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Instructional Media Use By Faculty
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A Study Of Factors Related To Educational
Innovations in A Nigerian University Context

presented by

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Major professor

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INSTRUCTIONAL MEDIA USE BY FACULTY MEMBERS
IN AHMADU BELLO UNIVERSITY, ZARIA: A STUDY
OF FACTORS RELATED TO EDUCATIONAL INNOVATIONS
IN A NIGERIAN UNIVERSITY CONTEXT

By

Abraham Inanoya Imogie

A DISSERTATION

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ABSTRACT

INSTRUCTIONAL MEDIA USE BY FACULTY MEMBERS IN AHMADU BELLO UNIVERSITY, ZARIA: A STUDY OF FACTORS RELATED TO EDUCATIONAL INNOVATIONS IN A NIGERIAN UNIVERSITY CONTEXT

By

Abraham Inanoya Imogie

Purpose:

The primary purpose of this study was to determine the individual and institutional factors which influence use of instructional media by faculty members in Ahmadu Bello University, Zaria. To achieve this purpose, four objectives were set for the study: (1) determine the extent to which faculty members utilize instructional media; (2) determine the extent to which individual faculty members' perceptions about instructional media, their job status, previous skills and sources of information influence their use of instructional media; (3) identify the ways in which institutional factors such as budgetary provisions, personnel reward mechanisms and administrative policies influence faculty members' use of instructional media.

The ultimate purpose was to draw conclusions and make recommendations to assist a variety of people concerned with educational innovations involving instructional media

Abraham Inanoya Imogie
in Ahmadu Bello University, Zaria in particular and in higher
education institutions in Nigeria in general.

Design and Procedures:

The sample used in this study comprised 273 faculty members from nine academic faculties in Ahmadu Bello University, Zaria. The sample represented a response rate of 73.8 percent of the total faculty members (370) who were randomly selected for the study.

One common questionnaire was completed by the respondents. The questionnaire was used to collect data about the respondents' personal characteristics such as job status, perceptions, levels of skills and training in the use of instructional media. Data were also collected on frequency of instructional media use, University support for instructional media, sources of information and the constraints on instructional media use.

Five research questions and six hypotheses generated from the literature review were answered and tested respectively through descriptive statistics.

Results:

The answers to the research questions revealed that:

1. There was low utilization of instructional media by faculty members.

2. There were six major constraints on the use of instructional media: (a) nonavailability of instructional media when needed; (b) heavy teaching load; (c) lack of appropriate instructional media in some subject areas; (d) lack of training and skills; (e) irregular electrical power supply and (f) lack of information about instructional media.
3. A majority of the faculty members had strong positive perceptions about instructional media.
4. A majority of the faculty members had no previous training and skills in instructional media use.
5. A majority of the faculty members felt that the University was not providing them the necessary support to encourage them to use instructional media.
6. A majority of the faculty members had little or no information about instructional media which are available for their use.

Five of the six hypotheses tested were significantly supported. For example:

- H_1 . The frequency of instructional media use did not vary from one faculty-member grade to another.

- H₂ . With less perceived constraints on instructional media use, the frequency of instructional media use by faculty members was high.
- H₃ . The frequency of instructional media use by faculty members was high when there were more positive perceptions about instructional media.
- H₄ . The frequency of instructional media use was high when faculty members had more positive perceptions about university administrative support for instructional media innovation.
- H₅ . Faculty members with previous training in instructional media had a higher frequency of instructional media use than those without previous media training.
- H₆ . Faculty members who have more sources of information about available instructional media and who used these sources more frequently had a high frequency of instructional media use.

Conclusions:

A variety of instructional media (equipment and materials) were available in the 19 instructional media units in the University. However, there was low utilization of instructional media because of many individual and institutional constraints.

Abraham Inanoya Imogie

An Instructional Innovations Program (IIP) model in higher education was proposed for implementation. The proposal was designed to minimize the identified constraints and encourage faculty members to use instructional media.

DEDICATED

To my father, Oyarekhua who at 98 years old fully appreciates the value of investments in western education.

