Three	-	87
(c)	Students response scores to Variable Three	-	88
6 (a)	Principals response scores to Variable Four	-	89
(b)	Teachers response scores to Variable Four	-	90
(c)	Students response scores to Variable Four	-	91
7.	Computation of ANOVA for (Ho-1,2,3,4) Unit. NAPRI, Shika	-	92
8.	Letter of Introduction from HOD, VTE Dept. A.B.U., Zaria	-	93
9.	Letter of Introduction from the Ministry of Education, Asaba, Delta State	-	94
10.	Permission to conduct a Research from the Ministry of Education, Asaba, Delta State	-	95
11.	List of Schools Visited	-	96
12.	Questionnaires for the three groups of respondents	-	97

ABBREVIATIONS

NPE:	National Policy on Education
VTE:	Vocational Technical Education
UPE:	Universal Primary Education
ANCOPSS:	All-Nigerian Conference of Principals of Secondary Schools
NAPTECON:	National Association of Principals of Technical Colleges in Nigeria
NBTE:	National Board for Technical Education
NABTEB:	National Business and Technical Examination Board
NBC:	National Business Certificate
NTC:	National Technical Certificate
ANBC:	Advance National Business Certificate
ANTC:	Advance National Technical Certificate
SSC:	Senior Secondary Certificate
JSS:	Junior Secondary Certificate
WAEC:	West African Examination Council
RSA:	Royal Society of Arts
C & G:	City and Guilds
TTTP:	Technical Teachers Training Programme
NCE:	National Certificate on Education
TTTC:	Technical Teachers Training College
TD:	Technical Drawing
FSLC:	First School Leaving Certificate

CHAPTER 1

INTRODUCTION

1.1 Background Information to the Study

Vocational Technical Education has witnessed rapid expansion in Nigeria in recent years. This expansion arose out of the need to keep up with the demand of ever-increasing industrial enterprises and preparing students to meet the challenges of a constantly changing technological development. Nigeria needs to produce quality technical manpower who can apply science and technology to a wide range of operations in product development, production, installation, testing, repair and maintenance. In the words of Ekanem (1997), "We need technicians to repair broken down equipments in the home, industry and offices. We need the technicians to repair the telephones, the lifts, the air conditioners, the radios, the television sets, the tractors, the bull-dozers, etc, that have stopped functioning due to technical faults." If Nigeria is to get an adequate supply of such trained technicians, then the study of vocational and technical education in schools should be accorded priority attention. Ekanem (1997) observed that "Vocational Technical Education provides the technical manpower that can adapt science and technology to change the country's economy for the better." The study of vocational and technical education could equip one with skills to engage in self-employment. Nowadays, the economic situation in the country has encouraged a maintenance culture, and this has provided more business for self-employed technicians and craftsmen.

From the colonial times, government had shown interest in vocational and technical education. The African Education Conference Report of 1952 and the Ashby Commission of April 1959, both emphasized on the importance of technical

education to the nation's economic development. The Ashby Commission recommended amongst others, the inclusion of skills or Vocational/Technical subjects in the curriculum of secondary schools. Emphasis was laid on the provision of qualified staff to teach the proposed skills subjects. According to Osuala (1995), "Vocational and Technical Education began as an organised sector of the educational system only in the late forties with the implementation of the ten-year Development Plan by the colonial government, when four main types of institutions were created: technical institutes, trade centres, handicrafts and domestic science centres. These were completely under government control."

Similarly, the National policy on Education (NPE, 1977) identified the importance of vocational and Technical education to Nigeria's economic growth. The Education policy which was reviewed in 1981, stipulates that the "Vocational Technical Colleges should be three years duration and the curriculum are restructured to give suitable opportunities for the youth to acquire skills for employment and self reliance. With the introduction of the NPE (1977), both the Federal and State government has contributed enormously towards the upliftment of Vocational Technical Education in the federation. This study, therefore, is an attempt to assess the needs of Technical Colleges in Delta State, provide situation report and make recommendations to improve the skills and academic standard of vocational technical colleges in Delta State,

1.2 Statement of Problem

The Federal and State governments of Nigeria has been showing interest in vocational technical education because of the need for skilled manpower to contribute effectively to the nation's technological development. According to

Obadoni (1988), "the Federal government imported and provided workshop equipment worth over N500 million for distribution to all the Technical Colleges and Junior Secondary Schools in the federation, to enhance the teaching of vocational Technical subjects in the schools." Under the NPE (1977), programmes, provisions was made for adequate supply of vocational technical teachers, infrastructural facilities, tools and equipment, funding and instructional materials, etc, to the Technical Colleges in Delta State and the Federation.

In spite of government's numerous effort to promote vocational technical education in Delta State, the Technical Colleges are still in a state of dilemma and wanton disrepair. The Colleges are no longer technically oriented for lack of workshop practice, many trades are no longer being taught for lack of teachers, instructors and demonstrators. The Colleges continued to register poor academic performance in NABTEB's, NTC and NBC certificate examinations and the graduands found it difficult to obtain jobs in their areas of specialisation due to lack of knowledge and skills of specialisation. According to Oghuma (1988), "acute shortage of Technical Teachers, workshops to house the various types of machines and equipment, funding and materials, etc, tend to threaten the VTE programme in the States of the Federation." As Fagbemi (1987) observed, "the President of the National Association of Principals of Technical Colleges of Nigeria (NAPTECON), had criticized the governments for its inability to provide adequate workshops, laboratories, science equipment, tools and equipment, teachers, consumable materials and instructional aid for the technical colleges."

A visit to any of the technical colleges in Delta State at first sight, reveals a state of abandoned and uncompleted steel workshops numbering over eight scattered all over the compound. The question is who abandoned the workshops and why?

The NBTE accreditation report of 1997 on the Technical Colleges in Delta State confirmed the degenerated state or lack of resources in the colleges. The NBTE (1997) accreditation report further revealed the dwindling student enrolment into the Technical Colleges and that most departments have been phased out for lack of students.

From the lamenting comments of the populace, NAPTECON and the NBTE, there is need to ascertain the current state of the Technical Colleges in Delta State, assess the adequacy of the available resources and recommend measures that will improve the standard of vocational technical education in the Technical Colleges in Delta State.

1,3 Research Objectives

The objectives of this study are to:-

a) identify the important resources needed for Vocational Technical Education programme in the Technical Colleges in Delta State;

b) assess the adequacy of the available resources in the Technical Colleges in Delta State;

c) examine the extent to which the adequacy/inadequacy of the available resources affect the academic performance of students in the Technical Colleges in Delta State;

d) find out ways of improving the skills and academic standard of VTE programme in the Technical Colleges in Delta State.

1.4 Research Questions

The following research questions will be answered in this study:

a) What are the important resources needed to carry on Vocational Technical Education Programme in the Technical Colleges in Delta State?

b) How adequate are the available resources in the Technical Colleges in Delta State?

c) What is the level of academic performance of your college in NABTEB's examinations?

d) What measures can be recommended to improve the skills and academic standard of Vocational Technical Education programme in the Technical Colleges in Delta State?

1.5 Research Hypothesis

The following Null Hypothesis are formulated and tested:

a) There is no significant difference in the responses of principals, teachers and students regarding the important resources needed for VTE programme in the Technical Colleges in Delta State.

b) There is no significant difference in the responses of the principals, teachers and students regarding the adequacy of the available resources in the Technical Colleges.

c) There is no significant difference in the responses of the principal, teachers and students regarding the factors affecting the academic performance of students in Technical Colleges in NABTEB's examinations.

d) There is no significant difference in the responses of the principals, teachers and students regarding the measures recommended to improve the skills and

academic standard of VTE programme in the Technical Colleges in Delta State.

1.6 Significance of the Study

It is hoped that based on the findings of this study, a situational report and recommendation which could improve the standard of VTE programme in the Technical Colleges in Delta State would be given.

The study is necessary because after 23 years of implementation of VTE programme under the NPE, the colleges are not seen to be viable and the Ministry of Education no longer carry out inspection of schools these days. The study therefore is expected to provide information to the government on the current state of the Technical Colleges in the State. It will highlight areas of needs in the Colleges and make recommendations for their improvement. It will also throw light on the causes and remedy of poor academic performance of the Colleges in external examinations.

This study will aid educational administrators and planners to identify areas that require greater attention so as to guide them for future investment on VTE programme in the colleges. This study will also be a useful contribution to the literature on Vocational Technical Education, provide data for educational planners and serve as a foundation work for further research at the national level.

1.7 The Scope of Study

The study was concerned with the needs assessment of the six State owned Technical Colleges in Delta State. The depth of needs assessment of the Technical Colleges in this study was confined to areas of identification of important resources

needed for the colleges, adequacy of the available resources in the colleges and factors affecting academic performance in the Technical Colleges.

In each of the schools used for this study, Principals, Vice Principals, VTE subject teachers and Vocational III final year students were involved. This was because within this specific scope, adequate information required for the scientific deductions on the topic under study could be obtained.

CHAPTER 2

REVIEW OF RELATED LITERATURE

2.1 Introduction

In order to obtain a situational report and establish a theoretical framework on the "Needs Assessment of Technical colleges in Delta State", efforts were made to review related literature under the following headings:

i) National Policy on Education (NPE)

ii) Vocational and Technical Education (VTE)

iii) Enrolment into Technical Colleges

iv) Staffing of VTE Colleges

v) Supply of Equipment and materials

vi) Financing of VTE programme

vii) Provisions of facilities

viii) Obsolete Nature of VTE Curriculum

ix) Text Books and Instructional Materials

x) Guidance Counsellors

xi) Evaluation - Continuous Assessment

xii) Empirical Studies

xiii) Summary

2.2 National Policy on Education

When the National Policy on Education (1977) was enunciated, it was to form the bedrock of a new policy on education for the nation which was as expected to

be oriented towards inculcating to the individuals the following values:

i) Respect for the worth and dignity of the individual

ii) Faith in man's ability to make national decisions

iii) Moral and spiritual values in interpersonal and human relations

iv) Shared responsibility for the common good of society

v) Respect for the dignity of labour, and

vi) Promotion of the emotional, physical and psychological health of all children.

For Nigeria's philosophy of education to be in harmony with Nigeria's national objectives, it has to be geared towards self-realisation, better human relationship, individual and national efficiency, effective citizenship, national consciousness, national unity, as well as towards social, cultural, economic, political, scientific and technological progress, NPE (1981).

In the policy, the educational structure consisted of a six year primary programme, a three year junior secondary programme, a three year senior secondary programme where the Technical Colleges fit in, and a four year tertiary education programme was put in place. Objectives were accordingly set for the various levels of education while new features such as an expanded curriculum to emphasize pre-vocational and technical education, teaching of mother tongue, emphasis on continuous assessment as well as guidance and counselling were introduced into the system.

Vocational and Technical Education in the National Policy on Education (1981), is that aspect that leads to the acquisition of practical and applied skills as well s basic scientific knowledge. It is specifically designed to enhance efficiency in a specific occupation, and is also concerned with educational domain of knowledge (that is cognitive, affective and psychomotor domains) in relation to 6-3-3-4

educational policy. It was observed that vocational and technical education encompasses the embodiments of the policy's aims and objectives, which goes a long way in achieving the nation's objectives. The policy also stimulated genuine awareness in Nigerians, of the need to forge a new philosophy on education that would give a sense of direction to schooling as a whole. According to the NPE (1981) "it is believed that if the new system is successfully implemented, it will ensure:

- "The inculcation of national consciousness and unity;
- Inculcation of right type of values and attitudes for the survival of the individual and the Nigerian society;
- The training of the mind and the acquisition of appropriate skills, abilities both mental and physical, as equipment for individuals to live in and contribute to the development of the society."

The National Policy on Education has far-reaching implications for the Technical colleges. Apart from changes in the curriculum, structure and organisation of the school, targets were set for the schools to accomplish. Prominent among these, is the transition rate from the primary to secondary schools. According to the Third National Development Plan, the recommended rate of transition from primary to secondary school was 70 percent which included admission to crafts schools, vocational centres and technical colleges as well as junior secondary schools. The target to be aimed at by all States, including Delta, should however, be 100 percent enrolment (NPE, 1981). The implementation of the National Policy on Education coincided with the graduation of the first set of Universal Primary Education (UPE) product. This brought about a population explosion. It became very difficult to admit all the pupils. In Delta State, serious

efforts were made to achieve the enrolment target. According to Osuala (1995), "apart from providing additional facilities, by Delta State in 1986, existing Boarding schools were converted into Day Secondary Schools including Technical schools. Yet, society has decried the inability of government to provide places for the products of the Universal Primary Education. There were also criticisms on the mode of placement of students into the Junior Secondary Schools, Craft Centres and Vocational and Technical Colleges in the State and the Federation in general."

Fagbemi (1987) opined that "preparedness for the implementation of the NPE in the Technical Colleges is determined by the provision of adequate teachers, funds, guidance counsellors, tools and equipments, consumable materials, facilities, infrastructures and administrative arrangement." The National Policy on Education brought about various changes in the school system. Based on the observations of the All-Nigerian Conference of Principals of Secondary Schools (ANCOPSS) and the National Association of Principals of Technical Colleges of Nigeria (NAPTECON), "change can be a problem more especially where adequate provision for human, material and financial resources are not ensured. Nonetheless, change, reform and innovation, are inevitable for the Technical colleges as the country's hope for economic and social development depended upon science and technology."

From the above discussion, it is obvious that the 6-3-3-4 educational policy in relation to vocational and technical education was well intended, and the researcher observed that the policy would have a positive influence on vocational and technical education if it is implemented to the letter but for the existence of some hindering factors to the implementation which called for this research work.

2.3 Vocational and Technical Education (VTE)

According to the Annual Report of NBTE (1987), the Vocational Technical Education is a necessary tool for self-reliance and technological development of any nation because the main thrust of Vocational Education is on the application of specialised learning techniques in the realisation of both educational and societal objectives. According to Haruna and Abbas (1996), the central objectives of Vocational Technical Education therefore revolve on the achievement of socio-economic, industrial and technological objectives that will eventually manifest themselves in improved standard of living for the citizens, as well as in economic stability, industrial harmony and technological advancement.

Nigeria being a developing nation in dire need of technological development and greater economic well being for her citizens therefore recognized the need for Vocational Technical Education. Consequently, it introduced the National Policy on Education (1977), that is the 6-3-3-4 system of Education. The National Policy on Education made provision for the establishment of vocational or Trade Centres and Technical Colleges in the country with the following broad objectives to:

i) provide trained manpower in applied science; technology and commerce particularly at sub-professional grade;

ii) provide the technical knowledge and vocational skills necessary for agricultural, industrial, commercial and economic development;

iii) provide people who can apply scientific knowledge to the improvement and solution of environmental problems for the use and convenience of man;

iv) give an introduction to professional studies in engineering and other technologies;

v) to give training and impart the necessary skills leading to the production of craftsmen, technicians and other skilled personnel who will be enterprisi%-12

and self-reliant, and

vi) enable our young men and women have an intelligent understanding of the increasing complexity of technology.

The first step towards the implementation of Vocational Technical Education (VTE) under the education policy was taken in September, 1976, when the Federal Government made primary schools "Free and Universal" (UPE). According to Osuala (1995), "with the UPE, the educational system has been restructured to be relevant to the needs of the society, to be functional in outlook so that the Nigerian society can eventually be oriented from consumptivity to productivity by imparting the much needed capabilities into the work force in all areas of the economy."

The major milestone in the history of Technical Education in Nigeria was the establishment of the National Board for Technical Education (NBTE) in 1977, as part of the implementation of VTE of the new Education policy. The Board was charged with the responsibility of all aspects of Vocational Technical Education outside the University. In addition to being the accreditation house and ensuring that minimum standards are maintained for all programmes in the nation's Technical colleges and polytechnics and colleges of Technology, it also shoulders the responsibility of giving approval for establishment of these categories of institutions by individuals and private organisations (Annual Report, NBTE, 1987). In furtherance of these objectives, the National Board for Technical Education (NBTE) developed innovative curricula and specifications on Vocational Technical Education programmes for the Technical colleges, polytechnics and colleges of Technology in Nigeria. Good as these curricula are, the questions being asked are to what extent have they been implemented? What are the problems or constraints militating

against their implementation?

The establishment of the NBTE was closely followed by the creation of the National Business and Technical Examination Board (NABTEB), with Headquarter in Benin. The Board is charged with the primary responsibilities of conducting examinations for the award of the National Business Certificate (NBC) and National Technical Certificate (NTC) taken by students from all the Technical colleges nationwide. In addition to that, the Board also conducts examinations for the award of the Advance National Business Certificate (ANBC) and Advance National Technical Certificate (ANTC). Furthermore, the Board is saddled with the responsibility of admission into all the government Technical colleges, throughout the federation. The first examination conducted by the Board for the award of NBC, NTC, ANBC and ANTC, was in June, 1995. The Board conducted examination, twice in a year, June examination for school candidates while the November/December examination for the private candidate. The NBC and NTC certificates are made equivalent to the Senior Secondary School Certificate (SSC). With the establishment of NABTEB, apart from taking over from the West African Examination Council (WAEC), the responsibilities to conduct WAEC Business and Technical Examinations, notably the Royal Society of Art (RSA) and City and Guilds (C & G) respectively, the Federal Government had scrapped the titles of these examinations and changed them to the current NBC and NTC respectively.

The subjects offered in the Technical colleges are

VOCATIONAL TECHNICAL SUBJECTS (Source: NABTEB)

(a) Business Studies subjects
- Shorthand
- Typewriting
- Office Practice
- Secretarial Duties
- Accounts/Book Keeping
- Commerce
- Economics

(b) Home Economics
- Food and Nutrition
- Home Management
- Clothing and Textile

(c) Technical Subjects
- Blocklaying & Concreting
- Painting & Decorating
- Carpentry & Joinery
- Furniture Design
- Electrical Installation
- Basic Electricity
- Electronics
- Plumbing & Pipe Fittings
- Motor Vehicle Mechanics
- Metal Fabrication
- Welding & Fabrication
- Radio and T.V. Servicing
- Printing Technology
- Dying and Bleaching
- Tailoring and Dressmaking
- Brick Making
- Boat Building
- Metal Work
- Wood Work
- Auto-Electrical Work
- Engineering Drawing
- Building Drawing
- Technical Drawing

Technical Subject Contd.
- Instrument Mechanical
- Cosmetology
- Garment Making
- catering Craft
- Leather Craft
- Printing Craft
- Textile Craft
- Graphic Art
- Ceramics Craft
- Refrigeration Practice
- Air-conditioning Practice

(d) General Studies/Sciences
- English Language
- Mathematics
- Social Studies
- Physics
- Chemistry

2.4 Enrolment into Technical Colleges

The distribution of technical colleges in Nigeria as recorded in NBTE Annual Report (1996), shows that there are a total of 123 Technical Colleges in the country, out of this number, 110 are owned by various State governments while only 13 are federally owned Technical colleges. Delta State alone has 6 Technical colleges.. On enrolment, the report went further to show that in the 1993/94 academic year, the total students enrolment into the Technical colleges was 52,805 students across the country. Out of this number, a total of 45,116 were male students while only 7,689 were female.

Table 2.1: DELTA STATE TECHNICAL COLLEGES, ENROLMENT FROM 1995 TO 1999

Technical Colleges	1994/95	1995/96	1996/97	1997/98	1998/99
Agbor Technical College, Agbor	331	320	305	287	254
Isele-Uku Technical College, Isele-Uku	487	503	360	310	305
Sapele Tech. College, Sapele	638	630	650	580	558
Ofagbe Tech. College, Ofagbe	358	360	340	315	267
Otogor Tech. College, Ughelli	503	478	470	434	386
Utagba-Ogbe Tech. College, Kwale	318	320	280	230	225
	2637	2611	2405	2156	1995

In Delta State as in the above table 2.1, it shows that enrolment into Technical Colleges in Delta State is on the downward trend, for instance in 1994/95, a total of 2,637 students were registered in the Technical colleges in the State as against 1995 students who were enrolled in 1998/99.

The philosophy and objectives of Vocational and Technical Education, however, beautifully expressed, will remain a mere paper work if only a handful of vocational and technical institutions exist here and there in the country (Ulinfun, 1990). When one compares the evolution and quantity of secondary schools with that of Vocational and Technical schools in Nigeria, in terms of institutional number and student enrolment, the ratio stood at 133:11, for instance, in 1985, less than 120 vocational and technical colleges were functioning with a total enrolment of less than 60,000 as against 6,000 secondary schools with an enrolment figure of over 8 million (NBTE, 1996).

In view of the above information, the present attempt to make vocational and technical education the pivot of the new system of education should be a national multi-directional effort. There is also a dire need for a thorough re-examination and over-hauling of the programme planning, content and delivery systems in our Vocational and Technical institutions, so that they can provide adequate and relevant skills and competencies in order to facilitate the employability of millions of Nigerians who look forward to Vocational Technical Education as a vehicle for achieving their social and economic goals in the face of a fast changing technological world (Towe, 1990).

2.5 Staffing of Vocational Technical Colleges

No system of education can achieve its purpose without adequate staff. Facik and Face (1996) aptly observed that "the ultimate success of any enterprise depends on the individual efforts of those who are the productive elements of the enterprise." Thus, it has been observed that since the inception of the 6-3-3-4 education system, shortage of technical teachers has been the most serious limitation to the realisation

of the objectives of the education system. Nwoke (1996) agreed with this when he stated that serious shortfalls have always existed in the number of professionally qualified vocational and technical teachers needed in the nation's schools and colleges. Equally, in a study by Aina (1993) in Ulinfun (1986), it was found that the stock of technical teachers n circulation was 5,593 (5.48%) compared to a projected figure of 102,083, leaving a shortfall of 96,490 (94.52%). This is in agreement with a study conducted by Ulinfun and Nwaokolo (1986) in 8 states of the country, which found that of 14 critical problems identified, 13 (65%) of the educators responded that insufficient number of vocational technical teachers was their greatest single problem. No nation can therefore hope to achieve and sustain, any impressive degree of technological development without conscious effort to develop its technical manpower.