To my late mother, Idegbumah who in 1954 enthusiastically inducted me into the process of which this dissertation is a peak.

To my brothers and sisters, especially Unuogietse who over the years have constantly supported and sustained my education.

To my wife, Abigail and children (Irhafe, Egwitsue and Idegbumah) whose abundant love, co-operation and support have been crucial factors to my successful career at Michigan State University.

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Many members of the staff at Ahmadu Bello University, Zaria deserve mention for their moral and material support during the collection of data for this study. They include

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TABLE OF CONTENTS

Dedication.	ii
Acknowledgements.iii
List of Tables.	ix
List of Figures	xi

CHAPTER

I. THE PROBLEM	1
Statement of the Problem.	1
The Case for Instructional Media in Nigerian Universities	7
Significance of the Study	11
The Purpose of the Study.	15
Generalizability of the Study	16
Theoretical Framework	17
Research Questions.	19
Research Hypotheses	20
Limitations of the Study.	21
Definitions of Terms.	21
Summary	27
Overview.	29
Footnotes for Chapter 1	30
II. REVIEW OF LITERATURE.	33
Introduction.	33
Rationale for Instructional Media in Higher Education.	34
History of Instructional Media in Nigerian Universities	42
Instructional Media At Ahmadu Bello University, Zaria	46
Resistance to Instructional Media Use in Higher Education	52
Diffusion of Instructional Media in Higher Education.	58
Summary	63
Footnotes For Chapter II.	66

CHAPTER

III. PROCEDURES AND METHODOLOGY.	70
Introduction.	70
Hypotheses.	71
The Population.	72
The Sample.	72
The Selection of the Sample	74
Source of Data.	76
Instrumentation	76
Pilot Test.	78
Collection of Data.	79
Administration of Questionnaire	79
Percentage of Responses	80
Data Analysis	85
Summary	86
IV. ANALYSIS OF RESULTS	88
Introduction.	88
Findings of the Study	89
Research Question 1.	89
Answers to Research Question 1	89
Research Question 2.	91
Answers to Research Question 2	91
Hypothesis 1 and Analysis of Results	93
Research Question 3 (a).	94
Answers to Research Question 3 (a)	94
Hypothesis 2 and Analysis of Results	96
Research Question 3 (b).	98
Answers to Research Question 3 (b)	98
Hypothesis 3 and Analysis of Results	102
Research Question 4.	105
Answers to Research Question 4	105
Hypothesis 4	107
Analysis of Results.	107
Hypothesis 5	109
Analysis of Results.	109
Research Question 5.	111
Answers to Research Question 5	111
Hypothesis 6	113
Analysis of Results.	115
Summary of Findings	115
V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.	120
Introduction.	120

Summary of Findings. . . . .	.123
Low Utilization of Instructional Media. . . . .	.123
Major Constraints . . . . .	.123
Perceptions About Instructional Media . . . . .	.123
Instructional Media Skills and Training . . . . .	.123
Instructional Media Use and Perceptions . . . . .	.123
Sources of Information. . . . .	.124
Faculty Members Grade and Instructional Media . . . . .	.124
University Support. . . . .	.124
Instructional Media Use and University Support . . . . .	.124
Instructional Media Use and Perceived Constraints . . . . .	.124
Instructional Media Use, Skills and Training Levels . . . . .	.125
Instructional Media Use and Sources of Information . . . . .	.125
Discussion and Conclusions . . . . .	.125
Recommendations. . . . .	.126
Priority Recommendations. . . . .	.127
Skills and Training. . . . .	.127
Technical Facilities and Services. . . . .	.128
Availability of Instructional Materials. . . . .	.129
Sources of Information . . . . .	.129
Services of the Center for Educational Technology . . . . .	.130
Major Constraints and University Support. . . . .	.131
Comprehensive Recommendations . . . . .	.132
Components of the Instructional Innovations Program. . . . .	.134
Learning Resources Center . . . . .	.134
Center for Educational Technology . . . . .	.134
Instructional Resources Development . . . . .	.136
Implications for Future Research . . . . .	.138
Reflections. . . . .	.139
Footnotes for Chapter V . . . . .	.142

APPENDICES

A. Statistics of Applications and Offers of Admissions to Nigerian Universities . . . . .	.143
B. Priority Given to Education In The Third National Development Plan, 1975-80. . . . .	.144
C. Universities in Nigeria . . . . .	.145
D. Brief Description of Academic Positions in Nigerian Universities . . . . .	.146
E. Summary of the Functions of Instructional Media Centers in Higher Education . . . . .	.148
F. Academic Units in Ahmadu Bello University, Zaria. . . . .	.150

APPENDICES

G.	Questionnaire Used in Collecting Data.	152
H.	Letter to the Directors, Center for Educational Technology, Ahmadu Bello University, Zaria	161
I.	Letter to the Co-Ordinator (Campus Services) Center for Educational Technology, Ahmadu Bello University, Zaria.	162
J.	Researcher's Letter to Respondents	163
K.	Letter of Introduction From Dr. Bruce Miles.	164
L.	Departments and Academic Faculties From Which Sample Was Drawn	165
M.	Committee of Deans and Directors	167

BIBLIOGRAPHY	169
------------------------	-----

LIST OF TABLES

TABLE	PAGE
3.1 Sampling of Faculty Members.	74
3.2 Distribution of Sample Among Academic Faculties.	75
3.3 Distribution of Responses by Sex	81
3.4 Distribution of Responses by Nationality .	82
3.5 Responses from Faculty of Agriculture. . .	82
3.6 Responses from Faculty of Arts and Social Sciences	82
3.7 Responses from Faculty of Education. . . .	82
3.8 Responses from Faculty of Engineering. . .	82
3.9 Responses from Faculty of Environmental Design	82
3.10 Responses from Faculty of Human Medicine .	83
3.11 Responses from Faculty of Pharmaceutical Sciences	83
3.12 Responses from Faculty of Science.	83
3.13 Responses from Faculty of Veterinary Medicine	84
4.1 Cross-Tabulations of Frequencies of Use of Slides by Faculty Member Grades	95
4.2 Cross-Tabulations of Frequencies of Use of Overhead Transparencies by Faculty Member Grades.	95
4.3 Number and Percentage of Faculty Members Rating Constraints on Instructional Media Use.	97
4.4 Summary of Crosstabulations of Frequencies of Use of Slides by Faculty Members Constraints.	99
4.5 Summary of Crosstabulations of Frequencies of Use of Overhead Transparencies by Faculty Members Constraints.	99
4.6 Number and Percentage of Faculty Members Responding to Positive Perceptions State- ment about Instructional Media	101
4.7 Number and Percentage of Faculty Members Responding to Negative Perceptions State- ments about Instructional Media.	101
4.8 Number and Percentage of Faculty Members With Various Instructional Media Skills. .	101

TABLE	PAGE
4.9 Summary of Crosstabulations of Frequencies of Use of Slides by Positive and Negative Perceptions About Instruc- tional Media. . . . .	.103
4.10 Summary of Crosstabulation of Frequencies of Use of Overhead Transparencies by Positive and Negative Perceptions About Instructional Media . . . . .	.104
4.11 Number and Percentage of Faculty Members Receiving University Support for Instruc- tional Media Use. . . . .	.106
4.12 Crosstabulations of Frequencies of Use of Slides by University Media-Related Support. .	.108
4.13 Summary of Crosstabulations of Frequencies of Use of Overhead Transparencies by University Media-Related Support. . . . .	.108
4.14 Summary of Crosstabulations of Frequencies of Use of Slides by Instructional Media Skills. . . . .	.110
4.15 Summary of Crosstabulations of Frequencies of Use of Overhead Transparencies by Instructional Media Use . . . . .	.112
4.16 Summary of Crosstabulations of Frequencies of Use of Audiotapes by Instructional Media Use . . . . .	.112
4.17 Number and Percentage of Faculty Members Receiving Information on Instructional Media.	.114
4.18 Summary of Crosstabulations of Frequencies of Use of Slides by Sources of Information. .	.116
4.19 Summary of Crosstabulations of Frequencies of Use of Overhead Transparencies by Sources of Information. . . . .	.116