It will be incorrect however, to assert that the Federal Government has not attempted to produce enough technical vocational personnel for our vocational technical schools. The Federal Government in collaboration with the United States of America (USA) trained technical teachers for the nation's schools under the Technical Teachers' Training Programme (T.T.T.P.). The target of the programme according to Haruna and Abbas (1997) was to train over 50,000 Technicians and Technical Educators within a period of five years. In spite of these efforts, the problem appeared defiant because of several aggravating factors. Towe (1995) for example, observed that many available teachers abandoned their teaching jobs for the more attractive opportunities in industry and commerce.

With the down-turn in economic fortunes of the country, the Federal Government decided to look inwards in its efforts at producing its technical teachers. It thus established nine Federal Colleges of Education (Technical) in

addition to various efforts by many State Colleges of Education and Technical Education departments of various polytechnics and universities. Despite all these seemingly impressive efforts, the problem of shortage of technical teachers persists. This as we have observed, is due to lack of motivation and job satisfaction for this crop of teachers. Concerted efforts therefore, must be made towards finding appropriate means of retaining these teachers in our vocational technical education programme.

In addition to the inadequate supply of teachers for the vocational colleges, the problem of quality and experience of the existing ones has been a source of worry to many educators. It has been stated that the quality of education at any level of our educational system is to a large extent a product of the quality of teachers involved in the system, and a sustained provision of all the other resources that make teaching and learning hitch-free. For as Musa (1995) stated, effective teacher can make all the difference even in the face of inadequate facilities. Hence, no matter how much facilities are provided, no learning can take place without competent teachers. As rightly noted in the NPE (1981), "no education system can rise above the quality of its teachers."

Since the main objectives of Vocational Technical Education is the production of competent graduates with adequate and appropriate skill for entry into an occupation, vocational technical teachers must be equipped with current and up-to-date skills in their chosen area of occupation, for as it has been rightly stated, "no one gives what he does not have." The prevailing situation in most of our vocational technical colleges, where many of the teachers are holders of C & G or WAEC Technical Certificates, does not augur well for the technical colleges. Teachers in these colleges must be encouraged to undergo additional training and made to have

adequate and appropriate industrial experience in their relevant fields of study. Supporting this view, Haruna and Abbas (1997) stated that personnel in Vocational Technical Education must possess extended occupational experience in the fields of which they are working.

According to Fafunwa (1996), "in furtherance of this, admissions to our vocational technical teacher training institutions must be regulated such that students entering must have appropriate background in at least vocational technical area. Instances of admitting T.C. II holders and senior secondary school graduates without technical backgrounds should be stopped. The curricula of such institutions should also be changed such that greatest emphasis be placed on technical subjects in such a way that graduates should specialise in one specific area of study. The current situation of producing a teacher who is a "Jack of all Trade, but a Master of None" should be stopped."

2.6 Supply of Equipment and Materials

Perhaps the greatest constraint against the successful implementation of the VTE curriculum in our technical colleges is inadequate supply of equipment and materials in the college workshops. According to Akoni (1986), "essential materials are not available, hence, many of the teachers resort to using whatever materials or equipment they can assemble to enable them teach a particular course instead of a total cancellation of the course." As the researcher noted much earlier, the emphasis on VTE programme is on skill development, this will make the graduates become self-employed as soon as they graduate from the colleges. Therefore, learning activities must be planned in order to inculcate in the students such skills, values and aptitudes that will enable them enter into and progress in their chosen

vocation. This calls into view, therefore, the need for adequate and appropriate supply of equipments and materials for executing the VTE programmes. Such equipment should meet the standards in the industries as Prosser (1990) said, "the training environment is a replica of the environment in which the learner must subsequently work." Oghuma (1988) reported that "by the end of 1987 Edo/Delta States received 200 crates of equipment from Bulgaria, Chechoslovakia and Hungary at a total cost of N11.8 million. The States had also completed installing some of the equipments in the schools workshops." Oghuma (1988) further revealed that most of the equipment are still in the crates because of lack of workshop accommodation or trained manpower to install them. Other facilities as reported by Ibe and Ozulonye (1989) such as tape recorders, radios, typewriters, charts, audio-visual materials, etc, which the students can use, both in the classroom and after school hours, are all lacking in the Technical Colleges.

Therefore, the inadequacy of appropriate equipment in the technical college workshops should be a matter of concern to the education administrators. For as sounded by Ulinfun (1986), basic infrastructure are disturbingly lacking in our colleges, workshops are either empty or stocked with obsolete machines. Even in instances where these equipment are present, most of them have either broken down due to lack of maintenance or are completely out of use. Hence we are faced with a situation where we produce students who have never operated or seen in operation any machine they are likely to meet upon graduation.

According to Towe (1989), the NBTE visitation panel report to technical colleges in the country, 54 colleges were visited. In a case of Furniture Trade for example, of the 22 colleges offering the programme, not a single one, had the equipment to teach the course. This trend runs through almost all the programmes surveyed. It can be said that this situation in our technical colleges has not changed.

The situation to say the least is getting worse with the economic recession the country is currently experiencing. We must look inwards in equipping the college workshops instead of the current practice of wholesale importation with its problem of lack of spare parts upon breakdown. Our equipment manufacturing industries should be encouraged and adequately funded to help out.

2.7 Financing of VTE programme

Education as an expensive social service requires adequate financial provision from all tiers of governments for a successful implementation of VTE programmes. It is a joint responsibility of the Federal, State and local government. The government, however, welcomes and encourage the participation of local communities, individuals and other organisations (NPE, 1981). According to Okeke and Oranu (1993), vocational education anywhere in the world is a viable industry and sine-qua-non to a new world technological order which requires adequate resources. But it has been noted by several people that this cannot be achieved without adequate funding of the nation's vocational technical institutions. According to Olaitan (1992) a good VTE programme should be adequately funded for effective teaching and learning. He further stated that VTE programmes unlike other training programmes involved buying students tools, machines and all other working materials. Also, Agun and Imogie (1994) agreed with this when they stated that finance is a crucial factor that determines the range of equipment and materials that can be provided in the schools.

Correct as this may be, financing of the VTE programmes leaves much to be desired. Funding of VTE has been at best epileptic, with the depreciation of the naira and the global inflation coupled with the down-turn of the nation's economy.

The consequences of all these are that smaller amount is being allocated to VTE programmes. This situation has been worsened by the tendency of our educational administrators to allocate the same amount of money allocated to VTE programmes to other programmes. This is not appropriate because as noted by Nzerem (1994), "VTE is capital intensive, hence it is unfair to use the same criteria of allocation of funds to be applicable to all the institutions irrespective of the type of programme they run. VTE programmes are capital intensive. This is so because in VTE, money is needed to procure machines, equipment and materials. Therefore, for any meaningful learning, the students have to work in the laboratories and workshops that are well equipped with up-to-date machines and tools, the absence of this may result in the collapse of the full implementation of the programme.

A more worrisome trend in our vocational technical institutions is the failure of the management of such institutions to allocate scarce resources to genuine educational purpose. As stated by Enemali (1995), "there are evidences to show that in schools where school furniture and training materials are not supplied for use by students .... greater proportion of educational funds is devoted to non-academic matters like repainting of buildings and streets within the campuses. Past experience and common observation permit the conclusion that contractors and middlemen are the main beneficiaries of government funds devoted to Education."

In order to boost the amount of money available for funding VTE programmes, the Federal Government and other tiers of government should be involved in its financing. This must be backed by appropriate legislation which should also compel the private sector to contribute specifically to a Vocational Technical Education fund. The present 1% general education tax in this respect is considered not adequate seeing the current state of the nation's vocational education

institutions.

According to Oghuma (1998), "at the 10th Annual Conference of Principals of Technical Colleges in Nigeria (NAPTECON) held in Lagos (1988), the principals contended that no solution is feasible without a direct Federal Government involvement in funding both primary, secondary and technical education in the country". They resolved that since the States cannot provide sufficient fund to install their already purchased equipment, the Federal Government should "take over the construction of more workshops for students particularly at the Technical Colleges and Junior Secondary Schools."

However, in response to the Federal Government call on individuals and organisations to participate in funding and supporting educational endeavours, a few organisations and philanthropists have responded. Some of these organisations include Religious Organisations, United Nations' Development Programmes and UNICEF while some of the philanthropists like Chiefs M.K.O. Abiola, Iwuanyanwu and Arthur Nzeribe, either made donations towards the progress of educational programmes and projects or awards of scholarships to deserving students.

2.8 Provisions of Facilities

Inadequate facilities in the nation's Technical colleges has been identified as one of the greatest constraints facing VTE institutions in the country. Facilities such as classrooms, science laboratories, workshops to house the equipments, libraries, typing pools, recreational facilities, electricity, water, health, consumable materials for practical training, etc, are all very much inadequate in the nation's technical colleges. For instance, in NBTE Technical Education Project Report (1995) sponsored by the World Bank, noted the inadequate status of the library and shortage of consumable materials for the workshop practicals and projects in the

nation's technical colleges. For the library, the panel noted that most Technical Colleges had accommodations designated as libraries, which were poorly stocked with obsolete text and reference books, journals, magazines and periodicals, most of which have no relevance to the technical and business courses taught. Besides, there were no audio-visual materials or instructional materials production centre. No specific allocation was made for library materials in the Budget. None of the libraries had professionally qualified librarian or even library officers to properly run them, also funds provided was grossly inadequate to procure the required quantity of consumable training materials. The NBTE study panel viewed the acquisition of vocational skills for entry - level employment by completers of the Technical College graduates as crucial to their survival in a modern society. A skilled person is always able to find job or could easily settle to something on his own to earn a living.

In the interest of the education development (NPE, 1981), the government assumed that Educational Resource Centres would be established at State and Federal levels. Audio-Visual aid Centres would be set up as well, for the development and effective utilisation by all educational institutions. Language, Science and Mathematics Centres and workshops would also be set up to serve as the facility for the design of equipments and instructional materials.

The government also recognised the importance of Radio and Television in improving communication. Where facilities exist, however, the Radio and Television Broadcasting would form a permanent feature of education system.

2.9 Obsolete Nature of VTE Curriculum

The greatest problem with the VTE curriculum lies with its obsolete nature.

A look at the curriculum of most vocational courses at the Technical Colleges will reveal that there have been no change for the past 20 years. In an era of rapid change in technology and in its methods of formulation and with the increasing use of computers in almost all spheres of human activity, there is a great need to change the content of most of the courses in our technical colleges to reflect these changes.

Such changes must take into consideration the current trends of such vocational area, since one of the objectives of VTE is the preparation of the individual to enter, and progress in an occupation, there is a great need to design VTE curriculum that aggregates the ever present changes in industry and society, (Haruna and Abbas, 1997). And since we live in a world that is very much dependent on technology as an instrument of change and challenge, there is a need for a significant effort to prepare people to live in the rapidly changing world by equipping students to use technology to improve the quality of many personal and professional technology based decision (Haruna and Abbas, 1997).

This can only be done by significantly altering the present curriculum of the vocational technical colleges such that it will de-emphasize old programmes that relate to only knowledge and skill acquisition in only one technical or vocational discipline. There should be a development of a programme which will emphasize the study of technology in major areas of human activities, e.g. transportation, communication, manufacturing and construction, instead of the traditional titles of woodwork, metalwork, building construction, etc. Good (1983) identified some essential elements of such a programme which should include the following:-

a) should provide exploratory experience, that promote human adaptability, thereby building transferable skills, knowledge and attitudes that can be applied to further schooling, employment and productive citizenship;

b) should help provide the individual with the flexibility needed to make future career changes;

c) through activity - centered learning, it provides experiences that help all students to discover their technical interest and capabilities;

d) laboratory setting should be conducive to an experienced-based study of adaptive technical systems through which specialisation, experimentation, and innovation are encouraged.

Benson (1984) in providing general guidelines for developing curricula that will provide the above experiences stated that it could take various forms, but that each must be carefully taught to reflect the contemporary developments. He went further to list basic guidelines for designing such a curriculum:

a) courses should take on much more breadth in their titles, e.g. manufacturing rather than metalwork;

b) the process of technology should become integrated part of all courses at all levels, e.g. problem solving with tools, materials, processes and systems;

c) equipment and laboratory apparatus should be consistent with current technology;

d) computers should be integrated into the courses, for example, control, monitoring, planning, designing, device, etc;

e) the economic enterprise should be part of at least one required course for all students, e.g. stress in development, inventing, patents research and development, experimentation and entrepreneurship, skills, etc.

What the researcher is saying in effect is that for vocational education to be meaningful, the present curricula should be changed to meet the dynamics of technological changes. The NPE (1981) recognised this much when it stated as one

of its aims of technical education, that "it will enable our young men and women to have an intelligent understanding of the increasing complexity of technology." It is my submission that this cannot be achieved with the current curriculum which I believe is obsolete.

2.10 Textbooks and Instructional Materials

One of the most important tasks facing vocational and technical colleges is the inadequate supply of textbooks and instructional materials. The technical colleges are ill-equipped with modern library facilities and current textbooks in Vocational and Technical Education. In most cases in schools where books are available, the textbooks may be too elementary, outdated, or contain unrealistic and facts that have been overtaken by events or research.

As most of the textbooks at present are either too expensive, inadequate or obsolete for the new curriculum, the Federal Government has established a National Book Development Council, whose functions include promoting the development, production and distribution of books for all levels including textbooks on technical and vocational subjects, and the encouragement of indigenous authors. This Council has already been established and has been working on various aspects of book development. A World Bank Technical Education Project Report (1995) noted that "most Technical Colleges had accommodation designated as libraries, which were poorly stocked with obsolete text and reference books, journals, magazines and periodicals, most of which have no relevance to the technical and vocational courses taught."

Adesina (1987) observed that books are sold at prohibitive prices with the result that several learners do without them. Apart from being in short supply and

expensive, Ulinfun (1988) in support of Adesina doubts their adequacy and relevance in terms of local conditions and needs. He observed that most of the text materials used reflect foreign background. This goes to support Ibe and Ozulonye (1984) who claimed that most materials used are basically foreign and this increases the difficulty of students' understanding the work, because they are not easy for students to comprehend.

2.11 Guidance Counsellors

In view of the apparent ignorance of many young people about career prospects, and in view of the personality, maladjustment among school children (NPE, 1981), the policy recommended that career officers and counsellors would be appointed in post primary institutions. The purpose is to assist the individual student to choose an occupation, prepare for it, enter upon and progress in it. According to Dinkmayer and Caldwell (1990), "the advocates of vocational orientation in the vocational schools believe that work is a way of life and one of the fundamental tasks of all human beings, and that the most adequate human adjustment occurs when the nature of work task is congruent with aptitudes, interests and values of the individual."

The Vocational Educational Theory is composed of a series of life stages which include the stages of growth, exploration, establishment, maintenance and decline. The exploration stage is composed of fantasy, tentative and realistic phases. As students enter the exploratory stage, they make fantasy occupation choices, choices made without a knowledge of either themselves or the reality of work. As Gallinsloss and Fast (1989) pointed out that self-bout, feeling of unworthiness and fear of failure, make it challenging for the pupil to choose a career. This problem

of choice may further be compounded by the fact that the pupil may not get help in making his choice."

Furthermore, Osuji (1991) discovered that students aspire to high level jobs than middle level jobs and tended to choose without regard to their ability, with the result that the youth, fresh from secondary school and entering the business world, firstly looks for a befitting or an attractive designation. Thus, after the elementary vocational courses in Book-keeping, Typewriting and Shorthand, as Iwuanyanwu (1992) observed, the students would wish to be designated "Accountant" and not Clerks and if Secretarial with a pass in G.C.E. 'O' level in Typing and Shorthand, they would prefer to be designated "Secretaries" even though they have only typing speed of less than 25 words per minute and can only just write their names and a few definite words in Shorthand.

In his own contribution towards the need for guidance and counselling in our technical schools, Nkeme (1991) reports that the item in his study that is most checked was "wanting advice on what to do after leaving school." Followed by "Afraid of the future." This as suggested by him, that Nigerian students tend to have inadequate self-knowledge particularly at the Junior Secondary School level and this makes them unrealistic in their vocational aspirations on entering technical colleges.

The N.P.E. (1981) provided that the secondary school system should be re-organised into three year Junior Secondary School and three year senior Secondary School, where the three year vocational technical colleges fit in. The intention is to enable them choose their careers according to their interests, abilities and aptitudes. The implementation of the N.P.E. has made the technical school curriculum more diversified. The importance of guidance counsellors in these schools cannot be over

emphasized. Their presence in our technical institutions is an added advantage. Students' attitudes and activities are greatly influenced by the institutions.

The commitment of students to their work in the school is the most powerful factor in students' attitudes and morals, and this, therefore, helps to reduce indiscipline in schools, as every student is bound to find an area that interests him or her in the curriculum with proper guidance. As Denga (1994) stated, one can clearly see that choosing an occupation is one of the most important life decisions. The success or failure in occupation has profound experiences not only for the individual's total life, but also for the society which he is to serve. As Paterson (1992) asserts, "... a man's occupation moulds his life. It determines his social class, his place of living, his dress, his hours of work and thus his hours at home. Indirectly, it affects his attitudes and opinions, his goals and values, including the way he feels about education, his outlook on life and politics. Likewise, length of life is related to one's occupation, with educationists, lawyers, and business executives being among those with long life spans, doctors falling in the middle and the poets being among the lowest."

Since guidance counselling and qualified personnel in this category are scarce, the government will continue to make provision for the training of interested teachers in Guidance and Counselling (NPE, 1981). It is pertinent to note from the foregoing that guidance and counselling play tremendous roles in the students choices of occupation in technical education. Students in the vocational technical colleges need to be properly guided, educated and counselled on what technical education entails, its purpose, prospects and importance in the world economic order.

2.12 Evaluation - Continuous Assessment

Continuous assessment has been defined in the Federal Ministry of Education Handbook (1980) as "a mechanism whereby the final grade of a student is arrived at and his weakness identified." It therefore helps the students, the teacher and the parents to diagnose, plan for and improve or promote student's progress. Continuous Assessment is an approach to evaluation which is sensitive to the needs of the developing child within our educational environment. It therefore allows for cumulative, comprehensive and reliable data to be collected and stored to indicate what progress the developing individual has made and can make as a result of his exposure to the arranged and incidental experiences within and without the classroom in particular context (Ohouche, et al, 1983). The sensitive strategy involves measuring instruments which cater for individual strengths and weaknesses and repeated measurements that allow for stability and change in individual characteristics and performance.

According to the N.P.E. (1981), the mode of evaluation will be based on continuous assessment. The participants at the 7th Annual National Fund of the Industrial Training Fund (I.T.F.) held in Lagos in 1985 supported the use of uniform continuous standardized assessment system in implementing the curricula of the 6-3-3-4 programme throughout Nigeria. The Federal and State Governments have organised workshops in various locations throughout the country, to ensure the successful implementation of the continuous assessment method of evaluation in schools. In 1979, a workshop was organised in Ibadan which led to the production of the draft Handbook on Continuous Assessment. Despite all these, the level of sensitization and even understanding of the Continuous Assessment grading of students in the cognitive, affective and psychomotor domains is still very low.

According to Ohouche (1983), Continuous Assessment, by its systematic, comprehensive, cumulative and diagnostic nature, has several benefits, but it is only through proper understanding, planning, development and correct usage of measuring instruments that these fruits can be reaped.

2.13 Empirical Studies

A careful search of the literature in this field by the researcher has failed to reveal any thorough-going study on the "Needs Assessment of Technical Colleges in Delta State."

However, there are related studies which have attempted to look into the constraints militating against the successful implementation of the National Policy on Education with reference to Vocational Technical Education in the Junior Secondary Schools.

Ube (1991) studied the factors affecting the implementation of National Policy on education in Kaduna State with reference to VTE in Junior Secondary Schools. Her study was anchored on the following:-

i) There was an indication that the level of preparedness of Kaduna State for the implementation of the National Policy on Education was very low. The study also showed that the schools lack essential resources (human, material and financial) for a successful implementation of the programmes of the vocational and technical education in the JSS in kaduna State.

ii) Other findings from the study revealed that there is need for more qualified and experienced teachers of VTE to be appointed principals of secondary schools to improve the administration and management of VTE subjects in schools. This was due to the fact that some schools are still headed by

N.C.E. holders.

iii) The study recommended among others that:-

a) well-equipped workshops and laboratories for vocational and technical subjects should be provided in the Junior Secondary Schools in Kaduna State;

b) more vocational and technical education teachers should be produced for the secondary schools in kaduna State as a matter of priority;

iv) government should always take their time when introducing new educational policies in schools. Efforts should be made to ensure that the basic needs have adequately been provided before such policies are implemented.