LIST OF FIGURES

FIGURE		PAGE
1.1	Student Enrollment in Nigerian Universities 1961-1978.	10
2.1	Total Student Enrollment and Staff Strength at Ahmadu Bello University Zaria	47
2.2	Organization Chart Centre For Educational Technology, Ahmadu Bello University, Zaria, Nigeria.	51
3.1	Map of Nigeria Showing the Locations of Some of The Campuses of Ahmadu Bello University, Zaria	73
4.1	Number of Faculty Members Using Instructional Media	90
4.2	Number of Professors Using Instructional Members	92
4.3	Number of Readers, (Associate Professors) Using Instructional Media	92
4.4	Number of Senior Lecturers Using Instructional Media	92
4.5	Number of Lecturers Using Instructional Media	92
4.6	Number of Assistant Lecturers Using Instructional Media	92
5.1	Proposed Model for Instructional Innovations Program at Ahmadu Bello University, Zaria	135
	Universities in Nigeria (1948-79)	145

CHAPTER I

THE PROBLEM

Statement of the Problem

This study is concerned primarily with the determination of the factors related to the use of instructional media at Ahmadu Bello University, Zaria. In general, it is a study of factors hindering or facilitating educational innovations in a Nigerian university. The recognition of the power of education as an important instrument of nation building has helped to accelerate the development of university education in Nigeria. Although the number of universities and the student population in Nigeria have both increased considerably since 1960, the situation is far from being satisfactory.

The prevailing problems in the development of university education in Nigeria have been articulated in the following statement issued by the Federal Nigerian Government:

Although, the higher education base of the country has steadily increased in the past decade with the creation of additional universities, nevertheless, the growth rate of enrollment remains rather low. Two main constraints, shortages of academic staff and of accommodation for staff and students have conjoined to impose severe limitations on University admission.¹

As a result of the limitations on University admissions, the current student enrollments in Nigeria universities represent only about 15 percent of the potential student enrollment in the 13 universities. The current limitations on university admissions amidst the very high demand for university education (Appendix A) are strong indicators that increases in university enrollments are expected to continue in the next decades. Besides, the increases in enrollments are inevitable because the Federal Nigerian Government continues to take several steps to enable Nigerian universities to increase their annual intakes of students.

One of the results of the continuous increases in student enrollments and the shortage of academic staff in Nigerian universities in the late 1960s and the early 1970s was the increased use of instructional media. The innovation became necessary because of the resultant large classes which made the traditional lecture methods increasingly inadequate and inappropriate.

The above situation is similar to that which existed in the late 1950s and early 1960s when instructional media became popular in higher education in the United States. During that period, it was strongly believed that a potential solution to many of the problems confronting higher education could be found within the field of instructional media. This belief was strengthened by the development of a new trend

towards a new kind of support for instructional services and extensive development of facilities to encourage the use of instructional media.

According to Brown and Thornton:

Time was when the principal teaching resources available to a professor were the books in the college library, his chalkboard, and an occasional map on the classroom wall...Recently, higher education has exhibited a trend toward a new kind of support for instructional services and an extensive development of facilities to encourage the utilization of new media. This trend is founded on the changing roles of college teachers and influenced by increased enrollments, rising costs, and a growing understanding of the psychology of learning.²

The gradual shift towards the use of instructional media in the United States was encouraged by the increased availability of effective, appropriate, and convenient materials, devices, machines and classroom facilities designed for improving teaching. Apart from the availability of materials, some of the reasons for the increased use of instructional media in higher education during the period can be summed up under what Lewis Mayhew called Contributions of New Media.³ These contributions included:

1. Improvement of Teaching
2. Enrichment of Teaching
3. Greater Service to Greater Numbers
4. Conserving Teacher Time
5. Curricular Enrichment
6. Independent Study
7. Improved Methods of Teaching

8. Understanding Learning Theory

The increased utilization of instructional media in higher education in the United States was also the result of the encouragement and motivation provided by both the National Defense Education Act of 1958 and the Higher Education Act, 1965. Following the launching of the Russian Sputnik, there was a renewed commitment to the security of the United States through the "fullest development of the mental resources and technical skills of its young men and women." That commitment called for additional educational opportunities including the use of modern scientific techniques. The following extracts from the National Defense Education Act of 1958 (Title VII) stated that the Act was designed to encourage research and experimentation in more effective utilization of the new media for educational purposes:

In carrying out the provision of this part the Commissioner, in cooperation with the Advisory Committee on New Educational Media...shall (through grants or contracts) conduct, assist and foster research and experimentation in the development and evaluation of projects involving television, radio, motion pictures, and related media of communication which may prove of value to State or local educational agencies in the operation of their public elementary or secondary schools, and to institutions of higher education, including the development of new and more effective techniques and methods:

- (1) for utilizing and adapting motion pictures, video tapes and other audio-visual aids, film strips, slides and other visual aids,

- recordings (including magnetic tapes) and other auditory aids, and radio, or television program scripts for such purposes;
- (2) for training teachers to utilize such media with maximum effectiveness; and
- (3) for presenting academic subject matter through such media.⁴

The Higher Education Act of 1965 was a further demonstration of the commitment by the Federal Government in the United States to the use of instructional media in higher education. A significant part of this commitment was funding. For example, the Higher Education Act of 1965 had the following financial provisions:

There are authorized to be appropriated \$50,000,000 for the fiscal year ending June 30, 1966, and for each of the two succeeding fiscal years, to enable the Commissioner to make grants under this part to institutions of higher education to assist and encourage such institutions in the acquisition for library purposes of books, periodicals, documents, magnetic tapes, phonograph records, audiovisual materials, and other related library materials...⁵

The increased use of instructional media in higher education in the United States continued through the 1960s to the 1970s. For example, in 1972 the Carnegie Commission on Higher Education Report and Recommendations discussed extensively the role, advantages and limitations of instructional media in higher education. In the report entitled The Fourth Revolution - Instructional Technology in

Higher Education it was recommended that educational institutions, industries and foundations concerned with educational endeavors should make efforts to advance the utilization and development of available technologies for the instruction of the youths.⁶

Today, the world is a place where ideas and innovations can hardly be confined to one country. Therefore, The Fourth Revolution has not been confined to the United States for the "revolution" is also taking place in developing countries such as Nigeria.

There is evidence that some Nigerian universities have embraced The Fourth Revolution by engaging in a variety of instructional technology activities. For example, as far back as 1962, an Audio-Visual Aids unit was established at the University of Ibadan through the aid of UNESCO. Within the last two decades, other Audio-Visual units have been established at the Universities of Lagos, Ife, and Nigeria (Nsukka). At the Ahmadu Bello University, Zaria, the Audio-Visual Aids Communication Unit was established in 1963.

The unit at Ahmadu Bello University, Zaria, now known as The Center for Educational Technology (CET), has developed to a point where it can be described as a leader in educational innovations involving instructional media in Nigerian universities.

It is obvious that instructional innovations cost money, time and energy. In spite of these, there is a strong belief in Nigeria that instructional media can overcome some

of the basic instructional problems created by the new demands and the expansion in university education. However, the crucial issue in Nigeria is the need to avoid situations where educational innovations have been introduced in higher education without commensurate considerations for both institutional and individual faculty members' readiness for the change. The fact that instructional media have been introduced and appear to have been accepted in higher education in the United States does not guarantee that the same acceptance will be found in Nigerian universities. Therefore, the problem is: What must be done to create a climate for educational innovations involving instructional media in Nigerian universities?