Wajoko (1990) studied an appraisal of implementation of the National Policy on Education with reference to vocational business subjects in Lagos State secondary schools. The study revealed that the secondary schools in Lagos State lack professional business education teachers, inadequate machines and business equipment, textbooks and instructional aids and typing pools were ill-equipped with Typewriters, furniture and fittings. The study recommended among others that:-

i) There is need to review the position of school inspectors so that they can visit schools and report promptly any anomalies discovered;

ii) That the State should recruit more professional business educators and in addition encourage the existing staff to update their qualifications through in-service programmes of the State;

iii) More typewriters, textbooks and instructional aids be provided in Lagos State Secondary Schools;

iv) The Inspectorate Section of the Ministry of Education should be more effective and report promptly the deficiencies found in the schools to government for immediate improvement.

The research works of Ube (1991) and Wajoko (1990) above are closely related to the study at hand in that both examined the implementation of the National Policy on Education on vocational technical education in the secondary schools in Kaduna State and Lagos State respectively. However, they differ in analysis for while both applied t-test in testing the Hypothesis, this study applied ANOVA F statistics and with the greatest hope that the result will differ in that the institution, years and areas covered are quite different.

2.15 Summary

The Vocational Technical Education programme as stipulated in the NPE (1981) has been fully implemented in the technical colleges in Delta State. Preparedness for the implementation of the VTE in the vocational technical colleges requires adequate provisions of teachers, funds, tools and equipments, infrastructural facilities, guidance and counsellors, consumable materials and administrative arrangements. The NPE brought about various changes in the VTE in Delta State. Such changes among others are training and supply of more technical teachers, increase in provision of infrastructural facilities, tools and equipment, textbooks and instructional materials.

The major milestone in the history of technical education in Nigeria was the establishment of the NBTE and NABTEB in 1977 and 1985 respectively. The former was charged with the responsibility of all aspects of VTE outside the University, while the latter was charged with the responsibility primarily to organise Business and Technical examinations for the Technical Colleges throughout the country.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

The research design and procedure that was used in this study are described under the following headings: research design adopted, population of study; sample size and sample procedure; research instruments; pilot study; data gathering procedure; data analysis procedure and summary.

3.2 Research Design Adopted

The survey research design was adopted to elicit information on the areas of interests developed from the respondents. In other words, the questionnaire was used to collect data from respondents. The items on the questionnaire was designed by the researcher and administered personally on the respondents.

Questionnaire was used because studies of this nature require the respondents' personal data on various items and therefore allowed for confidentiality and at the same time, it was easier to reach the respondents.

Completion of the questionnaire by the respondents was done within a week and at their spare time. Taking into cognisance of its simplicity in administration due to non-specialised skills needed for its administration, the questionnaire instrument therefore serves as a cost-saving device. The questionnaire method ensures some uniformity because of its impersonal and generalised nature.

3.3 Population of Study

The total population for the study is 327 respondents and they are in three groups. The first group of respondents are 18 in number, made up of 6 principals

and 12 Vice Principals of the six technical colleges in the State. The group is regarded as the Administrators who contribute towards the implementation of the VTE programme in the Technical Colleges. The Vice Principals were included as administrators because they are part of the school management. The second group of respondents was made up of 76 VTE teachers from the six technical colleges in the State. The third group were all the final year students made up of 233 Vocational III students, drawn from the six technical colleges in the State. (See Table 3.1 below for the population of study).

Table 3.1: Population of the Study

Technical Colleges	Group I Administrators		Group II	Group III	Total POP.
	Principal	V.P.	VTE Teacher	VTE III Students	
1. Agbor Technical College, Agbor	1	2	12	40	55
2. Isele-Uku Technical College, Isele Uku	1	2	11	35	49
3. Sapele Tech. College, Sapele	1	2	14	55	72
4. Ofagbe Tech. College, Ofagbe, Ozoro	1	2	12	30	45
5. Otogor Tech. College, Ughelli	1	2	13	33	49
6. Utagba-Ogbe Tech. College, Kwale	1	2	14	40	58
Total	6	12	76	233	327

The total population of teachers in the six Delta State owned Technical Colleges are 126, out of this number, 76 of them are professional vocational and technical teachers. The remaining 50 teaches general subjects such as English language, Social Studies, Mathematics, Chemistry and Physics.

The final year students were selected for the study because having passed through the system for three years, they are more mature to assess the needs of the Technical Colleges.

3.4 Sample Size and Sampling Procedure

Sample Size: The sample size comprised three groups of respondents. The first group comprised 15 principals and vice principals in five sampled technical colleges. The second group comprised 62 vocational technical teachers in five sampled technical colleges. The third group comprised 174 final year vocational III students randomly sampled from five of the technical colleges.

The sample size of a total of 251 respondents was determined, according to the table for determining sample size from a given population devised by Krejcie and Morgan (1970:608).

Table 3.2: Determination of Sample Size for the Study.

Technical Colleges	Group I Administrators		Group II	Group III	Total Sample Size
	Prin.	V.P.	VTE Trs	Students	
1. Agbor Technical College, Agbor	1	2	12	36	51
2. Isele-Uku Technical College, Isele-Uku	1	2	11	32	45
3. Sapele Tech. College, Sapele	1	2	14	48	66
4. Ofagbe Tech. College, Ofagbe, Ozoro	1	2	12	28	43
5. Otogor Tech. College, Ughelli	1	2	13	30	46
Total	5	10	62	174	251

Based on the recommendations of Krejcie and Morgan (1970) for the determination of small sample size, all the 15 Administrators, made up of 5 Principals and 10 Vice Principals in the five sampled technical colleges constituted the sample size for Group I. In the same process, all the available 62 qualified professional VTE subject teachers, in five sampled technical colleges, also constituted the sample size to Group II.

Out of the final year Vocational III student population of 193 from the five sampled technical colleges, a stratified random sample of 174 students was randomly sampled for Group III. For each college in the sample, a list of the students was drawn and a number assigned to each student. The table of "One Thousand Random Digits", Afolabi (1993:107), was then applied to the list for each school which drew the required sample size of 174 final year students for group III.

Table 3.3: Selection of a Stratified Sample for Group III

Technical Colleges	Population	Sample
1. Agbor Technical College, Agbor	40	36
2. Isele-Uku Technical College, Isele-Uku	35	32
3. Sapele Tech. College, Sapele	55	48
4. Ofagbe Tech. College, Ofagbe, Ozoro	30	28
5. Otogor Tech. College, Ughelli	33	30
Total	193	174

3.5 Method of Data Collection

Research Instrument: The questionnaire items were divided into two sections. The first section of the questionnaire sought personal and demographic information on the respondents while section B of the questionnaire sought information on the variables under study. The review of literature and information obtained from the preliminary visits to the six Technical Colleges provided the necessary information which were used in compiling the list of major features, that are necessary for the needs assessment of the Technical Colleges in Delta State.

However, after the moderation and comments of the supervisory committee of the researcher, an approved list was recommended for the study.

The major features which were considered to be very necessary for the implementation of VTE programme in the Technical Colleges in Delta State, were put either in question form or in statement form and the respondents were requested to indicate or rate the value scale or points according to their personal opinion. A

rating scale of 5-1 was used in the questionnaire. Each item on the questionnaire was structured to elicit responses such as the ones below. The ranking order of these responses were arranged as below:-

a) Very Important (Vm) - 5 points

b) Important (m) - 4 points

c) Undecided (Ud) - 3 points

d) Less Important (Lm) - 2 points

e) Not Important (Nm) - 1 point

On the level of adequacy of the features, the responses categories were as follows:-

a) Very adequate (VA) - 5 points

b) Adequate (A) - 4 points

c) Undecided (Ud) - 3 points

d) Less Adequate (LA) - 2 points

e) Not Adequate(NA) - 1 point

On the degree of agreement, the responses were:-

a) Strongly Agree (SA) - 5 points

b) Agree (A) - 4 points

c) Undecided (Ud) - 3 points

d) Disagree (D) - 2 points

e) Strongly Disagree (SD) - 1 point

Thus, a minimum of one point and a maximum of 5 points were the expected responses from each of the items in the questionnaire.

Returned and unusable questionnaires were analysed to determine which of

the features was very important to the Technical Colleges. Efforts were made to find out through analysis of data, how adequate the available features were in the Technical Colleges.

Data Collection: The data for this study were collected through the questionnaire, administered in five of the Technical Colleges in Delta State, selected for this study.

Principals = 15 questionnaire was distributed to the Administrators.

Teachers = 62 questionnaire was distributed to this group of respondents

Students = 174 questionnaire was also distributed to the Vocational III students.

The questionnaire was administered personally to the respondents by the researcher. Permission was sought from the State Ministry of Education, Asaba, Delta State to allow the researcher to visit the technical colleges for data collection. The principals of the various technical colleges were written officially from the State Ministry of Education, Asaba, to grant audience to the researcher to enable him collect data from the colleges.

The researcher visited the six technical colleges in order to administer the questionnaire. An allowance of between two to three weeks was given to respondents for completing the questionnaire after which the researcher went back to the schools to collect the completed questionnaire. The advantage of the second visit by the researcher was to make clarification on certain items in the questionnaire that may not be clearly understood by the respondents at first.

3.6 Pilot Study

Preliminary visits was made to the six technical colleges in the State to obtain

some background information for the assessment of the needs of the Technical Colleges. The colleges visited are:-

1. Agbor Technical College, Agbor
2. Isele-Uku Technical College, Isele-Uku
3. Sapele Technical College, Sapele
4. Ofagbe Technical College, Ofagbe, Ozoro
5. Otogor Technical College, Ughelli
6. Utagba-Ogbe Technical College, Kwale

Based on findings from these colleges and the review of literature, questionnaire was developed for data collection. To ensure the reliability of the questionnaire, the research instrument was pilot tested with a total of 54 questionnaire, made up of principals (3), VTE subject teachers (15), and Vocational III students (36) in Utagba-Ogbe Technical College, Kwale.

The internal consistency of the instrument was established using test re-test reliability. The questionnaire was administered to the same group of people twice within a period of three weeks. The data obtained from the two administration were then correlated in order to determine the reliability co-efficient.

The calculated reliability co-efficient for the principals questionnaire was 0-86, that of the Teachers questionnaire was 0.96 and that of the student questionnaire was 0-94 using Spearman Rank Order Correlation Coefficient rho (P). The formular is represented by:

$$P(r\ h\ o) = 1 - \frac{6\sum d^2}{N(N^2-1)}$$

where d = the difference between paired ranks

N = the number of items ranked

The above figures suggest that the questionnaire are reliable and valid. In

addition, the content validity of the designed questionnaire was examined by the researcher's supervisor and two other vocational technical education specialists.

3.7 Method of Data Analysis

The following statistical tests were used for the analysis of data:

a) Frequency counts, percentages and mean scores were used for the statistical analysis on the respondents information on demographic data and research questions.

b) ANOVA F-test statistic was computed to test the four Null Hypothesis if the multiple Mean are significantly different when the three groups of respondents are compared.

The F-test statistic was used for the computation of the null Hypothesis because:

- the data are of three groups, drawn independently, of each other and with large Ns
- Samples drawn from normal distribution - randomisation.

3.8 Summary

This chapter has attempted to describe the research methods adopted, population of study, sample size and sample procedure, instruments used for collecting data, pilot study, data gathering procedure and data analytic procedure in the research work.

CHAPTER 4

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.0 INTRODUCTION

The objectives of this study were to identify the important resources needed in the Technical colleges, assess the adequacy of the available resources, identify the causes of poor academic performance of the colleges and recommend measures that would improve the standard of VTE programme in the Technical Colleges.

The questionnaire that was issued out to the respondents for the purpose of this study were all completed, returned and used for this analysis.

4.1 Personal and Demographic Information

In order to carry out fair assessment, some background and general information dealing with the personal characteristics of respondents were obtained through the data collecting instrument.

Table 4.1: DESIGNATIONS OF RESPONDENTS

Category	Principal - 15		Teachers - 62		Students - 174		Total - 251	
	No.	%	No.	%	No.	%	No.	%
Principal	5	33.33	-		-	-	5	1.99
Vice Principal	10	66.59	-		-	-	10	3.98
HOD/HOS	-		20	32.26	-	-	20	7.97
Classroom Teacher	-		42	67.74	-	-	42	16.73
Student	-		-		174	100.00	174	69.32

Table 4.1 above clearly illustrates the distribution of the respondents in the three groups. Furthermore, it indicates that all the members of the sample size for the study participated fully in the exercise.

Table 4.2 QUALIFICATIONS OF RESPONDENTS

Category	Principal - 15		Teachers - 62		Students - 174		Total - 251	
	No.	%	No.	%	No.	%	No.	%
Ph.D								
M.Ed; M.A; M.Sc	1	6.66	1.	1.61	-	-	2	0.80
P.G.D.E.	1.	6.67	1	1.61	-	-	2	0.80
B.Ed; BA; B.Sc	12	80.00	20	32.26	-	-	32	12.75
NCE; NTTC	1	6.67	40	64.52	-	-	41	16.33
HND; FTC	-	-	-	-	-	-	-	-
OND, Final C & G	-	-	-	-	-	-	-	-
TC II, RSA, C & G Inter. SSC	-	-	-	-	-	-	-	-
FSLC; JSSC; S.75	-	-	-	-	174	100.0	174	69.32

Table 4.2 clearly shows the relevant qualifications of the respondents; Principals, teachers and students. In the case of principals 93.34% are graduates while 6.67% are non-graduates. For the teachers 35.48% are graduates while 64.52% are non-graduate teachers.

The NPE (1977) recommendation was graduates to teach in Senior Secondary Schools, Teacher Training Colleges and Vocational Technical Colleges, while NCE holders to teach in Junior Secondary Schools. In the Technical

Colleges in Delta State as in the above table 4.2, non-graduate teachers are more than the graduate teachers, indicating that there is shortage of professionally qualified teacher in the Technical Colleges.

Holders of FSLC, JSSC and S.75 have the highest percentage in the above table, indicating the entry behaviour of students into the Vocational Technical Colleges in Delta State.

Table 4.3: AREA OF SPECIALISATION/STUDIES BY RESPONDENTS

Category	Principal - 15		Teachers - 62		Students - 174		Total - 251	
	No.	%	No.	%	No.	%	No.	%
Business Education	2	13.33	25	40.32	90	51.72	117	46.61
Technical Education	2	13.33	20	32.26	50	28.74	72	28.69
Science Education	6	40.00	-	-	-	-	6	2.39
Arts Education	1	6.67	5	8.06	14	8.05	20	7.97
Home Economics	-	-	12	19.36	20	11.49	32	12.75
Mathematics Education	4	26.67	-	-	-	-	4	1.59

Table 4.3, clearly illustrates that only five of the principals (33.33%) specialized in Vocational Technical Education while majority of them (66.67%) specialised in Science and Mathematics Education. This is an ugly trend, which have to be changed if we must promote VTE programme in the Technical colleges. The remaining population of respondents are all Vocational Technical Education teachers and students. Note, it was only the VTE teachers that were sampled as a group for the study.

Table 4.4: TEACHING EXPERIENCE OF RESPONDENTS

Category	Principal - 15		Teachers - 62		Students - 174		Total - 251	
	No.	%	No.	%	No.	%	No.	%
1 - 3 years	-	-	-	-	-	-	-	-
4 - 6 years	-	-	2	3.23	-	-	2	2.60
7 - 9 years	-	-	20	32.26	-	-	20	25.97
10 - 12 years	-	-	35	56.45	-	-	35	45.45
13 - 15 years	5	33.33	5	8.06	-	-	10	10.99
16 - above	10	66.67	-	-	-	-	10	10.99

In table 4.4, 66.67% of the principals have put in 16 years and above in the service. On the Teachers, 96.77% of them had clocked between seven to fifteen years of teaching experience while only 3.23% of them are just very new in the service.

The situation above was as a result of the Delta State embargo on employment which has affected the recruitment of VTE teachers for the technical colleges, over the years. Unless drastic measures are taken to remedy the situation, in the nearest future, there would be a serious demand for VTE teachers in the Technical Colleges in Delta State.

Table 4.5: RESPONDENTS' SCHOOL'S POPULATION

Category	Principal - 15		Teachers - 62		Students - 174		Total - 251	
	No.	%	No.	%	No.	%	No.	%
0 - 200	-	-	-	-				
201 - 300	6	40.00	30	48.39	74	42.53	110	43.83
301 - 400	3	20.00	10	16.13	30	17.24	43	17.13
401 - 500	3.	20.00	10	16.13	30	17.24	43	17.13
501 - above	3	20.00	12	19.33	40	22.99	55	21.91

Table 4.5 shows that majority of the respondents, principals, teachers and students belong to schools with small population. In schools with small population, the Teacher-Pupil Ratio of 1:20 for VTE class as recommended by the NBTE might not be attained. Also the table revealed that the large schools are not adequately staffed with VTE teachers.

4.2 Answering Research Questions

Four research questions were formulated for this study. These are hereby tested as follows:-

Research Question 1:

What are the resources needed for the Vocational Technical Education programme in your Technical College?

The respondents answered the research questions using the open ended questions and some of the items in the questionnaire. The data were presented as follows:-

Table 4.6: RESOURCES NEEDED FOR VTE PROGRAMME IN THE TECHNICAL COLLEGES IN DELTA STATE

Category	Principal N = 15	Teachers N = 62	Students N = 174	Total N = 251
Qualified Teachers	5.53	5.31	5.40	5.41
Classroom, Workshops	4.73	4.61	4.58	4.64
Labs, Library	4.40	4.50	4.44	4.45
Tools & Equipment	4.33	4.31	4.40	4.35
Funding of Schools	5.73	5.61	5.81	5.72
Teaching materials	3.33	3.48	3.40	3.40
School inspection	2.60	2.21	2.81	2.54
Summated mean	30.69	30.05	30.84	30.50

Based on the data in the above Table 4.6, the respondents - Principals, Teachers and Students listed the items as the major resources needed in the Technical Colleges for the successful implementation of the VTE programme. Funding of school (5.70%) is rated highest, indicating that with adequate funding,

schools can procure every other materials needed in the colleges for the VTE programme. The demand for Teachers, Workshops, Laboratories, Library, tools and equipment were also rated high as needed in the colleges. School inspection and teaching materials were both rated lowest on the table.

Research Question 2:

How adequate are the available resources in your Technical College? List them.

The research question was answered with reference to the responses from the Principals, Teachers and students which appeared in the table below.

Table 4.7: RESOURCES AVAILABLE IN THE TECHNICAL COLLEGES IN DELTA STATE

Items	Principal N = 15	Teachers N = 62	Students N = 174	Total N = 251
Teachers	1.20	1.13	1.08	1.34
Classrooms *	4.53	4.10	4.01	4.21
Admin. Block *	4.80	4.19	4.14	4.38
Staff Quarters	2.13	2.26	2.04	2.14
Hostels *	4.58	4.36	4.25	4.38
Library	2.27	2.10	2.07	2.15
Tools and Equipment	1.60	1.45	1.17	1.41
Dinning Hall *	4.40	4.19	4.20	4.26
Football pitch *	4.47	4.52	4.39	4.46
Summated mean	29.93	28.30	27.35	28.73

With reference to the data on the above table 4.7, the respondents - Principals, Teachers and students rated such items like classrooms, Admin. Block, Hostels, Dinning Hall and Football pitch to be very high probably indicating the adequacy of those items in the Technical Colleges. Items such as Teachers, Tools and Equipment got the lowest rating from the respondents, probably indicating that they are very much inadequate in the colleges. The same explanation applies to the ratings on library and staff quarters. All the colleges had staff quarters for only the principal and vice principal while Library is an improvised classroom without necessary facilities, as observed during the Researcher's visit to the colleges.

It is pertinent to mention here that in Table 4.7, the most important resources needed for VTE programmes in the colleges such as Science Laboratories, Workshops, Consumable Materials, Instructional aid, Funding etc are not available in the Technical Colleges. Even Teachers, Library, Tools and Equipment included in the table are not adequate as illustrated by their ratings.

Research Question 3:

What is the level of academic performance of your college in NABTEB's examination?

The number 7 question in section A of the questionnaire is the same with the research question above and so both were treated as one. See respondents' answers below.

Table 4.8: ACADEMIC PERFORMANCE OF STUDENTS IN THE TECHNICAL COLLEGES

Category	Principal - 15		Teachers - 62		Students - 174		Total - 251	
	No.	%	No.	%	No.	%	No.	%
80%-100% (Excellent	-	-	-	-	-	-	-	-
70%-79% (V. Good)	-	-	-	-	-	-	-	-
60%-69% (Good)	-	-	-	-	-	-	-	-
50%-59% (Average)	-	-	-	-	-	-	-	-
40%-49% (Fair)	12	80.00	47	75.81	134	77.00	193	76.89
30%-39% (Poor)	3.	20.00	15	24.19	40	23.00	58	23.11
0%-29% (V. Poor)	-	-	-	-	-	-	-	-

Table 4.8 indicates it exposes the poor academic performance of the Technical Colleges in NABTEB's examinations. Their performance was quite below average. With reference to Appendix I in the thesis, you would discover that the poor academic performance of the colleges was not peculiar to only June, 1999 NABTEB's examination but for the past 5 years, the results of the colleges remained the same.

Research Question 4:

What measures can be recommended to improve the skills and academic standard in your college?

The above research question was answered using Table 4.9 below.