The Case for Instructional Media in Nigerian Universities:

A major emphasis in the development plans in post-independence Nigeria (since October 1, 1960) has been on the expansion of educational opportunities. According to Tayo Akpata, (one time Commissioner for Education in Bendel State of Nigeria), the expansion of educational opportunities was in keeping with the "high hopes which Nigerians place on education as a potent instrument for the transformation and modernization of their society."⁷ The transformation and modernization of the Nigerian society could not be achieved without the active participation of the government. The active participation of the government in the development of education has been illustrated by the magnitude of

financial resource allocation given to education. The magnitude has been summarized by the Federal Nigerian Government in the Third National Development Plan:

Historically, education has enjoyed a high priority in Nigeria's development planning. In the first National Development Plan 1962-68, it ranked fifth, judged by the magnitude of financial resource allocation. This implied a sector investment of 10.3 percent of the gross public sector investment of about ₦1.4000 billion.* In the second plan, 1970-74, the sector attracted more emphasis. Its priority rating by the same criterion improved to a position second only to transport. Out of the gross public sector investment of about ₦2.000 billion, it accounted for ₦77.8 million or 13.5 percent of that total investment.⁸

As a result of the high priority which the Federal Nigerian Government gave to education in the 1975-80 National Development Plan (Appendix B) the highest fiscal allocation made by both the Federal and the States Governments went to education in the social sector. On the whole, out of 15 sub-sectoral allocations made by all the States Governments, education received the third highest allocations. One of the outcomes of the active participation of the Nigerian Government in the development of education is the increase in the number of universities from one (1) in 1960 to 13 in 1979 (Appendix C). That represented 1200 percent increase in less than two decades.

A corresponding increase in student enrollment has also been noted. Between 1960 and 1978, the student

*₦1 (Nigerian Naira) = \$1.65 (United States Dollar) approximately.

population grew from 1,395 to 47,000, an increase of 3269 percent (Figure 1-1).

The increase in the number of universities and the overall expansion of higher education opportunities have created for Nigerian universities problems such as the "shortage of academic staff" and lack of instructional materials.

For Nigerian universities to cope with the challenges of development and modernization, the quality of instruction has to be improved through the modification of the traditional teaching methods. One method that was considered necessary for improving the quality of instruction was the introduction and use of instructional media in Nigerian universities.

In this regard, the different Nigerian universities have decided to develop their campus instructional media services. However, such educational innovations would hardly succeed unless they were backed by a climate that was favorable to change. Even when the decision makers in higher education finally realized the advantages of instructional media, such innovations would undoubtedly take time to gain wide acceptance among faculty members whose involvement would be crucial.

There is no agreement on the most effective strategy for introducing instructional media in a given situation. However, a variety of factors related to the creation of a

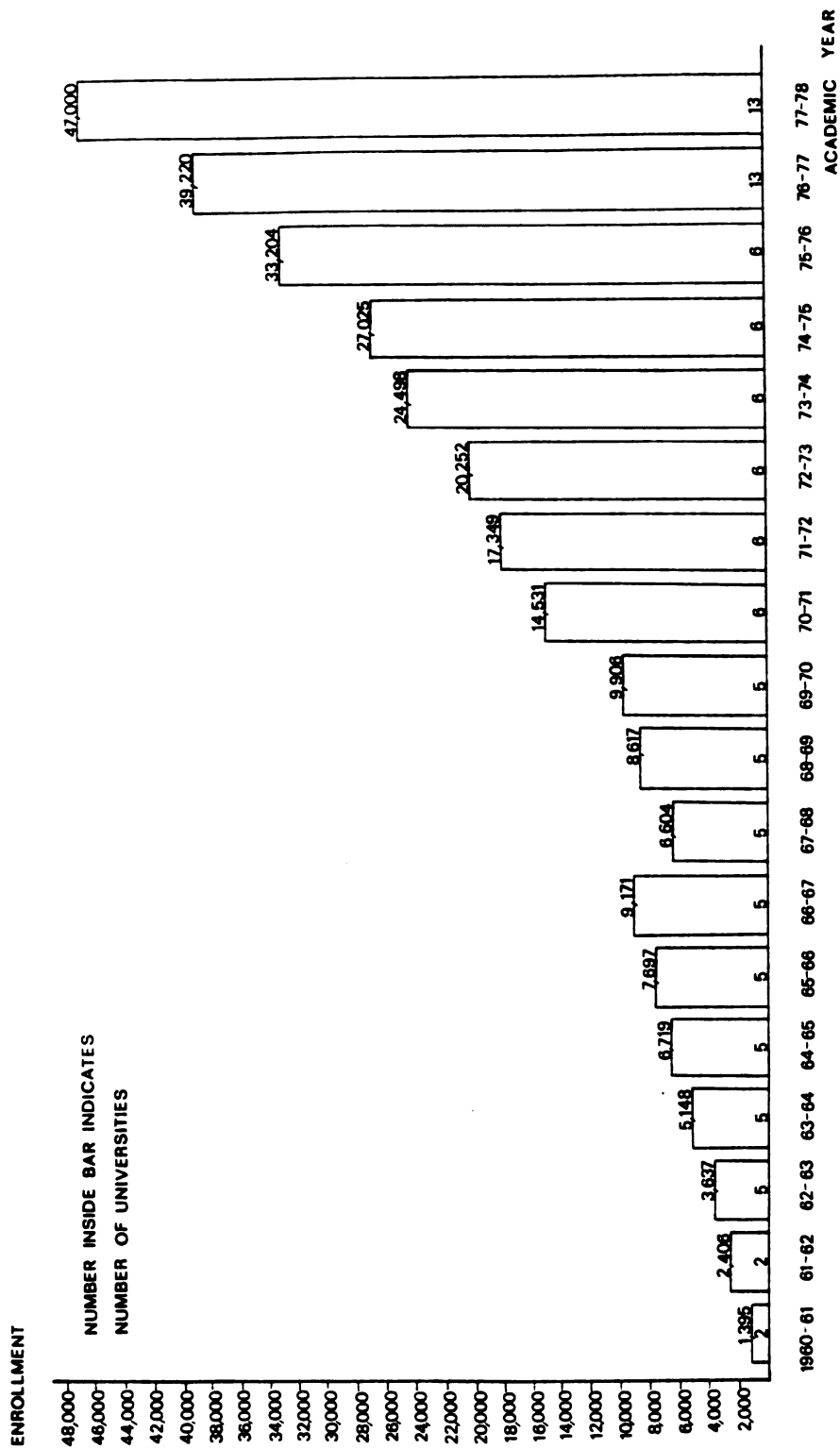


FIGURE 1-1:
**STUDENT ENROLLMENT IN
NIGERIAN UNIVERSITIES 1960-1978**

SOURCE: FAFUNWA, A. B. (1974) AND
OVERSEAS LIAISON COMMITTEE,
AMERICAN COUNCIL ON EDUCATION, (1977)

conducive climate for innovations have been discussed by writers such as Zaltman and Duncan (1977), Diamond (1975) and Davis (1979).

It was never intended that instructional media should replace faculty members in Nigerian universities. Rather instructional media were meant to be integral parts of the teachers' instructional functions. However, these intentions have always been misinterpreted and the use of instructional media by faculty members hindered because of a number of factors such as the inertia of faculty members, apathy of university administrators, and the lack of both material and human support in the universities.

Significance of the Study:

This study is important for a number of reasons. First, the findings of the study would be useful to the following in Nigeria:

1. Individual faculty members in Nigerian Universities.
2. Heads of departments and/or academic divisions.
3. The directors and staff of Educational Technology Centers in Nigerian universities.
4. The new universities who are contemplating the introduction of instructional media.

Second, there are abundant studies on the use and organization of instructional media in higher education in the United States. Some of these studies included those by

Evans (1962, 1970), Atwood (1964), Eichholz and Rogers (1964), Miles (1964), and McIntyre (1963). In contrast, there is a dearth of research studies on the use of instructional media in higher education in Nigeria. This study is intended primarily to fill the gap created by the absence of formal studies.

The diffusion of instructional innovations can be facilitated by a favorable organizational climate coupled with faculty members' readiness. For example, the establishment of the Center for Educational Technology (CET) was a major effort to provide physical facilities to support educational innovations involving the use of instructional media in Ahmadu Bello University, Zaria.

However, the provision of such physical facilities could be only one of the many factors related to the diffusion of instructional media in higher education. There could be other factors such as availability of instructional materials and equipment, faculty members' perceptions about media, university financial and general support for instructional media use, faculty development and the dissemination of information.