Table 4.9: MEASURES TO IMPROVE ACADEMIC STANDARD IN THE TECHNICAL COLLEGES

Items	Principal N = 15	Teachers N = 62	Students N = 174	Total N = 251
Adequate Teachers *	5.20	5.48	5.05	5.24
Incentives to Teachers	3.33	3.55	3.14	3.34
Adequate Workshop *	5.07	5.16	5.02	5.08
Adequate Electricity	1.13	1.19	1.07	1.13
Adequate Science Laboratories *	5.13	5.19	5.04	5.12
Adequate Tools & Equipment *	5.27	5.65	5.06	5.33
Adequate Consumable Materials	4.27	4.07	4.08	4.14
Public enlightenment on VTE	2.27	2.19	2.07	2.18
Public Library facilities	3.20	3.39	3.07	3.22
Tech. Colleges to run JSS programme	1.20	1.27	1.08	1.18
Adequate Funding *	5.27	5.81	5.06	5.17
Increase school inspection	2.07	2.03	2.01	2.04
Summated mean	43.41	44.98	41.75	43.17

Based on the data in the above table 4.9, the respondents rated very high, items such as Teachers, Workshops, Science Laboratories, adequate funding, tools and equipments, indicating the high level of importance of those resources

needed in the Technical colleges. Consumable materials, also are in that category, for its combined mean is as high as well. Next in the ranking are incentives to teachers and library facilities. Teachers actually needed improved condition of service to stem their exodus from the Unified Teaching Service to more lucrative jobs in other sectors of the economy.

Lowest in the respondents ratings were: Electricity, Technical Colleges to run JSS programme, increase school inspection, and public enlightenment on VTE. Electricity supply is important to run the machines in the workshops. A situation where Technical Colleges run their pre-vocational JSS programme, will undoubtedly, increase enrolment for the Technical colleges. In the same vein, public enlightenment in VTE, would have the same effect on increase in enrolment, for many people are still not aware that with VTE of today, a child acquires both academic and professional skills that can take him or her to tertiary institutions. School inspection is an area where the State Ministry of Education has been failing in her duty.

4.3 Testing Research Hypothesis

Hypothesis 1

There is no significant difference in the responses of Principals, Teachers and Students regarding the important resources needed for VTE programmes in the Technical Colleges in Delta State.

To test the hypothesis, ONEWAY ANOVA-F statistic was used. For computation, see Appendix 7.

Table 4.10: ANALYSIS OF VARIANCE FOR $Ho^{(1)}$

Sources of Variance S^2	Sum of Squares SS	Degree of Freedom df	Means Square Ms=SS/df	F. Ratio	F. Critical
Bgss	10.705	2	5.353		
Wgss	2704.681	248	10.906	.491	3.041
Total	2715.386	250			

F - calculated = .491 F-Critical = 3.041

F - calculated < F - critical (Table Value)

$\therefore$ $Ho^{(1)}$ is not rejected at α P = 0.05 significant level, the Null Hypothesis is accepted.

The analysis of Variance in table 4.10 above indicate that there is no significant difference between the statistical means (xs) of the group. It also indicate that the treatment has no effect and no bias in the scores.

It could thus be deduced from the analysis that the Null Hypothesis which states that "there is no significant difference in the responses of principals, teachers and students regarding the important resources needed for VTE programmes in the technical colleges", is accepted.

Hypothesis 2

There is no significant difference in the responses of the Principals, Teachers and Students regarding the adequacy of the available resources in the Technical colleges.

To test the Hypothesis, the ANOVA-F statistic was employed. For computation, see Appendix 7.

Table 4.11: ANALYSIS OF VARIANCE FOR $Ho^{(2)}$

Sources of Variance S^2	Sum of Squares SS	Degree of Freedom df	Means Square Ms=SS/df	F. Ratio	F. Critical
Bgss	13.359	2	6.680	.726	3.041
Wgss	2280.489	248	9.196		
Total	2293.849	250			

F = calculated = .726 F-Critical = 3.041

F - calculated < Table Value

$\therefore$ $Ho^{(2)}$ is not rejected at α P = 0.05 significant level, the Null Hypothesis is accepted.

This means that there is no significant difference between the statistical means (xs) of the three groups. It also indicate that the treatment has no effect and no bias on the scores.

This led to the acceptance of the Null Hypothesis which states that "there is no significant difference between the responses of the principals, teachers and students regarding the inadequacy of resources in the Technical colleges in Delta State."

Hypothesis 3

There is no significant difference in the responses of the principals, teachers and students regarding the factors affecting academic performance of students in Technical colleges in NABTEB's examinations.

The hypothesis was tested using oneway ANOVA. For computation, see Appendix 7 in the thesis.

Table 4.12: ANALYSIS OF VARIANCE FOR $Ho^{(3)}$

Sources of Variance S^2	Sum of Squares SS	Degree of Freedom df	Means Square Ms=SS/df	F. Ratio	F. Critical
Bgss	22.444	2	11.222	1.337	3.041
Wgss	2281.938	248	8.395		
Total	2104.382	250			

F - calculated = 1.337 F-Critical = 3.041

F - calculated < Table Value

$\therefore$ $Ho^{(3)}$ is not rejected at α P = 0.05 significant level, the Null Hypothesis is accepted.

Thus, the Null Hypothesis was not rejected and this implies that there is no significant difference between the statistical means (xs) of the groups. It also implies that the treatment has no effect and no bias in the scores.

It could thus be deduced from this analysis that the Null Hypothesis which states that "there is no significant difference in the responses of the principals, teachers and students regarding the identified causes responsible for the poor academic performance of the colleges in NABTEB's examinations", is accepted. They all agreed that the causes identified in the study are those responsible for the poor academic performance of students in the colleges.

Hypothesis 4

There is no significant difference in the responses of the principals, teachers and students on the measures recommended to improve the skills and academic standard of VTE programmes in the Technical colleges in Delta State.

The ANOVA-F statistic was used to test the above hypothesis. For computation, see Appendix 7.

Table 4.13: ANALYSIS OF VARIANCE FOR $Ho^{(4)M}$

Sources of Variance S^2	Sum of Squares SS	Degree of Freedom df	Means Square Ms=SS/df	F. Ratio	F. Critical
Bgss	39.852	2	19.926	1.973	3.041
Wgss	2504.698	248	10.100		
Total	2544.550	250			

F - calculated = 1.973 F-Critical = 3.041

F - calculated < Table Value

$\therefore$ $Ho^{(4)}$ is not rejected at α P = 0.05 significant level.

The Null Hypothesis is accepted.

The Null hypothesis was not rejected and this indicates that there is no significant difference between the statistical means (xs) of the three groups. It also implies that the treatment has no effect and no bias in the scores.

This led to the acceptance of the Null Hypothesis which states that "there is no significant difference in the responses of the principals, teachers and students regrading the measures recommended for improvement of the standard of VTE programme in the Technical colleges in Delta State." In other words, the respondents agreed in their responses that the recommendations in this study, if implemented by the State Ministry of Education, would undoubtedly improve the standard of VTE in the Technical Colleges in Delta State.

4.4 Summary

Finally, the responses of the principals, teachers and students was that the identified resources in this study, were very important for the VTE programme in the Technical Colleges in Delta State but that they were grossly inadequate in the colleges. Unfortunately, this had affected adversely, the academic performance of the Technical Colleges in NABTEB's examinations. Furthermore, the respondents recommended measures for the improvement of Vocational Technical Education in the Technical Colleges in Delta State.

CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The aim of the study was to assess the needs of the Technical Colleges in Delta State. It was designed to identify the most important resources needed for VTE programme and assess the level of adequacy of available resources in the Technical colleges in Delta State.

Efforts were also made in this study to find out the causes of poor academic performance of the Technical colleges in NABTEB's examinations. Measures were recommended for the improvement of the skills and academic standard of VTE programme in the Technical colleges.

After analyzing the data obtained from the questionnaires, this chapter therefore discusses, summarises and interprets the findings. Educational implications and recommendations were also made along with suggestions for further research in order that more details in these areas would be covered. In order to achieve the objectives of this study, four research questions and four null hypothesis were formulated.

5.2 Summary of Findings

Based upon the data collected and analysed, the following were the major findings of this study:-

1. The most essential resources needed by the Technical Colleges that were identified in this study are: Teachers, Workshops, Science Laboratories, Library, Typing and Technical Drawing studios, Tools and Equipment,

Consumable materials, Textbooks, Funding, Guidance Counselling and Effective supervision.

2. The study also reveals that the colleges lack most of the essential materials needed for their VTE programme and those that are available were inadequate for the programme.
3. It was also revealed in this study of the poor academic performance of the colleges in NABTEB external examinations. Apart from lack of essential materials, other factors identified as affecting academic performance were:- lack of seriousness on the job by Teachers, lack of supervision and poor academic background of students.
4. The study also revealed measures, recommended to improve the skills and academic standards of the Technical colleges. Apart from the provision of the essential resources, other recommendations were: improved condition of service for Teachers, public enlightenment on VTE programme, supply of stand-by plant and Technical colleges to run JSS pre-vocational classes.
5. It was found that students enrolment was dwindling in the colleges due mainly to the refusal of the Secondary School Principals to release JSS III graduates for Technical Colleges.
6. Scarcity of VTE teachers was attributed to poor condition of service and lucrative jobs in other sectors of the economy.
7. It was found that the public still perceive Technical Education as meant for drop-outs in the secondary schools.
8. The study reveals that the colleges do not have P.T.A., which would have assisted the colleges in fund raising.

5.3 Conclusions

The following conclusions were arrived at, based on the findings in this study:-

1. Ten resources were identified in the study as very important for the VTE programme in the Technical Colleges in Delta State.
2. The following resources listed in the study are inadequate in all the Technical Colleges. These are:- Science Laboratories, Workshops, Library, Technical Drawing studio, VTE Teachers, Funds Tools and Equipment, Consumable materials and Generating plant.
3. The study reveals that school inspectors from the State Ministry of Education no longer visits schools for inspection.
4. According to this study, Guidance Counselling services have also not received the required attention in the Technical Colleges.
5. The study shows that inadequate funding is affecting the colleges.
6. The study reveals that poor academic performance of the colleges in NABTEB examinations was attributed mainly to lack of essential resources, poor attitude of Teachers to work, lack of supervision and poor academic background of the students.
7. The study also reveals the following measures to improve the academic performance of the colleges. These are: provision of the most essential resources, improved condition of service of teachers, public enlightenment on VTE programme, supply of stand-by Generator and Technical Colleges to run JSS pre-vocational classes.

8. The study found that student enrolment into the Technical Colleges is on the decline.

9. It was found in the study that workshop practice is very irregular in the colleges due mainly to lack of electricity supply, consumable materials and equipment.

10. The study revealed that the Scarcity of Teachers in the colleges was attributed to poor condition of service, better remunerations in other sectors of the economy and embargo on employment by the State Government.

11. The study also revealed that there were uncompleted Steel Workshops numbering over eight, abandoned in each of the Technical Colleges.

5.4 Recommendations

Based on the findings and conclusions of this study, the following recommendations are put forward, that:-

1. The position of school inspectors be revived. The school inspectors should visit the colleges regularly and report their observations promptly to the State Ministry of Education for actions where the need arises. Effective supervision of principals, teachers and students on school records and methodology create effectiveness and efficiency on the part of the principals and teachers thereby reducing indiscipline amongst them.

2. The infrastructural facilities that are highly needed in the colleges are: Technical Workshops, Science Laboratories, Library facilities, Technical

Drawing studio, Typing studio, etc, efforts should be made by State Ministry of Education to provide them.

The Ministry to complete the abandoned steel workshops in the Technical colleges. Existing improvised laboratories, library, typing and technical drawing studios in the colleges be properly equipped and managed. In those colleges where none exist, arrangement should be made to provide them.

3. Electricity is a very important factor in the Technical colleges, for without which workshops practicals would not take place. The State Ministry of Education should supply stand-by Generators to all the Technical colleges as a supplement to NEPA, in case of power failure.

4. The provisions of consumable materials, working tools and equipment to the Technical colleges by the State Ministry of Education be revived, for without which meaningful workshop practice between Instructors, Demonstrators and students might not be possible. At the inception of the NPE, the Federal and State governments made provisions for consumable materials at N240.00 per annum per child to all the Technical colleges in the federation. Today, this incentive have stopped. The researcher is requesting that the Ministry of Education should revert to the status-quo to revive again the usual workshop practice in the Technical colleges.

6. There should be a definite plan for improvements in the quality of Vocational and Technical Teachers for the VTE programmes in the Technical colleges. According to Igie (1997), "The Federal and State

Ministries of Education may have to either use the F.C.E. (Technical), the Four World Bank Project Polytechnics at Uwani, Ado-Ekiti, Mubi and Bida and/or the Federal Technical College, Yaba as Centres, properly funded, equipped and staffed to undertake the training of potential instructors and VTE Teachers for the Technical Colleges.

The State government to complement the effort of the Federal Government on the TTTP programme by awarding scholarship to indigenes of the State to pursue VTE in tertiary institutions purposely to fill up the existing vacancies in the Technical colleges.

7. To arrest the drift of VTE teachers from the public service to more lucrative jobs in the private sectors, the State Ministry of Education has to make the condition of service of Teachers very attractive such that Technicians in the private sectors might even be attracted to take up teaching as their profession.

   Vocational Technical Education students on government scholarship should all be made to sign bond so as to enable them serve the Government for a specified period of time as stipulated in the bond. This measure will assist in restraining the VTE graduates from seeking for employment elsewhere other than the public service.

8. On funding:

   (i) Adequate funding from both Federal and State governments be made available to the Technical colleges to enable the school administrators run the colleges effectively as required by the NPE.

(ii) The colleges should form Parents Teachers Associations (P.T.A.) to serve as a source of Fund raising for the schools.

9. Principals and Teachers should be encouraged to attend seminar and workshops or conferences. Opportunities for in-service training should be granted to all categories of teachers. This will up-grade their academic qualifications and aptitude.

10. Teachers should be enlightened on the importance of Continuous Assessment of students' work as an integral part of the learning process.

11. Knowledgeable Guidance Counsellors should be appointed to provide counselling services in the Technical colleges such as assisting students in their career choice and making better use of their free period for creative activities.

12. The child should receive an all-round education, consequently therefore, Recreational facilities such as Indoor games, Table Tennis, Lawn Tennis, Basket Ball, Volley Ball, Football, Sports, etc, that are lacking in the Technical Colleges be provided so as to encourage the students in sports.

13. The State Ministry of Education should adopt the following measures to improve students enrolment into the Technical colleges in the State:

(a) The Technical colleges be allowed to run their own pre-vocational JSS programme. At the end of the three years JSS programme, the graduands will thereafter continue with the Vocational Technical programme.

(b) Principals of Secondary Schools should allow their JSSC students who wished to transfer to Technical colleges, to do so without any

hinderance. This is the essence of the 6-3-3-4 education policy.

(c) The State Ministry of Education should embark on public enlightenment campaign programme on the benefit of Technical Education accruing to both the individual and the nation.

Many parents and guardian are still living in the past, sticking to the old perception of Technical Education. Many of them are not aware that their Wards passing through Technical Schools of today, can use the NABTEB's NBC and NTC Certificates acquired from there, to enter the University, through JAMB.

14. The State Ministry of Education should increase the number of Technical colleges in the State.

A situation where the State has over 1,000 secondary schools as compared with only six Technical Colleges in the State does not augur well to the growth of Technical Education in the State and the nation.

Finally, the State Ministry of Education should provide the much needed human, material and financial resources to the Technical Colleges so as to bring them to the required standard as recommended by the National Policy on Education, otherwise students in the Technical colleges will pass out without the necessary acquisition of skill, which is the main objectives of Technical Education. Furthermore, it will improve on the academic performance of the Technical colleges.

5.5 Recommendations for further Research

1. A replication of this study is recommended to be undertaken in other States of the federation as a basis for comparison for the findings of this study in order that a situational report may be obtained for the country.
2. A similar research is recommended to be conducted with reference to the Federal Vocational and Technical Colleges as a basis of comparison as well.
3. There is need to conduct a follow-up, study of this nature, in at least, five years time to establish the extent of improvement on the present situation.

5.6 Implication for Classroom Instruction

The inadequacy of instructional materials for vocational and technical subjects had reduced to a great extent the effectiveness of both classroom instruction and workshop practice. Efforts should therefore, be made to remedy the situation

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NABTEB'S EXAMINATION RESULTS FROM 1995 TO 1999

Names of Technical Colleges	1995			1996			1997			1998			1999		
	No. Reg.	No. Passed	% Passed	No. Reg	No. Passed	% Passed	No. Reg	No. Passed	% Passed	No. Reg	No. Passed	% Passed	No. Reg	No. Passed	% Passed
1. ATC, Agbor	64	25	39.1	53	20	37.7	48	22	45.8	61	28	45.9	56	23	41.1
2. ITC, Isele-Uku	57	21	36.8	48	19	39.6	61	28	45.9	58	25	43.1	52	24	46.2
3. STC, Sapele	98	44	44.9	110	38	34.6	88	37	42.1	124	59	47.6	108	41	38.2
4. OTC Ofagbe, Ozoro	51	22	43.1	48	19	39.6	62	26	41.9	54	26	48.1	49	24	48.9
5. OTC, Ughelli	45	17	39.8	58	26	44.8	48	17	35.4	60	28	46.7	39	15	46.2
6. UTC, Kwale	34	16	47.1	25	9	36	23	10	43.5	30	14	46.6	40	17	42.5

Source: Examination & Standard Division, Ministry of Education, Asaba, Delta State

APPENDIX 1(B)

TABLE XX

Table for Determining Sample Size from a Given Population

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	336
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note.—*N* is population size.
S is sample size.

Source: KREJCIE, R.V. & MORGAN W.D (1970: 608)

APPENDIX 2

DATA USED FOR RESEARCH QUESTIONS

RESPONSES ON RESEARCH QUESTION 1

RESOURCES NEEDED FOR VTE PROGRAMME

Category	Principals N = 15	Teachers N = 62	Students N = 174
Qualified Teacher	83	329	940
Classrooms, Workshops	71	286	797
Labs, Library	66	279	773
Tools and Equipment	65	267	766
Funding of Schools	86	348	1010
Teaching Materials	50	216	592
School Inspection	35	137	488

RESPONSES ON RESEARCH QUESTION 2

RESOURCES AVAILABLE IN THE TECHNICAL COLLEGES

Category	Principals N = 15	Teachers N = 62	Students N = 174
Teachers	18	70	187
Classrooms	68	254	698
Admin. Blocks	82	260	720
Staff Quarters	32	140	354
Hostels	68	270	740
Library	34	130	360
Tools & Equipment	24	90	204
Dinning Hall	66	260	730
Football Pitch	67	280	764

RESPONSES ON RESEARCH QUESTION 4

MEASURES RECOMMENDED TO IMPROVE VTE IN DELTA STATE

Category	Principals N = 15	Teachers N = 62	Students N = 174
Adequate Teachers	78	340	879
Incentives to Teachers	50	220	546
Adequate Workshop	76	320	874
Adequate Electricity	17	70	186
Adequate Science Laboratories	77	322	876
Adequate Tools & Equipment	79	350	880
Adequate Consumable Materials	64	252	710
Public enlightenment on VTE	34	136	360
Public Library facilities	48	210	534
Tech. Colleges to run JSS programme	18	79	187
Adequate Funding	79	360	880
Increase school inspection	31	126	350

APPENDIX 3(a)

PRINCIPALS' RESPONSE SCORES TO VARIABLE ONE

PRINCIPAL	ITEM 1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
1	1	1	2	1	1	1	1	1	2	1	2	10
2	2	3	5	1	1	1	2	2	3	2	3	15
3	1	2	3	1	1	1	1	1	2	3	2	12
4	1	1	2	1	1	1	1	1	2	2	2	11
5	1	1	2	1	3	1	1	1	2	3	3	15
6	1	1	2	1	1	1	1	1	2	2	2	11
7	1	1	2	1	2	1	1	1	2	1	1	10
8	1	1	2	1	2	1	1	2	2	2	1	12
9	2	2	4	1	1	1	1	1	3	2	3	13
10	1	1	2	1	1	1	1	1	3	1	2	11
11	1	1	2	1	1	1	1	1	2	2	2	11
12	1	1	2	1	1	1	1	1	1	2	2	10
13	1	1	2	1	1	1	1	1	1	1	3	10
14	1	2	3	1	3	1	1	1	3	1	3	14
15	1	1	2	1	1	1	1	1	1	1	1	8
	17	20	37	15	21	15	16	17	31	26	32	173

APPENDIX 3(b)

TEACHERS' RESPONSE SCORES TO VARIABLES ONE

TEACHERS	ITEM 1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
1	1	2	3	3	2	1	1	1	2	1	2	13
2	1	1	2	1	1	1	1	1	2	1	1	9
3	2	2	4	2	1	2	2	2	2	2	2	15
4	1	1	2	1	1	1	1	1	1	1	1	8
5	1	3	4	1	1	1	1	1	3	1	1	10
6	1	1	2	1	2	1	2	2	2	2	2	14
7	1	5	6	1	1	5	1	1	5	1	1	16
8	1	2	3	1	1	1	1	1	3	1	1	10
9	1	2	3	1	1	1	1	1	2	1	2	10
10	1	2	3	1	1	1	1	2	1	1	1	9
11	1	1	2	1	1	1	1	1	1	1	1	8
12	1	1	2	1	1	1	1	1	1	2	2	10
13	1	1	2	1	1	1	1	2	4	2	2	14
14	1	2	3	1	2	1	1	1	2	1	1	10
15	1	1	2	1	2	1	1	1	2	2	1	11
16	1	1	2	1	2	1	1	1	5	2	1	14
17	1	1	2	1	1	2	1	1	2	2	1	11
18	2	2	4	1	1	1	2	1	3	2	3	14
19	1	1	2	1	1	1	1	1	2	1	1	9
20	1	1	2	1	1	1	1	1	2	1	2	10
21	1	2	3	1	2	1	1	1	3	2	5	16
22	2	1	3	2	1	2	1	2	1	1	2	12
23	1	1	2	1	2	3	1	2	2	2	2	15
24	1	2	3	1	2	2	1	1	3	2	2	14
25	1	2	3	1	2	1	1	2	3	2	2	14
26	1	2	3	1	1	2	2	1	4	3	3	17
27	1	1	2	1	1	1	1	1	5	2	2	14
28	1	2	3	1	2	1	1	1	2	2	2	12
29	1	1	2	1	2	1	1	3	3	1	2	12
30	1	4	5	1	1	1	1	4	1	1	2	12
31	1	2	3	1	2	1	1	1	3	2	1	12
32	2	3	5	1	1	2	1	1	3	2	3	13
33	1	1	2	2	2	1	1	2	3	1	2	14
34	2	1	3	1	2	1	1	1	4	2	2	14
35	1	3	4	1	1	1	1	1	3	2	3	13
36	2	1	3	1	1	1	1	1	2	1	1	9
37	1	1	2	1	1	1	1	1	2	2	1	12
38	1	2	3	1	1	1	1	1	2	1	1	9
39	1	1	2	1	2	1	1	1	4	3	4	17
40	1	1	2	1	2	1	1	1	4	3	2	15
41	1	3	4	1	1	1	1	1	2	1	1	9
42	1	1	2	1	1	1	1	1	1	1	1	8
43	1	3	4	1	1	1	1	1	2	1	1	9
44	1	2	3	1	2	1	1	1	2	2	1	11
45	1	2	3	1	2	1	1	1	2	1	2	11
46	1	2	3	1	1	1	1	1	5	1	1	12
47	1	1	2	1	1	1	2	3	3	1	1	13
48	1	1	2	1	2	1	1	1	1	1	1	9
49	1	3	4	1	1	1	1	1	4	3	5	17
50	1	1	2	1	1	1	1	1	3	2	2	12

APPENDIX 3(b) CONTINUES

TEACHERS	ITEM 1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
51	1	1	2	1	2	1	1	1	3	1	1	11
52	1	1	2	1	1	1	1	1	2	1	1	9
53	1	1	2	1	1	1	1	1	4	1	2	12
54	2	1	3	2	2	3	2	1	4	3	3	20
55	2	2	4	1	2	1	1	2	3	2	3	15
56	2	3	5	3	2	2	1	1	3	1	1	14
57	1	2	3	1	1	1	1	1	2	1	1	9
58	1	2	3	1	3	1	1	1	3	3	2	15
59	2	2	4	1	1	1	1	1	3	1	1	10
60	1	2	3	1	2	1	1	1	2	2	3	13
61	1	3	4	1	1	1	1	1	3	1	1	10
62	1	2	3	1	1	1	1	1	1	1	1	8
	72	108	180	70	88	77	68	76	172	97	108	756

APPENDIX 3(c)

STUDENTS' RESPONSE SCORES TO VARIABLES ONE

STUDENTS	ITEM 1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
1	1	2	3	3	2	1	1	1	2	1	2	13
2	1	1	2	1	1	1	1	1	2	1	1	9
3	2	2	4	2	1	2	2	2	2	2	2	15
4	1	1	2	1	1	1	1	1	1	1	1	6
5	1	3	4	1	1	1	1	1	3	1	1	10
6	1	1	2	1	2	1	2	2	2	2	2	14
7	1	5	6	1	1	5	1	1	5	1	1	16
8	1	2	3	1	1	1	1	1	3	1	1	10
9	1	2	3	1	1	1	1	1	2	1	2	10
10	1	2	3	1	1	1	1	2	1	1	1	9
11	1	1	2	1	1	1	1	1	1	1	1	8
12	1	1	2	1	1	1	1	1	1	2	2	10
13	1	1	2	1	1	1	1	2	4	2	2	14
14	1	2	3	1	2	1	1	1	2	1	1	10
15	1	1	2	1	2	1	1	1	2	2	1	11
16	1	1	2	1	2	1	1	1	5	2	1	14
17	1	1	2	1	1	2	1	1	2	2	1	11
18	2	2	4	1	1	1	2	1	3	2	3	14
19	1	1	2	1	1	1	1	1	2	1	1	9
20	1	1	2	1	1	1	1	1	2	1	2	10
21	1	2	3	1	2	1	1	1	3	2	5	16
22	2	1	3	2	1	2	1	2	1	1	2	12
23	1	1	2	1	2	3	1	2	2	2	2	15
24	1	2	3	1	2	2	1	1	3	2	2	14
25	1	2	3	1	2	1	2	2	3	2	2	14
26	1	2	3	1	1	2	1	1	4	3	3	17
27	1	1	2	1	1	1	1	1	5	3	2	14
28	1	2	3	1	2	1	1	1	2	2	2	12
29	1	1	2	1	2	1	1	1	3	1	2	12
30	1	4	5	1	1	1	1	4	1	1	2	12
31	1	2	3	1	2	1	1	1	3	2	1	12
32	2	3	5	1	1	2	1	1	3	2	2	13
33	1	1	2	1	1	1	1	1	1	2	1	9
34	1	1	2	2	1	2	1	1	1	1	1	10
35	1	1	2	1	1	1	1	2	1	2	2	11
36	1	2	3	2	2	1	1	2	3	1	2	14
37	2	1	3	1	2	1	1	1	4	2	2	14
38	1	3	4	1	1	1	1	1	3	2	3	13
39	2	1	3	1	1	1	1	1	2	1	1	9
40	1	1	2	1	1	1	1	1	2	2	1	10
41	1	2	3	1	1	1	1	1	2	1	1	9
42	1	1	2	1	2	1	1	1	4	3	4	17
43	2	1	3	1	2	1	1	1	4	3	2	16
44	1	3	4	1	1	1	1	1	2	1	1	9
45	1	1	2	1	1	1	1	1	1	1	1	8
46	1	3	4	1	1	1	1	1	2	1	1	9
47	1	2	3	1	2	1	1	1	2	2	1	11
48	1	2	3	1	2	1	1	1	2	1	2	11
49	1	2	3	1	1	1	1	1	5	1	1	12
50	3	1	4	1	1	1	2	3	3	1	1	13

APPENDIX 3(c) CONTINUES

STUDENTS	ITEM 1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
51	1	1	2	1	2	3	1	1	2	1	1	12
52	1	3	4	1	1	1	1	1	4	3	5	17
53	1	1	2	1	1	1	1	1	3	2	2	12
54	1	1	2	1	2	1	1	1	3	1	1	11
55	1	3	4	1	1	2	1	1	2	1	1	11
56	1	1	2	1	3	1	1	1	4	1	2	12
57	2	1	3	2	1	3	1	1	4	3	3	20
58	2	2	4	1	2	1	1	1	3	2	3	15
59	2	3	5	3	1	2	1	1	3	1	1	14
60	1	2	3	1	1	1	2	1	2	1	3	15
61	1	2	3	1	1	1	1	2	3	3	2	15
62	2	2	4	2	1	1	3	1	3	3	1	16
63	1	2	3	1	1	1	1	2	2	2	3	13
64	1	3	4	3	1	1	1	1	3	1	1	13
65	1	2	3	1	1	1	1	2	3	2	2	12
66	1	1	2	1	1	1	1	1	2	1	1	9
67	1	2	3	1	1	1	1	1	1	1	1	8
68	1	2	3	1	1	1	1	1	1	1	1	8
69	1	1	2	2	1	1	1	1	1	1	1	9
70	1	1	2	1	1	1	1	1	1	1	1	8
71	2	1	3	1	1	1	1	1	1	1	1	8
72	1	1	2	1	1	1	1	1	1	1	1	8
73	1	1	2	1	2	1	1	1	1	1	1	9
74	1	2	3	1	1	1	1	1	1	1	2	9
75	1	1	2	1	1	1	1	1	1	2	2	10
76	1	2	3	3	2	1	1	1	2	1	2	13
77	2	1	2	1	1	1	1	1	2	1	1	9
78	1	2	4	2	1	2	2	2	2	2	2	15
79	1	1	2	1	1	1	1	1	1	1	1	8
80	1	3	4	1	1	1	1	1	3	1	1	10
81	1	1	2	1	2	1	2	2	2	2	2	14
82	1	5	6	1	1	5	1	1	5	1	1	16
83	1	2	3	1	1	1	1	1	3	1	1	10
84	1	2	3	1	1	1	1	1	2	1	2	10
85	1	2	3	1	1	1	1	2	1	1	1	9
86	1	1	2	1	1	1	1	1	1	1	1	8
87	1	1	2	1	1	1	1	1	1	2	2	10
88	1	1	2	1	1	1	1	2	4	2	2	14
89	1	2	3	1	2	1	1	1	2	1	1	10
90	1	1	2	1	2	1	1	1	2	2	1	11
91	1	1	2	1	2	1	1	1	5	2	1	14
92	1	1	2	1	1	2	1	1	2	2	1	11
93	2	2	4	1	1	1	2	1	3	2	3	14
94	1	1	2	1	1	1	1	1	2	1	1	9
95	1	1	2	1	1	1	1	1	2	1	2	10
96	1	2	3	1	2	1	1	1	3	2	5	16
97	2	1	3	2	1	2	1	2	1	1	2	12
98	1	1	2	1	2	3	1	2	2	2	2	15
99	1	2	3	1	2	2	1	1	3	2	2	14
100	1	2	3	1	2	1	1	2	3	2	2	14

APPENDIX 3(c) CONTINUES

STUDENTS	ITEM 1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
101	1	2	3	1	1	2	2	1	4	3	3	17
102	1	1	2	1	1	1	1	1	5	2	2	14
103	1	2	3	1	2	1	1	1	2	2	2	12
104	1	1	2	1	2	1	1	3	3	1	2	12
105	1	4	5	1	1	1	1	4	1	1	2	12
106	1	2	3	1	2	1	1	1	3	2	1	12
107	2	3	5	1	1	2	1	1	3	2	2	13
108	1	1	2	1	1	1	1	1	2	1	1	9
109	1	2	3	1	1	1	1	2	1	1	2	10
110	1	1	2	2	2	1	1	2	3	1	2	14
111	1	1	2	1	1	1	1	1	1	1	1	8
112	2	1	3	1	2	1	1	1	4	2	2	14
113	1	3	4	1	1	1	1	1	3	2	3	13
114	2	1	3	1	1	1	1	3	2	1	1	19
115	1	1	2	1	1	1	1	1	2	2	1	10
116	1	2	3	1	3	1	1	3	2	1	1	13
117	1	1	2	1	2	1	1	1	4	3	4	17
118	1	1	2	1	2	1	1	1	4	3	2	15
119	1	3	4	1	3	1	1	3	2	1	1	13
120	1	1	2	1	1	1	1	1	3	1	1	11
121	1	3	4	1	3	1	3	1	2	3	1	15
122	1	2	3	1	2	1	1	1	2	2	1	11
123	1	2	3	1	2	1	1	1	2	1	2	11
124	1	2	3	1	1	1	1	1	5	1	1	12
125	3	3	6	1	1	1	2	3	3	1	1	13
126	1	1	2	1	2	1	1	1	3	1	1	19
127	1	3	4	1	1	1	1	1	4	3	5	17
128	1	1	2	1	1	1	1	1	3	2	2	12
129	1	1	2	1	2	1	1	1	3	1	1	11
130	3	3	6	3	1	3	1	1	2	3	3	17
131	1	1	2	1	1	1	1	1	4	1	2	12
132	2	3	5	2	2	3	2	1	4	3	3	20
133	2	2	4	1	2	1	1	2	3	2	3	15
134	2	3	5	3	2	2	1	1	3	1	1	14
135	1	2	3	3	1	3	1	1	2	3	3	17
136	1	2	3	1	3	1	1	1	3	3	2	15
137	2	2	4	1	1	1	1	1	3	1	1	10
138	3	2	5	1	2	1	1	1	2	2	3	13
139	1	3	4	1	1	3	3	1	3	1	3	16
140	1	2	3	3	1	1	3	1	3	1	1	14
141	1	1	2	1	1	1	1	1	1	1	1	8
142	1	1	2	1	2	1	1	1	1	1	1	9
143	1	2	3	1	1	1	1	1	1	1	1	8
144	1	2	3	1	1	1	1	1	1	1	1	8

APPENDIX 3(c) CONTINUES

STUDENTS	ITEM 1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
145	1	1	2	1	1	1	1	1	1	1	1	8
146	1	2	3	1	1	1	1	2	2	1	1	10
147	1	1	2	1	1	1	1	1	1	1	1	9
148	1	2	3	1	1	1	1	1	1	1	1	8
149	1	1	2	1	1	1	1	1	1	1	1	8
150	1	1	2	1	1	1	1	1	1	1	1	8
151	1	1	2	1	1	1	1	1	1	1	1	8
152	1	2	3	1	2	2	1	1	1	1	1	10
153	1	1	2	1	1	1	1	1	1	1	1	8
154	1	1	2	1	1	1	1	1	1	1	1	8
155	1	1	2	1	1	1	1	1	1	1	1	8
156	1	1	2	1	1	1	1	1	1	1	1	8
157	1	2	3	1	1	1	1	1	1	1	1	8
158	1	2	3	1	1	1	1	1	1	1	1	8
159	1	1	2	1	2	2	1	1	1	1	1	10
160	1	1	2	1	1	1	1	1	1	1	1	8
161	1	1	2	1	1	1	1	1	1	1	1	8
162	1	2	3	1	1	1	1	1	1	1	1	8
163	1	2	3	1	1	1	1	1	1	1	1	8
164	1	1	2	1	1	1	1	1	1	1	1	8
165	1	1	2	1	1	1	1	1	1	1	1	8
166	1	1	2	1	1	1	1	1	1	1	1	8
167	1	1	2	1	1	1	1	1	1	1	1	8
168	1	2	3	1	1	2	1	1	2	1	2	11
169	1	1	2	1	1	1	1	1	1	1	2	9
170	1	1	2	1	1	1	1	1	2	1	2	10
171	1	2	3	1	1	1	1	1	1	1	1	8
172	1	2	3	1	1	1	1	1	2	1	1	9
173	1	1	2	1	1	1	1	1	2	1	2	10
174	1	2	3	2	1	1	1	1	1	1	2	10
	204	272	466	202	239	217	196	214	406	256	284	2512

APPENDIX 4(a)

PRINCIPALS' RESPONSE SCORES TO VARIABLE TWO

PRINCIPAL	ITEM 1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
1	1	1	2	1	1	1	1	1	2	1	2	10
2	2	3	5	1	1	1	2	2	3	2	3	15
3	1	2	3	1	1	2	2	1	2	1	2	12
4	1	1	2	1	1	1	1	1	2	2	2	11
5	2	2	4	1	1	2	2	1	2	1	1	13
6	1	1	2	1	1	1	1	1	2	2	2	11
7	1	1	2	1	2	1	1	1	2	1	1	10
8	1	1	2	1	2	1	1	2	2	2	1	12
9	2	2	4	1	1	1	1	1	3	2	3	13
10	1	1	2	1	1	1	1	2	3	2	2	13
11	1	1	2	1	1	1	1	1	2	2	2	11
12	1	1	2	1	1	1	1	2	2	2	2	12
13	2	2	4	2	2	1	1	1	1	1	1	10
14	1	2	3	1	3	1	1	1	3	1	3	14
15	1	1	2	2	2	1	1	1	1	1	1	10
	19	22	41	17	21	17	18	19	32	23	30	177

APPENDIX 4(b)

TEACHERS' RESPONSE SCORES TO VARIABLE TWO

TEACHERS	ITEM 1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
1	1	2	3	3	2	1	1	1	2	1	2	13
2	1	1	2	1	1	1	1	1	2	1	1	9
3	2	2	4	2	1	2	2	2	2	2	2	15
4	1	1	2	1	1	1	1	1	1	1	1	8
5	1	3	4	1	1	1	1	1	3	1	1	10
6	1	1	2	1	2	1	2	2	2	2	2	14
7	1	5	6	1	1	5	1	1	5	1	1	16
8	1	2	3	1	1	1	1	1	3	1	1	10
9	1	2	3	1	1	1	1	1	2	1	2	10
10	1	2	3	1	1	1	1	2	1	1	1	9
11	1	1	2	1	1	1	1	1	1	1	1	8
12	1	1	2	1	1	1	1	1	1	2	2	10
13	1	1	2	1	1	1	1	2	4	2	2	14
14	1	2	3	1	2	1	1	1	2	1	1	10
15	1	1	2	1	2	1	1	1	2	2	1	11
16	1	1	2	1	2	1	1	1	5	2	1	14
17	1	1	2	1	1	2	1	1	2	2	1	11
18	2	2	4	1	1	1	2	1	3	2	3	14
19	1	1	2	1	1	1	1	1	2	1	1	9
20	1	1	2	1	1	1	1	1	2	1	2	10
21	1	2	3	1	2	1	1	1	3	2	5	16
22	2	1	3	2	1	2	1	2	1	1	3	12
23	1	1	2	1	2	3	1	2	2	2	2	15
24	1	2	3	1	2	2	1	1	3	3	2	14
25	1	2	3	1	2	1	1	2	3	2	2	14
26	1	2	3	1	1	2	2	1	4	3	3	17
27	1	1	2	1	1	1	1	1	5	3	2	14
28	1	2	3	1	2	1	1	1	2	2	2	12
29	1	1	2	1	2	1	1	3	3	1	2	12
30	1	4	5	1	1	1	1	4	1	1	2	12
31	1	2	3	1	2	1	1	1	3	2	1	12
32	2	3	5	1	1	2	1	1	3	2	2	13

APPENDIX 4(b) CONTINUES

TEACHERS	ITEM 1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
33	1	2	3	2	2	1	1	2	3	1	2	14
34	2	1	3	1	2	1	1	1	4	2	2	14
35	1	3	4	1	1	1	1	1	3	2	3	13
36	2	1	3	1	1	1	1	1	2	1	1	9
37	1	1	2	1	1	1	1	1	2	2	1	10
38	2	2	4	1	1	1	1	1	2	1	1	9
39	1	1	2	1	2	1	1	1	4	3	4	17
40	1	1	2	1	2	1	1	1	4	3	2	15
41	1	3	4	1	1	1	1	1	2	1	1	9
42	1	1	2	1	1	1	1	2	1	2	1	10
43	1	3	4	1	1	1	1	2	2	1	1	10
44	1	2	3	1	2	1	1	1	2	2	1	11
45	1	2	3	1	2	1	1	1	2	1	2	11
46	1	2	3	1	1	1	1	1	5	2	2	12
47	1	1	2	1	1	1	2	3	3	1	1	13
48	2	1	3	2	2	2	1	1	2	1	1	12
49	1	3	4	1	1	1	1	1	4	3	5	17
50	1	1	2	1	2	1	2	1	3	2	2	14
51	1	1	2	1	2	1	1	1	3	1	1	11
52	1	1	2	1	1	1	1	1	2	1	1	9
53	1	2	3	1	1	1	1	1	4	1	2	12
54	2	1	3	2	2	3	2	1	4	3	3	20
55	2	2	4	1	2	1	1	2	3	2	3	15
56	2	3	5	3	2	2	1	1	3	1	1	14
57	1	2	3	1	1	1	1	1	2	1	1	9
58	1	2	3	1	3	1	1	1	3	3	2	15
59	2	2	4	1	2	1	2	1	3	1	2	16
60	1	2	3	1	2	1	1	1	2	2	3	13
61	1	3	4	1	1	1	1	1	3	1	1	10
62	1	2	3	2	1	2	1	1	2	1	1	11
	74	110	184	72	90	79	70	78	174	99	110	772

APPENDIX 4(c)

STUDENTS' RESPONSE SCORES TO VARIABLE TWO

STUDENTS	ITEM1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
1	1	2	3	3	2	1	1	1	2	1	2	13
2	1	1	2	1	1	1	1	1	2	1	1	9
3	2	2	4	2	1	2	2	2	2	2	2	15
4	1	1	2	1	1	1	1	1	1	1	1	8
5	1	3	4	1	1	1	1	1	3	1	1	10
6	1	1	2	1	2	1	2	2	2	2	2	14
7	1	5	6	1	1	5	1	1	5	1	1	16
8	1	2	3	1	1	1	1	1	3	1	1	10
9	1	2	3	1	1	1	1	1	2	1	2	10
10	1	2	3	1	1	1	1	2	1	1	1	9
11	1	1	2	1	1	1	1	1	1	1	1	8
12	1	1	2	1	1	1	1	1	1	2	2	10
13	1	1	2	1	1	1	1	2	4	2	2	14
14	1	2	3	1	2	1	1	1	2	1	1	10
15	1	1	2	1	2	1	1	1	2	2	1	11
16	1	1	2	1	2	1	1	1	5	2	1	14
17	1	1	2	1	1	2	1	1	2	2	1	11
18	2	2	4	1	1	1	2	1	3	2	3	14
19	1	1	2	1	1	1	1	1	2	1	1	9
20	1	1	2	1	1	1	1	1	2	1	2	10
21	1	2	3	1	2	1	1	1	3	2	5	16
22	2	1	3	2	1	2	1	2	1	1	2	12
23	1	1	2	1	2	3	1	2	2	2	2	15
24	1	2	3	1	2	2	1	1	3	2	2	14
25	1	2	3	1	2	1	1	2	3	2	2	14
26	1	2	3	1	1	2	2	1	4	3	3	17
27	1	1	2	1	1	1	1	1	5	2	2	14
28	1	2	3	1	2	1	1	1	2	2	2	12
29	1	1	2	1	2	1	1	3	3	1	2	12
30	1	4	5	1	1	1	1	4	1	1	2	12
31	1	2	3	1	2	1	1	1	3	2	1	12
32	2	3	5	1	1	2	1	1	3	2	2	13
33	1	1	2	1	1	1	1	1	1	2	1	9
34	1	1	2	2	1	2	1	1	1	1	1	10
35	1	1	2	1	1	1	1	2	1	2	2	11

APPENDIX 4(c) CONTINUES

STUDENTS	ITEM1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
36	1	2	3	1	2	1	1	2	3	1	2	14
37	2	1	3	1	2	1	1	1	4	2	2	14
38	1	3	4	1	1	1	1	1	3	2	3	13
39	2	1	3	1	1	1	1	1	2	1	1	9
40	1	1	2	1	1	1	1	1	2	2	1	10
41	1	2	3	1	1	1	1	1	2	1	1	9
42	1	1	2	1	2	1	1	1	4	3	4	17
43	2	1	3	1	2	1	1	1	4	3	2	15
44	1	3	4	1	1	1	1	1	2	1	1	9
45	1	1	2	1	1	1	1	1	1	1	1	8
46	1	3	4	1	1	1	1	1	2	1	1	9
47	1	2	3	1	2	1	1	1	2	2	1	11
48	1	2	3	1	2	1	1	1	2	1	2	11
49	1	2	3	1	1	1	1	1	5	1	1	12
50	3	1	4	1	1	3	2	3	3	1	1	13
51	1	1	2	1	2	1	1	1	2	1	1	12
52	1	3	4	1	1	1	1	1	4	3	5	17
53	1	1	2	1	1	1	1	1	3	2	2	12
54	1	1	2	1	2	2	1	1	3	1	1	11
55	1	3	4	1	2	1	1	1	2	1	1	11
56	1	1	2	1	1	3	1	1	4	1	2	12
57	2	1	3	2	2	1	2	1	4	3	3	20
58	2	2	4	1	2	2	1	2	3	2	3	15
59	2	3	5	3	2	1	1	1	3	1	1	14
60	1	2	3	1	3	1	2	2	2	1	3	15
61	1	2	3	1	3	1	1	1	3	3	2	15
62	2	2	4	2	1	1	3	2	3	3	1	16
63	1	2	3	1	2	1	1	1	2	2	3	13
64	1	3	4	3	1	1	1	2	3	1	1	13
65	1	2	3	1	1	1	1	1	3	2	2	12
66	1	1	2	1	1	1	1	1	2	1	1	9
67	1	2	3	1	1	1	1	1	1	1	1	8
68	1	2	3	1	1	1	1	1	1	1	1	8
69	1	1	2	2	1	1	1	1	1	1	1	9
70	1	1	2	1	1	1	1	1	1	1	1	8
71	2	1	3	1	1	1	1	1	1	1	1	8
72	1	1	2	1	1	1	1	1	1	1	1	8

APPENDIX 4(c) CONTINUES

STUDENTS	ITEM1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
73	1	1	2	1	2	1	1	1	1	1	1	9
74	1	2	3	1	1	1	1	1	1	1	2	9
75	1	1	2	1	1	1	1	1	1	2	2	10
76	1	2	3	3	2	1	1	1	2	1	2	13
77	1	1	2	1	1	1	1	1	2	1	1	9
78	2	2	4	2	1	2	2	2	2	2	2	15
79	1	1	2	1	1	1	1	1	1	1	1	8
80	1	3	4	1	1	1	1	1	3	1	1	10
81	1	1	2	1	2	1	2	2	2	2	2	14
82	1	5	6	1	1	5	1	1	5	1	1	16
83	1	2	3	1	1	1	1	1	3	1	1	10
84	1	2	3	1	1	1	1	1	2	1	2	10
85	1	2	3	1	1	1	1	2	1	1	1	9
86	1	1	2	1	1	1	1	1	1	1	1	8
87	1	1	2	1	1	1	1	1	1	2	2	10
88	1	1	2	1	1	1	1	2	4	2	2	14
89	1	2	3	1	2	1	1	1	2	1	1	10
90	1	1	2	1	2	1	1	1	2	2	1	11
91	1	1	2	1	2	1	1	1	5	2	1	14
92	1	1	2	1	1	2	1	1	2	2	1	11
93	2	2	4	1	1	1	2	1	3	2	3	14
94	1	1	2	1	1	1	1	1	2	1	1	9
95	1	1	2	1	1	1	1	1	2	1	2	10
96	1	2	3	1	2	1	1	1	3	2	5	16
97	2	1	3	2	1	2	1	2	1	1	2	12
98	1	1	2	1	2	3	1	2	2	2	2	15
99	1	2	3	1	2	2	1	1	3	2	2	14
100	1	2	3	1	2	1	1	2	3	2	2	14
101	1	2	3	1	1	2	2	1	4	3	3	17
102	1	1	2	1	1	1	1	1	5	2	2	14
103	1	2	3	1	2	1	1	1	2	2	2	12
104	1	1	2	1	2	1	1	3	3	1	2	12
105	1	4	5	1	1	1	1	4	1	1	2	12
106	1	2	3	1	2	1	1	1	3	2	1	12
107	2	3	5	1	1	2	1	1	3	2	2	13
108	1	1	2	1	1	1	1	1	2	1	1	9
109	1	2	3	1	1	1	1	2	1	1	2	10

APPENDIX 4(c) CONTINUES

STUDENTS	ITEM1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
110	1	1	2	2	2	1	1	2	3	1	2	14
111	1	1	2	1	1	1	1	1	1	1	1	8
112	2	1	3	1	2	1	1	1	4	2	2	14
113	1	3	4	1	1	1	1	1	3	2	3	13
114	2	1	3	1	1	1	1	3	2	1	1	12
115	1	1	2	1	1	1	1	1	2	2	1	10
116	1	2	3	1	3	1	1	3	2	1	1	13
117	1	1	2	1	2	1	1	1	4	3	4	17
118	1	1	2	1	2	1	1	1	4	3	2	15
119	1	3	4	1	3	1	1	3	2	1	1	13
120	1	1	2	1	1	1	1	1	3	1	1	11
121	1	3	4	1	3	1	3	1	2	3	1	15
122	1	2	3	1	2	1	1	1	2	2	1	11
123	1	2	3	1	2	1	1	1	2	1	2	11
124	1	2	3	1	1	1	1	1	5	1	1	12
125	3	3	6	1	1	1	2	3	3	1	1	13
126	1	1	2	1	2	1	1	1	3	1	1	12
127	1	3	4	1	1	1	1	1	4	3	5	17
128	1	1	2	1	1	1	1	1	3	2	2	12
129	1	1	2	1	2	1	1	1	3	1	1	11
130	3	3	6	3	1	3	1	1	2	3	3	17
131	1	1	2	1	1	1	1	1	4	1	2	12
132	2	3	5	2	2	3	2	1	4	3	3	20
133	2	2	4	1	2	1	1	2	3	2	3	15
134	2	3	5	3	2	2	1	1	3	1	1	14
135	1	2	3	3	1	3	1	1	2	3	3	17
136	1	2	3	1	3	1	1	1	3	3	2	15
137	2	2	4	1	1	1	1	1	3	1	1	10
138	3	2	5	1	2	1	1	1	2	2	3	13
139	1	3	4	1	1	3	3	1	3	1	3	16
140	1	2	3	3	1	1	3	1	3	1	1	14
141	1	1	2	1	1	1	1	1	1	1	1	8
142	1	1	2	1	2	1	1	1	1	1	1	9
143	1	2	3	1	1	1	1	1	1	1	1	8
144	1	2	3	1	1	1	1	1	1	1	1	8

APPENDIX 4(c) CONTINUES

STUDENTS	ITEM 1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
145	1	1	2	1	1	1	1	2	1	1	2	10
146	1	2	3	1	1	3	2	2	2	1	1	13
147	1	1	2	1	1	2	2	1	1	2	1	11
148	1	2	3	3	2	1	1	1	1	1	1	11
149	1	1	2	2	1	1	1	1	1	1	2	10
150	1	1	2	1	2	1	1	1	1	1	2	10
151	1	1	2	1	1	2	1	1	1	2	1	10
152	1	2	3	1	2	2	1	1	2	1	3	12
153	1	1	2	1	1	1	2	2	1	1	1	10
154	1	1	2	1	1	1	2	2	1	1	1	10
155	1	1	2	1	1	2	1	1	2	1	1	10
156	1	1	2	1	2	1	1	1	1	2	1	10
157	1	2	3	2	1	1	1	1	1	1	3	11
158	1	2	3	3	1	2	1	1	1	1	1	11
159	1	1	2	1	2	2	2	1	1	1	2	12
160	1	1	2	2	1	1	1	1	2	1	1	10
161	1	1	2	1	1	1	1	1	1	2	2	10
162	1	2	3	1	1	1	1	1	1	2	3	11
163	1	2	3	1	1	1	1	3	2	1	1	11
164	1	1	2	1	1	2	1	2	1	1	1	10
165	1	1	2	1	2	1	2	1	1	1	1	10
166	1	1	2	2	2	1	1	1	1	1	1	10
167	1	1	2	1	1	1	1	1	2	1	2	10
168	1	2	3	1	1	2	3	1	2	2	2	10
169	1	1	2	1	1	1	1	2	2	1	2	14
170	1	1	2	1	1	1	2	1	2	2	2	11
171	1	2	3	1	1	2	1	1	1	1	3	12
172	1	2	3	3	2	1	1	1	2	1	1	11
173	1	1	2	2	1	2	1	1	2	1	2	12
174	1	2	3	2	4	1	1	1	1	1	2	13
	204	292	466	213	248	226	204	221	412	263	298	2549

APPENDIX 5(a)

PRINCIPALS' RESPONSE SCORES TO VARIABLE THREE

PRINCIPAL	ITEM1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
1	1	1	2	1	1	1	1	1	2	1	2	10
2	2	3	5	1	1	1	2	2	3	2	3	15
3	1	2	3	1	2	1	4	1	2	4	2	17
4	1	1	2	1	1	1	1	4	2	2	2	14
5	1	1	2	2	1	2	1	1	2	1	2	12
6	1	1	2	1	1	1	1	1	2	2	2	11
7	1	2	3	1	2	1	1	1	2	1	1	10
8	4	1	5	1	2	1	1	2	2	2	1	12
9	2	2	4	1	1	1	1	1	3	2	3	13
10	1	1	2	1	1	1	1	1	3	1	2	11
11	1	1	2	1	4	1	1	1	2	2	2	14
12	2	1	3	1	1	4	1	2	1	1	2	13
13	1	4	5	4	1	1	2	1	1	2	1	14
14	1	2	3	1	3	1	1	1	3	1	3	14
15	1	1	2	1	1	1	1	1	4	1	4	14
	21	24	45	19	23	19	20	21	34	25	28	189

APPENDIX 5(b)

TEACHER'S RESPONSE SCORES TO VARIABLE THREE

TEACHERS	ITEM1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
1	1	2	3	3	2	1	1	1	2	1	2	13
2	1	1	2	1	1	1	1	1	2	1	1	9
3	2	2	4	2	1	2	2	2	2	2	2	15
4	1	1	2	1	1	1	1	1	1	1	1	8
5	1	3	4	1	1	1	1	1	3	1	1	10
6	1	1	2	1	2	1	2	2	2	2	2	14
7	1	5	6	1	1	5	1	1	5	1	1	16
8	1	2	3	1	1	1	1	1	3	1	1	10
9	1	2	3	1	1	1	1	1	2	1	2	10
10	1	2	3	1	1	1	1	2	1	1	1	9
11	1	1	2	1	1	1	1	1	1	1	1	8
12	1	1	2	1	1	1	1	1	1	2	2	10
13	1	1	2	1	1	1	1	2	4	2	2	14
14	1	2	3	1	2	1	1	1	2	1	1	10
15	1	1	2	1	2	1	1	1	2	2	1	11
16	1	1	2	1	2	1	1	1	5	2	1	14
17	1	1	2	1	1	2	1	1	2	2	1	11
18	2	2	4	1	1	1	2	1	3	2	3	14
19	1	1	2	1	1	1	1	1	2	1	1	9
20	1	1	2	1	1	1	1	1	2	1	2	10
21	1	2	3	1	2	1	1	1	3	2	5	16
22	2	1	3	2	1	2	1	2	1	1	2	12
23	1	1	2	1	2	3	1	2	2	2	2	15
24	1	2	3	1	2	2	1	1	3	2	2	14
25	1	2	3	1	2	1	1	2	3	2	2	14
26	1	2	3	1	1	2	2	1	4	3	3	17
27	1	1	2	1	1	1	1	1	5	2	2	14
28	1	2	3	1	2	1	1	1	2	2	2	12
29	1	1	2	1	2	1	1	3	3	1	2	12
30	1	4	5	1	1	1	1	4	1	1	2	12
31	1	2	3	1	2	1	1	1	3	2	1	12
32	2	3	5	1	1	2	1	1	3	2	2	13

APPENDIX 5(b) CONTINUES

TEACHERS	ITEM1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
33	1	4	5	2	2	1	1	2	3	1	2	14
34	2	1	3	1	2	1	1	1	4	2	2	14
35	1	3	4	1	1	1	1	1	3	2	3	13
36	2	1	3	1	1	1	1	1	2	1	1	9
37	1	2	3	1	1	1	1	1	2	2	1	10
38	1	2	3	1	1	1	1	4	2	1	1	12
39	1	1	2	1	2	1	1	1	4	3	4	17
40	1	1	2	1	2	1	1	1	4	3	2	15
41	1	3	4	1	1	1	1	2	2	1	1	10
42	1	1	2	1	1	1	2	1	2	1	4	13
43	1	3	4	1	1	2	4	1	2	1	1	13
44	1	2	3	1	2	1	1	1	2	2	1	11
45	1	2	3	1	2	1	1	1	2	1	2	11
46	1	2	3	1	1	1	1	1	5	1	1	12
47	1	1	2	1	1	1	2	3	3	1	1	13
48	1	1	2	1	2	4	1	1	4	1	1	15
49	1	3	4	1	1	1	1	1	4	3	5	17
50	2	1	3	1	1	1	1	1	3	2	2	12
51	1	1	2	1	2	1	1	1	3	1	1	11
52	4	1	5	1	1	1	1	1	2	1	1	9
53	1	1	2	1	1	1	1	1	4	1	2	12
54	2	1	3	2	2	3	2	1	4	3	3	20
55	2	2	4	1	2	1	1	2	3	2	3	15
56	2	3	5	3	2	2	1	1	3	1	1	14
57	1	2	3	2	4	1	1	1	2	2	1	15
58	1	2	3	1	3	1	1	1	3	3	2	15
59	2	2	4	1	1	1	1	1	3	1	1	10
60	1	2	3	1	2	1	1	1	2	2	3	13
61	1	3	4	1	2	1	1	1	3	1	1	11
62	1	2	3	4	1	1	1	1	1	4	2	15
	76	112	188	74	92	81	92	80	176	101	112	788

APPENDIX 5(a)

STUDENTS' RESPONSE SCORES TO VARIABLE THREE

STUDENTS	ITEM1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
1	1	2	3	3	2	1	1	1	2	1	2	13
2	1	1	2	1	1	1	1	1	2	1	1	9
3	2	2	4	2	1	2	2	2	2	2	2	15
4	1	1	2	1	1	1	1	1	1	1	1	8
5	1	3	4	1	1	1	1	1	3	1	1	10
6	1	1	2	1	2	1	2	2	2	2	2	14
7	1	5	6	1	1	5	1	1	5	1	1	16
8	1	2	3	1	1	1	1	1	3	1	1	10
9	1	2	3	1	1	1	1	1	2	1	2	10
10	1	2	3	1	1	1	1	2	1	1	1	9
11	1	1	2	1	1	1	1	1	1	1	1	8
12	1	1	2	1	1	1	1	1	1	2	2	10
13	1	1	2	1	1	1	1	2	4	2	2	14
14	1	2	3	1	2	1	1	1	2	1	1	10
15	1	1	2	1	2	1	1	1	2	2	1	11
16	1	1	2	1	2	1	1	1	5	2	1	14
17	1	1	2	1	1	2	1	1	2	2	1	11
18	2	2	4	1	1	1	2	1	3	2	3	14
19	1	1	2	1	1	1	1	1	2	1	1	9
20	1	1	2	1	1	1	1	1	2	1	2	10
21	1	2	3	1	2	1	1	1	3	2	5	16
22	2	1	3	2	1	2	1	2	1	1	2	12
23	1	1	2	1	2	3	1	2	2	2	2	15
24	1	2	3	1	2	2	1	1	3	2	2	14
25	1	2	3	1	2	1	1	2	3	2	2	14
26	1	2	3	1	1	2	2	1	4	3	3	17
27	1	1	2	1	1	1	1	1	5	2	2	14
28	1	2	3	1	2	1	1	1	2	2	2	12
29	1	1	2	1	2	1	1	3	3	1	2	12
30	1	4	5	1	1	1	1	4	1	1	2	12
31	1	2	3	1	2	1	1	1	3	2	1	12
32	2	3	5	1	1	2	1	1	3	2	2	13
33	1	1	2	1	1	1	1	1	1	2	3	11
34	1	1	2	2	1	2	1	1	1	3	1	12
35	1	1	2	1	1	1	1	2	3	2	2	13

APPENDIX 5(c) CONTINUES

STUDENTS	ITEM1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
36	1	2	3	2	2	1	1	2	3	1	2	14
37	2	1	3	1	2	1	1	1	4	2	2	14
38	1	3	4	1	1	1	1	1	3	2	3	13
39	2	1	3	1	1	1	1	1	2	1	1	9
40	1	1	2	1	1	1	1	1	2	2	1	10
41	1	2	3	1	1	1	1	1	2	1	1	9
42	1	1	2	1	2	1	1	1	4	3	4	17
43	2	1	3	1	2	1	1	1	4	3	2	15
44	1	3	4	1	1	1	1	1	2	1	1	9
45	1	1	2	1	1	1	1	1	1	1	1	8
46	1	3	4	1	1	1	1	1	2	1	1	9
47	1	2	3	1	2	1	1	1	2	2	1	11
48	1	2	3	1	2	1	1	1	2	1	2	11
49	1	2	3	1	1	1	1	1	5	1	1	12
50	3	1	4	1	1	1	2	3	3	1	1	13
51	1	1	2	1	2	3	1	1	2	1	1	12
52	1	3	4	1	1	1	1	1	4	3	5	17
53	1	1	2	1	1	1	1	1	3	2	2	12
54	1	1	2	1	2	1	1	1	3	1	1	11
55	1	3	4	1	2	2	1	1	2	1	1	11
56	1	1	2	1	1	1	1	1	4	1	2	12
57	2	1	3	2	2	3	2	1	4	3	3	20
58	2	2	4	1	2	1	1	2	3	2	3	15
59	2	3	5	3	2	2	1	1	3	1	1	14
60	1	2	3	1	3	1	2	2	2	1	3	15
61	1	2	3	1	3	1	1	1	3	3	2	15
62	2	2	4	2	1	1	3	2	3	3	1	16
63	1	2	3	1	2	1	1	1	2	2	3	13
64	1	3	4	3	1	1	1	2	3	1	1	13
65	1	2	3	1	1	1	1	1	3	2	2	12
66	1	1	2	1	1	1	1	1	2	3	1	11
67	1	2	3	1	1	1	1	1	4	1	1	11
68	1	2	3	1	1	1	1	4	1	1	1	11
69	1	1	2	2	1	1	3	1	1	1	1	11
70	1	1	2	1	1	3	1	1	1	1	1	10
71	2	1	3	1	4	1	1	1	1	1	1	11
72	1	1	2	3	1	1	1	1	1	1	1	10

APPENDIX 5(c) CONTINUES

STUDENTS	ITEM1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
73	1	1	2	1	2	3	1	1	1	1	1	11
74	1	2	3	1	4	1	1	1	1	1	2	12
75	1	1	2	3	1	1	1	1	1	2	2	12
76	1	2	3	3	2	1	1	1	2	1	2	13
77	1	1	2	1	1	1	1	1	2	1	1	9
78	2	2	4	2	1	2	2	2	2	2	2	15
79	1	1	2	1	1	1	1	1	1	1	1	8
80	1	3	4	1	1	1	1	1	3	1	1	10
81	1	1	2	1	2	1	2	2	2	2	2	14
82	1	5	6	1	1	5	1	1	5	1	1	16
83	1	2	3	1	1	1	1	1	3	1	1	10
84	1	2	3	1	1	1	1	1	2	1	2	10
85	1	2	3	1	1	1	1	2	1	1	1	9
86	1	1	2	1	1	1	1	1	1	1	1	8
87	1	1	2	1	1	1	1	1	1	2	2	10
88	1	1	2	1	1	1	1	2	4	2	2	14
89	1	2	3	1	2	1	1	1	2	1	1	10
90	1	1	2	1	2	1	1	1	2	2	1	11
91	1	1	2	1	2	1	1	1	5	2	1	14
92	1	1	2	1	1	2	1	1	2	2	1	11
93	2	2	4	1	1	1	2	1	3	2	3	14
94	1	1	2	1	1	1	1	1	2	1	1	9
95	1	1	2	1	1	1	1	1	2	1	2	10
96	1	2	3	1	2	1	1	1	3	2	5	16
97	2	1	3	2	1	2	1	2	1	1	2	12
98	1	1	2	1	2	3	1	2	2	2	2	15
99	1	2	3	1	2	2	1	1	3	2	2	14
100	1	2	3	1	2	1	1	2	3	2	2	14
101	1	2	3	1	1	2	2	1	4	3	3	17
102	1	1	2	1	1	1	1	1	5	2	2	14
103	1	2	3	1	2	1	1	1	2	2	2	12
104	1	1	2	1	2	1	1	3	3	1	2	12
105	1	4	5	1	1	1	1	4	1	1	2	12
106	1	2	3	1	2	1	1	1	3	2	1	12
107	2	3	5	1	1	2	1	1	3	2	2	13
108	1	1	2	1	1	1	1	1	2	3	1	11
109	1	2	3	1	1	1	1	2	4	1	2	13

APPENDIX 5(c) CONTINUES

STUDENTS	ITEM1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
110	1	1	2	2	2	1	1	2	3	1	2	14
112	2	1	3	1	2	1	1	1	4	2	2	14
113	1	3	4	1	1	1	1	1	3	2	3	13
114	2	1	3	1	1	1	1	3	2	1	1	12
115	1	1	2	1	1	1	1	1	2	2	1	10
116	1	2	3	1	3	1	1	3	2	1	1	13
117	1	1	2	1	2	1	1	1	4	3	4	17
118	1	1	2	1	2	1	1	1	4	3	2	15
119	1	3	4	1	3	1	1	3	2	1	1	13
120	1	1	2	1	1	1	1	1	3	1	1	11
121	1	3	4	1	3	1	3	1	2	3	1	15
122	1	2	3	1	2	1	1	1	2	2	1	11
123	1	2	3	1	2	1	1	1	2	1	2	11
124	1	2	3	1	1	1	1	1	5	1	1	12
125	3	3	6	1	1	1	2	3	3	1	1	13
126	1	1	2	1	2	1	1	1	3	1	1	12
127	1	3	4	1	1	1	1	1	4	3	5	17
128	1	1	2	1	1	1	1	1	3	2	2	12
129	1	1	2	1	2	1	1	1	3	1	1	11
130	3	3	6	3	1	3	1	1	2	3	3	17
131	1	1	2	1	1	1	1	1	4	1	2	12
132	2	3	5	2	2	3	2	1	4	3	3	20
133	2	2	4	1	2	1	1	2	3	2	3	15
134	2	3	5	3	2	2	1	1	3	1	1	14
135	1	2	3	3	1	3	1	1	2	3	3	17
136	1	2	3	1	3	1	1	1	3	3	2	15
137	2	2	4	1	1	1	1	1	3	1	1	10
138	3	2	5	1	2	1	1	1	2	2	3	13
139	1	3	4	1	1	3	3	1	3	1	3	16
140	1	2	3	3	1	1	3	1	3	1	1	14
141	1	1	2	1	1	1	3	1	1	1	1	10
142	1	1	2	1	2	3	1	1	1	1	1	11
143	1	2	3	1	4	1	1	1	1	1	1	11
144	1	2	3	4	1	1	1	1	1	1	1	11

APPENDIX 5(c) CONTINUES

STUDENTS	ITEM	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
145	1	1	2	1	1	1	1	1	1	1	3	10
146	1	2	3	1	1	1	4	2	2	1	1	13
147	1	1	2	1	1	1	2	3	1	1	1	11
148	1	2	3	1	1	4	1	1	1	1	1	11
149	1	1	2	1	3	1	1	1	1	1	1	10
150	1	1	2	3	1	1	1	1	1	1	1	10
151	1	1	2	1	1	1	1	1	1	1	3	10
152	1	2	3	1	2	2	1	1	1	4	1	13
153	1	1	2	1	1	1	1	1	3	1	1	10
154	1	1	2	1	1	1	1	3	1	1	1	10
155	1	1	2	1	1	1	3	1	1	1	1	10
156	1	1	2	1	1	3	1	1	1	1	1	10
157	1	2	3	1	4	1	1	1	1	1	1	11
158	1	2	3	4	1	1	1	1	1	1	1	11
159	1	1	2	1	2	2	1	1	1	1	3	12
160	1	1	2	1	1	1	1	1	1	3	1	10
161	1	1	2	1	1	1	1	1	3	1	1	10
162	1	2	3	1	1	1	1	4	1	1	1	11
163	1	2	3	1	1	1	4	1	1	1	1	11
164	1	1	2	1	1	3	1	1	1	1	1	10
165	1	1	2	1	3	1	1	1	1	1	1	10
166	1	1	2	3	1	1	1	1	1	1	1	10
167	1	1	2	1	1	1	1	1	1	1	3	10
168	1	2	3	1	1	2	1	1	2	4	2	14
169	1	1	2	1	1	1	1	1	3	1	2	11
170	1	1	2	1	1	1	1	3	2	1	2	12
171	1	2	3	1	1	1	4	1	1	1	1	11
172	1	2	3	1	1	4	1	1	2	1	1	12
173	1	1	2	3	1	1	1	1	2	1	2	12
174	1	2	3	2	4	1	1	1	1	1	2	13
	203	201	464	218	257	232	210	225	419	269	293	2587

APPENDIX 6(a)

PRINCIPALS' RESPONSE SCORES TO VARIABLE FOUR

PRINCIPAL	ITEM1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
1	1	1	2	1	1	1	1	1	2	1	2	10
2	2	3	5	1	1	1	2	2	3	2	3	15
3	1	2	3	1	1	1	1	1	2	1	2	10
4	1	1	2	1	1	1	1	1	2	2	2	11
5	1	1	2	1	1	1	1	1	1	1	1	8
6	1	1	2	1	1	1	1	1	2	2	2	11
7	1	1	2	1	2	1	1	1	2	1	1	10
8	1	1	2	1	2	1	1	2	2	2	1	12
9	2	2	4	1	1	1	1	1	3	2	3	13
10	1	1	2	1	1	1	1	1	3	1	2	11
11	1	1	2	1	1	1	1	1	2	2	2	11
12	1	1	2	2	2	2	2	1	1	1	2	13
13	1	1	2	1	1	1	1	2	2	2	2	12
14	1	2	3	1	3	1	1	1	3	1	3	14
15	1	1	2	1	1	1	1	1	1	1	1	8
	18	21	39	16	20	16	17	18	31	22	29	169

APPENDIX 6(b)

TEACHERS' RESPONSE SCORES TO VARIABLE FOUR

TEACHERS	ITEM1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
1	1	2	3	3	2	1	1	1	2	1	2	13
2	1	1	2	1	1	1	1	1	2	1	1	9
3	2	2	4	2	1	2	2	2	2	2	2	15
4	1	1	2	1	1	1	1	1	1	1	1	8
5	1	3	4	1	1	1	1	1	3	1	1	10
6	1	1	2	1	2	1	2	2	2	2	2	14
7	1	5	6	1	1	5	1	1	5	1	1	16
8	1	2	3	1	1	1	1	1	3	1	1	10
9	1	2	3	1	1	1	1	1	2	1	2	10
10	1	2	3	1	1	1	1	2	1	1	1	9
11	1	1	2	1	1	1	1	1	1	1	1	8
12	1	1	2	1	1	1	1	1	1	2	2	10
13	1	1	2	1	1	1	1	2	4	2	2	14
14	1	2	3	1	2	1	1	1	2	1	1	10
15	1	1	2	1	2	1	1	1	2	2	1	11
16	1	1	2	1	2	1	1	1	5	2	1	14
17	1	1	2	1	1	2	1	1	2	2	1	11
18	2	2	4	1	1	1	2	1	3	2	3	14
19	1	1	2	1	1	1	1	1	2	1	1	9
20	1	1	2	1	1	1	1	1	2	1	2	10
21	1	2	3	1	2	1	1	1	3	2	5	16
22	2	1	3	2	1	2	1	2	1	1	2	12
23	1	1	2	1	2	3	1	1	2	2	2	15
24	1	2	3	1	2	2	1	2	3	2	2	14
25	1	2	3	1	2	1	1	1	3	2	2	14
26	1	2	3	1	1	2	2	1	4	3	3	17
27	1	1	2	1	1	1	1	1	5	2	2	14
28	1	2	3	1	2	1	1	3	2	2	2	12
29	1	1	2	1	2	1	1	4	3	1	2	12
30	1	4	5	1	1	1	1	1	1	1	2	12
31	1	2	3	1	2	1	1	1	3	2	1	12
32	2	3	5	1	1	2	1		3	2	2	13

APPENDIX 6(c) CONTINUES

STUDENTS	ITEM 1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
145	1	1	2	1	1	1	1	1	1	1	1	8
146	1	2	3	1	1	1	1	2	2	1	1	10
147	1	1	2	1	1	1	1	1	1	1	1	9
148	1	2	3	1	1	1	1	1	1	1	1	8
149	1	1	2	1	1	1	1	1	1	1	1	8
150	1	1	2	1	1	1	1	1	1	1	1	8
151	1	1	2	1	1	1	1	1	1	1	1	8
152	1	2	3	1	2	2	1	1	1	1	1	10
153	1	1	2	1	1	1	1	1	1	1	1	8
154	1	1	2	1	1	1	1	1	1	1	1	8
155	1	1	2	1	1	1	1	1	1	1	1	8
156	1	1	2	1	1	1	1	1	1	1	1	8
157	1	2	3	1	1	1	1	1	1	1	1	8
158	1	2	3	1	1	1	1	1	1	1	1	8
159	1	1	2	1	2	2	1	1	1	1	1	10
160	1	1	2	1	1	1	1	1	1	1	1	8
161	1	1	2	1	1	1	1	1	1	1	1	8
162	1	2	3	1	1	1	1	1	1	1	1	8
163	1	2	3	1	1	1	1	1	1	1	1	8
164	1	1	2	1	1	1	1	1	1	1	1	8
165	1	1	2	1	1	1	1	1	1	1	1	8
166	1	1	2	1	1	1	1	1	1	1	1	8
167	1	1	2	1	1	1	1	1	1	1	1	8
168	1	2	3	1	1	2	1	1	2	1	2	11
169	1	1	2	1	1	1	1	1	1	1	2	9
170	1	1	2	1	1	1	1	1	2	1	2	10
171	1	2	3	1	1	1	1	1	1	1	1	8
172	1	2	3	1	1	1	1	1	2	1	1	9
173	1	1	2	1	1	1	1	1	2	1	2	10
174	1	2	3	2	1	1	1	1	1	1	2	10
	198	287	466	197	239	212	191	209	401	251	279	2412

APPENDIX 6(b) CONTINUES

TEACHERS	ITEM1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
33	1	1	2	2	2	1	1	1	3	1	2	14
34	2	1	3	1	2	1	1	1	4	2	2	14
35	1	3	4	1	1	1	1	1	3	2	3	13
36	2	1	3	1	1	1	1	1	2	1	1	9
37	1	1	2	1	1	1	1	1	2	2	1	10
38	1	2	3	1	1	1	1	1	2	1	1	9
39	1	1	2	1	2	1	1	1	4	3	4	17
40	1	1	2	1	2	1	1	1	4	3	2	15
41	1	3	4	1	1	1	1	1	2	1	1	9
42	1	1	2	1	1	1	1	1	1	1	1	8
43	1	3	4	1	1	1	1	1	2	1	1	9
44	1	2	3	1	2	1	1	1	2	2	1	11
45	1	2	3	1	2	1	1	1	2	1	2	11
46	1	2	3	1	1	1	1	1	5	1	1	12
47	2	2	4	1	1	1	2	3	3	1	1	13
48	1	1	2	1	2	1	1	1	1	1	1	9
49	1	3	4	1	1	1	1	1	4	3	5	17
50	1	1	2	1	1	1	1	1	3	2	2	12
51	1	1	2	1	2	1	1	1	3	1	1	11
52	1	1	2	1	1	1	1	1	2	1	1	9
53	1	1	2	1	1	1	1	1	4	1	2	12
54	2	1	3	2	2	3	2	1	4	3	3	20
55	2	2	4	1	2	1	1	2	3	2	3	15
56	2	3	5	3	2	2	1	1	3	1	1	14
57	1	2	3	1	1	1	1	1	2	1	1	9
58	1	2	3	1	3	1	1	1	3	3	2	15
59	2	2	4	1	1	1	1	1	3	1	1	10
60	1	2	3	1	2	1	1	1	2	2	3	13
61	1	3	4	2	2	2	2	1	3	1	1	14
62	1	2	3	1	1	1	1	2	2	2	2	12
	73	109	182	71	89	78	69	77	173	98	109	764

APPENDIX 6(c)

STUDENTS' RESPONSE SCORES TO VARIABLE FOUR

STUDENTS	ITEM 1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
1	1	2	3	3	2	1	1	1	2	1	1	12
2	1	1	2	1	1	1	1	1	2	1	1	9
3	2	2	4	2	1	1	1	1	1	1	2	10
4	1	1	2	1	1	1	1	1	1	1	1	8
5	1	3	4	1	1	1	1	1	3	1	1	10
6	1	1	2	1	2	1	2	2	2	2	2	14
7	1	5	6	1	1	5	1	1	5	1	1	16
8	1	2	3	1	1	1	1	1	3	1	1	10
9	1	2	3	1	1	1	1	1	2	1	2	10
10	1	2	3	1	1	1	1	2	1	1	1	9
11	1	1	2	1	1	1	1	1	1	1	1	8
12	1	1	2	1	1	1	1	1	1	2	2	10
13	1	1	2	1	1	1	1	2	4	2	2	14
14	1	2	3	1	2	1	1	1	2	1	1	13
15	1	1	2	1	2	1	1	1	2	2	1	11
16	1	1	2	1	2	1	1	1	1	2	1	10
17	1	1	2	1	1	1	1	1	2	2	1	10
18	2	2	4	1	1	1	2	1	3	2	3	14
19	1	1	2	1	1	1	1	1	2	1	1	9
20	1	1	2	1	1	1	1	1	2	1	2	10
21	1	2	3	1	2	1	1	1	3	2	1	11
22	2	1	3	2	1	1	1	1	1	1	2	10
23	1	1	2	1	1	1	1	1	2	2	2	11
24	1	2	3	1	2	2	1	1	3	2	2	14
25	1	2	3	1	2	1	1	2	3	2	2	14
26	1	2	3	1	1	2	2	1	4	3	3	17
27	1	1	2	1	1	1	1	1	5	2	2	14
28	1	2	3	1	2	1	1	1	2	2	2	12
29	1	1	2	1	2	1	1	3	3	1	2	12
30	1	4	5	1	1	1	1	2	1	1	2	10
31	1	2	3	1	2	1	1	1	3	2	1	12
32	2	3	5	1	1	2	1	1	3	2	2	13
33	1	1	2	1	1	1	1	1	1	2	1	9
34	1	1	2	2	1	2	1	1	1	1	1	10
35	1	1	2	1	1	1	1	2	1	2	2	11

APPENDIX 6(c) CONTINUES

STUDENTS	ITEM 1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
36	1	2	3	2	2	1	1	2	3	1	2	14
37	2	1	3	1	2	1	1	1	4	2	2	14
38	1	3	4	1	1	1	1	1	3	2	3	13
39	2	1	3	1	1	1	1	1	2	1	1	9
40	1	1	2	1	1	1	1	1	2	2	1	10
41	1	2	3	1	1	1	1	1	2	1	1	9
42	1	1	2	1	2	1	1	1	4	3	4	17
43	2	1	3	1	2	1	1	1	4	3	2	15
44	1	3	4	1	1	1	1	1	2	1	1	9
45	1	1	2	1	1	1	1	1	1	1	1	8
46	1	3	4	1	1	1	1	1	2	1	1	9
47	1	2	3	1	2	1	1	1	2	2	1	11
48	1	2	3	1	2	1	1	1	2	1	2	11
49	1	2	3	1	1	1	1	1	5	1	1	12
50	3	1	4	1	1	1	2	3	3	1	1	13
51	1	1	2	1	2	3	1	1	2	1	1	12
52	1	3	4	1	1	1	1	1	4	3	5	17
53	1	1	2	1	1	1	1	1	3	2	2	12
54	1	1	2	1	2	1	1	1	3	1	1	11
55	1	3	4	1	2	2	1	1	2	1	1	11
56	1	1	2	1	1	1	1	1	4	1	2	12
57	2	1	3	2	2	3	2	1	4	3	3	20
58	2	2	4	1	2	1	1	2	3	2	3	15
59	2	3	5	3	2	2	1	1	3	1	1	14
60	1	2	3	1	1	1	2	2	2	1	3	13
61	1	2	3	1	1	1	1	1	3	3	2	13
62	2	2	4	2	1	1	3	2	3	3	1	16
63	1	2	3	1	2	1	1	1	2	2	3	13
64	1	3	4	3	1	1	1	2	3	1	1	13
65	1	2	3	1	1	1	1	1	3	2	2	12
66	1	1	2	1	1	1	1	1	2	1	1	9
67	1	2	3	1	1	1	1	1	1	1	1	8
68	1	2	3	1	1	1	1	1	1	1	1	8
69	1	1	2	2	1	1	1	1	1	1	1	9
70	1	1	2	1	1	1	1	1	1	1	1	8
71	2	1	3	1	1	1	1	1	1	1	1	8
72	1	1	2	1	1	1	1	1	1	1	1	8

APPENDIX 6(c) CONTINUES

STUDENTS	ITEM 1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
73	1	1	2	1	2	1	1	1	1	1	1	9
74	1	2	3	1	1	1	1	1	1	1	2	9
75	1	1	2	1	1	1	1	1	1	2	2	10
76	1	2	3	2	2	1	1	1	2	1	2	12
77	1	1	2	1	1	1	1	1	2	1	1	9
78	2	2	4	2	1	2	2	2	2	2	2	15
79	1	1	2	1	1	1	1	1	1	1	1	8
80	1	3	4	1	1	1	1	1	3	1	1	10
81	1	1	2	1	2	1	2	2	2	2	2	14
82	1	5	6	1	1	5	1	1	5	1	1	16
83	1	2	3	1	1	1	1	1	3	1	1	10
84	1	2	3	1	1	1	1	1	2	1	2	10
85	1	2	3	1	1	1	1	2	1	1	1	9
86	1	1	2	1	1	1	1	1	1	1	1	8
87	1	1	2	1	1	1	1	1	1	2	2	10
88	1	1	2	1	1	1	1	2	4	2	2	14
89	1	2	3	1	2	1	1	1	2	1	1	10
90	1	1	2	1	2	1	1	1	2	2	1	11
91	1	1	2	1	2	1	1	1	5	2	1	14
92	1	1	2	1	1	2	1	1	2	2	1	11
93	2	2	4	1	1	1	2	1	3	2	3	14
94	1	1	2	1	1	1	1	1	2	1	1	9
95	1	1	2	1	1	1	1	1	2	1	2	10
96	1	2	3	1	2	1	1	1	3	2	5	16
97	2	1	3	2	1	2	1	2	1	1	2	12
98	1	1	2	1	2	3	1	2	2	2	2	15
99	1	2	3	1	2	2	1	1	3	2	2	14
100	1	2	3	1	2	1	1	2	3	2	2	14
101	1	2	3	1	1	2	2	1	4	3	3	17
102	1	1	2	1	1	1	1	1	5	2	2	14
103	1	2	3	1	2	1	1	1	2	2	2	12
104	1	1	2	1	2	1	1	3	3	1	2	12
105	1	4	5	1	1	1	1	4	1	1	2	12
106	1	2	3	1	2	1	1	1	3	2	1	12
107	2	3	5	1	1	2	1	1	3	2	2	13
108	1	1	2	1	1	1	1	1	2	1	1	9
109	1	2	3	1	1	1	1	2	1	1	2	10

APPENDIX 6(c) CONTINUES

STUDENTS	ITEM 1	2	TOTAL	3	4	5	6	7	8	9	10	TOTAL
110	1	1	2	2	2	1	1	2	3	1	2	14
111	1	1	2	1	1	1	1	1	1	1	1	8
112	2	1	3	1	2	1	1	1	4	2	2	14
113	1	3	4	1	1	1	1	1	3	2	3	13
114	2	1	3	1	1	1	1	3	2	1	1	12
115	1	1	2	1	1	1	1	1	2	2	1	10
116	1	2	3	1	3	1	1	3	2	1	1	13
117	1	1	2	1	2	1	1	1	4	3	4	17
118	1	1	2	1	2	1	1	1	4	3	2	15
119	1	3	4	1	3	1	1	3	2	1	1	13
120	1	1	2	1	1	1	1	1	3	1	1	11
121	1	3	4	1	3	1	3	1	2	3	1	15
122	1	2	3	1	2	1	1	1	2	2	1	11
123	1	2	3	1	2	1	1	1	2	1	2	11
124	1	2	3	1	1	1	1	1	5	1	1	12
125	3	3	6	1	1	1	2	3	3	1	1	13
126	1	1	2	1	2	1	1	1	3	1	1	12
127	1	3	4	1	1	1	1	1	4	3	5	17
128	1	1	2	1	1	1	1	1	3	2	2	12
129	1	1	2	1	2	1	1	1	3	1	1	11
130	3	3	6	1	1	3	1	1	2	3	3	15
131	1	1	2	1	1	1	1	1	4	1	2	12
132	2	3	5	2	2	3	2	1	4	3	3	20
133	2	2	4	1	2	1	1	2	3	2	3	15
134	2	3	5	3	2	2	1	1	3	1	1	14
135	1	2	3	1	1	3	1	1	2	3	3	15
136	1	2	3	1	3	1	1	1	3	3	2	15
137	2	2	4	1	1	1	1	1	3	1	1	10
138	3	2	5	1	2	1	1	1	2	2	3	13
139	1	3	4	1	1	3	1	1	3	1	3	14
140	1	2	3	3	1	1	1	1	3	1	1	12
141	1	1	2	1	1	1	1	1	1	1	1	8
142	1	1	2	1	2	1	1	1	1	1	1	9
143	1	2	3	1	1	1	1	1	1	1	1	8
144	1	2	3	1	1	1	1	1	1	1	1	8

APPENDIX 7

COMPUTATION OF ANOVA FOR (HO-1,2,3 & 4) BY DATA PROCESSING

Scores	Group	N	Mean	Std Deviation	Std Error	45% Confidence Interval for Mean		Min	Max
						Lower Bound	Upper Bound		
$Ho^{(1)}$	1	15	14.0000	2.6276	.6901	12.8200	15.4800	10.00	20.00
	2	62	14.7581	3.1555	.4007	13.9567	15.5594	10.00	23.00
	3	174	14.3448	3.3978	.2576	13.8364	14.8582	10.00	25.00
	Total	**251**	14.4263	3.2957	.2080	14.0166	14.8360	10.00	25.00
$Ho^{(2)}$	1	15	14.4000	2.5298	.5582	12.9990	15.8010	10.00	20.00
	2	62	15.2903	2.9553	.3753	14.5398	16.0408	10.00	23.00
	3	174	14.8506	3.0959	.2347	14.3873	15.3138	10.00	25.00
	Total	**251**	14.9323	3.0291	.1912	14.5557	15.3088	10.00	25.00
$Ho^{(3)}$	1	15	15.9333	2.5486	.6580	14.5220	17.3447	12.00	20.00
	2	62	15.5806	2.8547	.3625	14.8557	16.3056	10.00	23.00
	3	174	15.0230	2.9386	.2228	14.5833	15.4627	10.00	25.00
	Total	**251**	15.2151	2.9013	.1831	14.8545	15.5758	10.00	25.00
$Ho^{(4)}$	1	15	13.8000	2.6511	.6845	12.3318	15.2682	10.00	20.00
	2	62	15.0806	3.0745	.3905	14.2999	15.8614	10.00	23.00
	3	174	14.2184	3.2521	.2465	13.7318	14.7850	10.00	25.00
	Total	**251**	14.4084	3.1903	.2014	14.0098	14.8030	10.00	25.00

SUMMARY OF ANOVA TABLE

Scores	Source of Variance (S^2)	sum of Squares (SS)	Degree of Freedom (αF)	Mean Square	F	F.Crit.
$Ho^{(1)}$	Bgss	10.705	2	5.353	.491	3.041
	Wgss	2704.681	248	10.906		
	Total	2715.385	250			
$Ho^{(2)}$	Bgss	13.359	2	6.680	.726	3.041
	Wgss	2280.489	248	9.196		
	Total	2293.849	250			
$Ho^{(3)}$	Bgss	22.444	2	11.222	1.337	3.041
	Wgss	2081.938	248	8.395		
	Total	2104.382	250			
$Ho^{(4)}$	Bgss	39.852	2	19.925	1.973	3.041
	Wgss	2504.698	248	10.100		
	Total	2544.550	250			

APPENDIX B

Department of Vocational & Technical Education

AHMADU BELLO UNIVERSITY, ZARIA—NIGERIA

MAJOR GENERAL MAMMAN KONTAGORA(RTD)
SOLE ADMINISTRATOR
Head of Department: DR. P.I.NWOKOCHA
B.A.M.ED, ED.D (USA)

Faculty of Education

Telephone: 069/51755; 50692
Telegrams: Unibello, Zaria

Your Ref:.....

Our Ref:.....

Date:.....

Dear Sir/Madam,

LETTER OF INTRODUCTION

The bearer of this letter, Mr/~~Mrs~~/~~Miss~~. OMOLO ODILI BG
is our Post graduate student in Vocational and Technical Education Department.

He is carrying out a research in the area of APPRAISAL OF IMPLEMENTATION OF THE NATIONAL POLICY ON EDUCATI WITH REFERENCE TO VOCATIONAL AND TECHNICAL EDUCATI IN THE SECONDARY TECHNICAL COLLEGES IN DELTA STATE

We will be grateful if the necessary assistance is given to him in the cause of his investigations and we assure you of maximum confidential treatment of any information given.

Yours sincerely,

P.I.NWOKO

DR. P.I.NWOKOCHA
HEAD OF DEPARTMENT.

Telegrams: Telephone:

APPENDIX 9

DELTA STATE

MINISTRY OF EDUCATION

(Headquarters)

Science, Vocational & Technical Education Department
Anwai Road,
P. M. B. 5015,
Asaba, Delta State.

Your Ref:.....

Our Ref:..... 12th September, 1997

LETTER OF INTRODUCTION

Dear Principal,

This is to certify that the Bearer Mr. Omolu Odili Ben is a Post-Graduate Student of Ahmadu Bello University, Zaria carrying out a research in Vocational and Technical Education in Delta State Technical Colleges.

2. Please, oblige him with information relevant to his field of investigation.

3. Thank you.

R.O. Shokare
Director (Sc. Voc. & Tech. Ed. Dept.)
Ministry of Education
Asaba.

APPENDIX 10

DELTA STATE

Telephone

MINISTRY OF EDUCATION

(Headquarters)
Science, Vocational & Technical Education Department
Anwai Road,
P. M. B. 5015,
Asaba, Delta State.

Our Ref:.....

Our Ref:.....

12th September, 1997.

The Principal

_____

_____

_____

PERMISSION TO CONDUCT A RESEARCH

The bearer Chief/Mr/Mrs/Miss/Messrs: OMOLU GBILI BENJAMIN

is a student from: ABU ZARIA

is conducting a research on: Appraisal of implementation of National Policy on Education with reference to Vocational Technical Educ. In Delta

for the award of: M.Ed Business

Please, oblige him with information relevant to his field of investigation.

Give her/him maximum cooperation.

R.O. Lokoare
R.O. Shokare
Director
(Sch. Voc. & Tech. Ed. Dept.)
Ministry of Education
Asaba.

APPENDIX 11

LIST OF SCHOOLS VISITED

1. Agbor Technical College, Agbor
2. Isele - Uku Technical College, Isele-Uku
3. Sapele Technical College, Sapele
4. Ofagbe Technical College, Ofagbe - Ozoro
5. Otogor Technical College, Ughelli
6. Utagbe - Ogbe Technical College, Kwale

PRINCIPALS QUESTIONNAIRE

DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION
AHMADU BELLO UNIVERSITY, ZARIA
FACULTY OF EDUCATION

Date:.....

Dear Sir/Madam,

"NEEDS ASSESSMENT OF TECHNICAL COLLEGES IN DELTA STATE"

I am a student in the above-named Institution pursuing a Master's Degree in Business Education (M.Ed). As part of the requirements for the award of the degree, I am to submit a thesis to the institutions Post Graduate school. My main interest is in the Vocational and Technical Education hence I have chosen the topic above with the aim of ascertaining the needs of Technical Colleges in Delta State.

It should be appreciated if you would be kind enough to complete the questionnaire as conscientiously as possible, I assure you that all answers would be treated in strict confidence.

Thanks for your anticipated cooperation.

Yours faithfully,

Researcher

SECTION A

Please fill in the name of your school and tick the appropriate item which you think represents your opinion.

1. Name of school:.....

2, What is your designation? (a) principal ☐

(b) Vice principal ☐ (c) HOD/HOS ☐ (d) Classroom Teacher ☐ (e) Student ☐

3. What is your highest academic qualification ?

Ph.D	☐
M.Ed, M.A, M.Sc.	☐
P.G.D.E	☐
B.Ed, B.A: B.Sc	☐
N.C.E, NTTC	☐
HND, FTC	☐
OND, Final C & G.	☐
TC II, GCE, SSC, C & G Inter, RSA	☐
First school leaving certificate, J.S.S.C ; S175	☐

4. What is your area of specialization/studies

(a) Business Education	☐
(b) Technical Education	☐
(c) Science Education	☐
(d) Arts/English Social studies Education	☐
(e) Home Economics	☐
(f) Mathematics Education	☐

5. Teaching Experience

1 - 3 years	☐
4 - 6 years	☐
7 - 9 year	☐
10 - 12 "	☐
13 - 15 "	☐
16 - above	☐

6. What is the population of your school?

a) 0 - 200 ☐

b) 201 - 300 ☐

c) 301 - 400 ☐

d) 401 - 500 ☐

e) 501 - above ☐

7. What is the level of academic performance of your school in NABTEB's examination for the past year.?

a) 80% - 100% (Excellent) ☐

b) 70% - 79% (V.Good) ☐

c) 60% - 69% (Good) ☐

d) 50% - 59% (Average) ☐

e) 40% - 49% (Fair) ☐

f) 30% - 39% (Poor) ☐

(g) 0% - 29% (V.poor ☐

SECTION B

1. How do you assess the level of importance of each of the following resources needed for the training of Technicians in the Technical Colleges in Delta State? Please tick [✓] the appropriate one in your opinion.

1. = very Important (VM)
2. = Important (m)
3. = Undecided (Ud)
4. = Less important (LM)
5. = Not important (Nm)

Important Resources Needed are:

a) Teachers & Instructors

(b) Infrastructures -Cl, workshops,

c) Facilities -Labs, Library, Typing & studios

d) Tools & Equipment

e) Consumable materials

(f) Textbooks & Teaching aids

(g) Finance-grants & maintanace

(h) Guidance Cpunsellors

(i) Effective supervision

(j) Curriculum & C. Assessment

VM	M	Ud	LM	NM
1	2	3	4	5

2. How do you assess the level of adequacy of each of the following resources needed in the Technical colleges in Delta state.

Please tick [✓] the appropriate one in your opinion

1 = very Adequate (VA)

2 = Adequate (A)

3 = Undecided (Ud)

4 = Less Adequate (LA

5 = Not Adequate (NA)

475818

Adequacy of Resources

a) Teachers & Instructors

b) Infrastructures-classrooms & Workshops

c) Facilities-labs, library,Typing & TD studios

d) Tools & Equipment

e) Consumable materials

f) Textbooks & Teaching Aids

g) Finance-grants & Maintenance

h) Guidance Counsellors

i) Effective supervision

j) Curriculum Development & coninuus Assessment.

VA	A	Ud	LA	NA
1	2	3	4	5

3. How do you rate the causes of poor academic performance of students in the Technical Colleges in Delta state?

Please tick ☑ the appropriate one in your opinion

1 = strongly Agree (SA)

2 = Agree (A)

3 = Undecided (Ud)

4 = Disagree (D)

5 = Strongly Disagree(SD)

Causes of Poor Academic Performance	SA	A	Ud	D	SD
	1	2	3	4	5
a) Lack of Teachers & Instructors					
b) Lack of Demonstrators/Artisans					
c) Lack of Tools & Equipment					
d) Lack of consumable materials					
e) No workshop for practice					
f) No science laboratories & materials					
g) No textbooks and Teaching Aids					
h) Poor dedication to duty by Teachers					
i) Lack of effective supervision by government					
j) Poor academic background of students					

4. How do you rate the following measures recommended to improve the standard of Technical Education in Delta State?

Please tick ☑ the appropriate one in your opinion.

1 = strongly Agree (SA)

2 = Agree (A)

3 = Undecided (Ud)

4 = Disagree (D)

5 = Strongly Disagree (SD)

Adequate provision of resources eg	SA	A	Ud	D	SD
	1	2	3	4	5
a) Teachers & Instructors					
b) Demonstrators/Artisans					
c) Tools & Equipment, Electricity					
d) consumable materials					
e) library, Textbooks & Teaching Aids					
f) Technical workshops & Classrooms					
g) Science laboratories & Materials					
h) Finance for grants & Maintenance					
i) effective supervision by Education Inspectors					
j) Guidance counsellors					

OPEN ENDED QUESTIONS

5. **What are the resources needed for the VTE programme in your Technical College?**
6. **What are the available resources in your Technical College? List them.**
7. **What is the level of academic performance of your College in June 1999 NABTEB's Examination?**
8. **What measures can you recommend to improve the academic standard in your College?**

TEACHERS QUESTIONNAIRE

DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION
AHMADU BELLO UNIVERSITY, ZARIA
FACULTY OF EDUCATION

Date:.....

Dear Sir/Madam,

"NEEDS ASSESSMENT OF TECHNICAL COLLEGES IN DELTA STATE"

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M.Ed, M.A, M.Sc.	☐
P.G.D.E	☐
B.Ed, B.A: B.Sc	☐
N.C.E, NTTC	☐
HND, FTC	☐
OND, Final C & G.	☐
TC II, GCE, SSC, C & G Inter, RSA	☐
First school leaving certificate, J.S.S.C ; S.T.S	☐

4. What is your area of specialization/studies

(a) Business Education	☐
(b) Technical Education	☐
(c) Science Education	☐
(d) Arts/English Social studies Education	☐
(e) Home Economics	☐
(f) Mathematics Education	☐

5. Teaching Experience

1 - 3 years	☐
4 - 6 years	☐
7 - 9 year	☐
10 - 12 "	☐
13 - 15 "	☐
16 - above	☐

6. What is the population of your school?

a) 0 - 200 ☐

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c) 301 - 400 ☐

d) 401 - 500 ☐

e) 501 - above ☐

7. What is the level of academic performance of your school in NABTEB's examination for the past year.?

a) 80% - 100% (Excellent) ☐

b) 70% - 79% (V.Good) ☐

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d) 50% - 59% (Average) ☐

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f) 30% - 39% (Poor) ☐

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SECTION B

1. How do you assess the level of importance of each of the following resources needed for the training of Technicians in the Technical Colleges in Delta State? Please tick [✓] the appropriate one in your opinion.

1. = very Important (VM)
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3. = Undecided (Ud)
4. = Less important (LM)
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d) Tools & Equipment

e) Consumable materials

(f) Textbooks & Teaching aids

(g) Finance-grants & maintanace

(h) Guidance Cpunsellors

(i) Effective supervision

(j) Curriculum & C. Assessment

VM	M	Ud	LM	NM
1	2	3	4	5

2. How do you assess the level of adequacy of each of the following resources needed in the Technical colleges in Delta state.

Please tick [✓] the appropriate one in your opinion

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2 = Adequate (A)

3 = Undecided (Ud)

4 = Less Adequate (LA

5 = Not Adequate (NA)

Adequacy of Resources

a) Teachers & Instructors

b) Infrastructures-classrooms & Workshops

c) Facilities-labs, library,Typing & TD studios

d) Tools & Equipment

e) Consumable materials

f) Textbooks & Teaching Aids

g) Finance-grants & Maintenance

h) Guidance Counsellors

i) Effective supervision

j) Curriculum Development & coninuous Assessment.

VA	A	Ud	LA	NA
1	2	3	4	5

3. How do you rate the causes of poor academic performance of students in the Technical Colleges in Delta state?

Please tick [✓] the appropriate one in your opinion

1 = strongly Agree (SA)

2 = Agree (A)

3 = Undecided (Ud)

4 = Disagree (D)

5 = Strongly Disagree(SD)

Causes of Poor Academic Performance	SA	A	Ud	D	SD
	1	2	3	4	5
a) Lack of Teachers & Instructors					
b) Lack of Demonstrators/Artisans					
c) Lack of Tools & Equipment					
d) Lack of consumable materials					
e) No workshop for practice					
f) No science laboratories & materials					
g) No textbooks and Teaching Aids					
h) Poor dedication to duty by Teachers					
i) Lack of effective supervision by government					
j) Poor academic background of students					

4. How do you rate the following measures recommended to improve the standard of Technical Education in Delta State?

Please tick [✓] the appropriate one in your opinion.

1 = strongly Agree (SA)

2 = Agree (A)

3 = Undecided (Ud)

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5 = Strongly Disagree (SD)

Adequate provision of resources eg	SA	A	Ud	D	SD
	1	2	3	4	5
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b) Demonstrators/Artisans					
c) Tools & Equipment, Electricity					
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g) Science laboratories & Materials					
h) Finance for grants & Maintenance					
i) effective supervision by Education Inspectors					
j) Guidance counsellors					

OPEN ENDED QUESTIONS

5. **What are the resources needed for the VTE programme in your Technical College?**
6. **What are the available resources in your Technical College? List them.**
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8. **What measures can you recommend to improve the academic standard in your College?**

STUDENTS QUESTIONNAIRE

DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION
AHMADU BELLO UNIVERSITY, ZARIA

FACULTY OF EDUCATION

Date:.....

Dear Sir/Madam,

"NEEDS ASSESSMENT OF TECHNICAL COLLEGES IN DELTA STATE"

I am a student in the above-named Institution pursuing a Master's Degree in Business Education (M.Ed). As part of the requirements for the award of the degree, I am to submit a thesis to the Institutions Post Graduate school. My main interest is in the Vocational and Technical Education hence I have chosen the topic above with the aim of ascertaining the needs of Technical Colleges in Delta State.

It should be appreciated if you would be kind enough to complete the questionnaire as conscientiously as possible, I assure you that all answers would be treated in strict confidence.

Thanks for your anticipated cooperation.

Yours faithfully,

Researcher

SECTION A

Please fill in the name of your school and tick the appropriate item which you think represents your opinion.

1. Name of school:.....

2, What is your designation? (a) principal ☐

(b) Vice principal ☐ (c) HOD/HOS ☐ (d) Classroom Teacher ☐ (e) Student ☐

3. What is your highest academic qualification ?

Ph.D	☐
M.Ed, M.A, M.Sc.	☐
P.G.D.E	☐
B.Ed, B.A: B.Sc	☐
N.C.E, NTTC	☐
HND, FTC	☐
OND, Final C & G.	☐
TC II, GCE, SSC, C & G Inter, RSA	☐
First school leaving certificate, J.S.S.C ; SITS	☐

4. What is your area of specialization/studies

(a) Business Education	☐
(b) Technical Education	☐
(c) Science Education	☐
(d) Arts/English Social studies Education	☐
(e) Home Economics	☐
(f) Mathematics Education	☐

5. Teaching Experience

1 - 3 years	☐
4 - 6 years	☐
7 - 9 year	☐
10 - 12 "	☐
13 - 15 "	☐
16 - above	☐

6. What is the population of your school?

a) 0 - 200 ☐

b) 201 - 300 ☐

c) 301 - 400 ☐

d) 401 - 500 ☐

e) 501 - above ☐

7. What is the level of academic performance of your school in NABTEB's examination for the past year.?

a) 80% - 100% (Excellent) ☐

b) 70% - 79% (V.Good) ☐

c) 60% - 69% (Good) ☐

d) 50% - 59% (Average) ☐

e) 40% - 49% (Fair) ☐

f) 30% - 39% (Poor) ☐

(g) 0% - 29% (V.poor ☐

SECTION B

1. How do you assess the level of importance of each of the following resources needed for the training of Technicians in the Technical Colleges in Delta State? Please tick [✓] the appropriate one in your opinion.

1. = very Important (VM)
2. = Important (m)
3. = Undecided (Ud)
4. = Less important (LM)
5. = Not important (Nm)

Important Resources Needed are:

a) Teachers & Instructors

(b) Infrastructures -Cl, workshops,

c) Facilities -Labs, Library, Typing & studios

d) Tools & Equipment

e) Consumable materials

(f) Textbooks & Teaching aids

(g) Finance-grants & maintanace

(h) Guidance Cpunsellors

(i) Effective supervision

(j) Curriculum & C. Assessment

VM	M	Ud	LM	NM
1	2	3	4	5

2. How do you assess the level of adequacy of each of the following resources needed in the Technical colleges in Delta state.

Please tick [✓] the appropriate one in your opinion

1 = very Adequate (VA)

2 = Adequate (A)

3 = Undecided (Ud)

4 = Less Adequate (LA

5 = Not Adequate (NA)

Adequacy of Resources

a) Teachers & Instructors

b) Infrastructures-classrooms & Workshops

c) Facilities-labs, library,Typing & TD studios

d) Tools & Equipment

e) Consumable materials

f) Textbooks & Teaching Aids

g) Finance-grants & Maintenance

h) Guidance Counsellors

i) Effective supervision

j) Curriculum Development & coninuous Assessment.

VA	A	Ud	LA	NA
1	2	3	4	5

3. How do you rate the causes of poor academic performance of students in the Technical Colleges in Delta state?

Please tick [✓] the appropriate one in your opinion

1 = strongly Agree (SA)

2 = Agree (A)

3 = Undecided (Ud)

4 = Disagree (D)

5 = Strongly Disagree(SD)

Causes of Poor Academic Performance

	SA	A	Ud	D	SD
	1	2	3	4	5
a) Lack of Teachers & Instructors					
b) Lack of Demonstrators/Artisans					
c) Lack of Tools & Equipment					
d) Lack of consumable materials					
e) No workshop for practice					
f) No science laboratories & materials					
g) No textbooks and Teaching Aids					
h) Poor dedication to duty by Teachers					
i) Lack of effective supervision by government					
j) Poor academic background of students					

4. How do you rate the following measures recommended to improve the standard of Technical Education in Delta State?

Please tick [✓] the appropriate one in your opinion.

1 = strongly Agree (SA)

2 = Agree (A)

3 = Undecided (Ud)

4 = Disagree (D)

5 = Strongly Disagree (SD)

	SA	A	Ud	D	SD
	1	2	3	4	5
a) Teachers & Instructors					
b) Demonstrators/Artisans					
c) Tools & Equipment, Electricity					
d) consumable materials					
e) library, Textbooks & Teaching Aids					
f) Technical workshops & Classrooms					
g) Science laboratories & Materials					
h) Finance for grants & Maintenance					
i) effective supervision by Education Inspectors					
j) Guidance counsellors					

Adequate provision of resources eg

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