In the United States of America where similar instructional innovations have been introduced in higher education, studies were conducted in the 1960's to identify factors related to the "extent", "whys" and "hows" of instructional media utilization. For example, Everett Rogers (1962) identified several variables which he termed antecedents in diffusion theory. In relation to instructional media,

Rogers said that these antecedents are factors which exist prior to the introduction of the innovation:

Antecedents are those factors present in the situation prior to the introduction of an innovation. Antecedents are of two major types: (1) the actor's identity and (2) his perception of the situation.⁹

The two categories of antecedents are prerequisites to the awareness and the eventual adoption of instructional innovations. Therefore, it was assumed that before the administrators decided to introduce instructional media in Ahmadu Bello University, Zaria, considerations of the identities and perceptions of the faculty members would have been considered.

Usually, the aspects of organizational plans for instructional media in higher education that have been examined in both prescriptive writings and formal studies include the formulation of guidelines and policies, personnel assignments, provision for physical facilities and budgetary provisions for instructional media use. The assumption has been that when these are ignored in the organizational plans, there would occur low usage of instructional media. Perhaps, this was what Mayhew suggested when he said that:

One is also struck by the few people actually using the equipment available...One matter which must be settled first is the provision of greater time for faculties to use the devices. Relatively few of the experiments realistically face the budgetary and personnel problems of allowing faculty members more time to use television, teaching machines, laboratories, or slide equipment to enrich or improve their teaching.¹⁰

In a study conducted in 1962 at the University of Houston on educational television use, Evans concluded that the absence of guidelines and lack of knowledge of antecedents in instructional innovations may increase resistance to instructional media use by faculty members.¹¹

Findings from the studies by Atwood,¹² Eichholz and Rogers¹³ and Miles¹⁴ indicated that without an effective organizational plan for instructional innovations, faculty members will remain reluctant to modify their traditional instructional practice. These findings implied that an effective organizational plan for the diffusion of educational innovations, is a prerequisite to a high level instructional media usage by faculty members.

In a study dealing with faculty members resistance to the use of instructional media, Kenneth McIntyre stressed the need to identify the specific barriers to instructional media use as a way to overcoming the resistance to instructional media in higher education when he said:

Although higher education has certainly provided strong stimulus to technology in our society, it has remained resistant to its use...The identification of specific barriers to the optimum use of audiovisual media in education is the first step toward devising ways of overcoming each barrier.¹⁵

Third, in view of the complexities involved in instructional innovations, this study is necessary for the understanding of both the organizational and management techniques required for the successful introduction and diffusion of instructional innovations at Ahmadu Bello

University, Zaria. The hope of realizing this goal has been based on the general rationale for research. According to Charles Hoban:

The purpose of research is generally accepted to be that of discovering order and regularity of events and identifying and describing the mechanisms and dynamics of orderly and regularly occurring events...testing results for likelihood of random occurrence. Once established, order regularity and their dynamics enable prediction of consequences. Prediction of consequences permits increased control of consequences.¹⁶

The Purpose of the Study:

The study is designed:

1. To determine the extent to which faculty members utilize instructional media in Ahmadu Bello University, Zaria.
2. To determine the extent to which individual faculty members' perception about instructional media, their job status, previous skills in the use of instructional media and the sources of information about instructional media, influence their use of instructional media in the University.
3. To identify the ways in which institutional factors such as budgetary provisions, personnel reward mechanisms and administrative policies, influence the extent to which faculty members use instructional media in the University.

Generalizability of the Study:

The findings from this study at Ahmadu Bello University, Zaria, can be generalized to other Nigerian universities. This assertion is based on the effects of the Federal Nigerian Government's intervention in university education. The Federal Nigerian Government has stated categorically that:

Government intention to accelerate the production of higher level personnel to meet the huge requirements of the economy provides the motive force for the extent of government intervention in higher education. With higher education virtually now the exclusive responsibility of the Federal Government the bulk of the capital expenditure proposed will be accounted for by the Federal Government.¹⁷

There are two aspects of the Federal Nigerian Government's position on higher education which make the generalizability of the findings to other Nigerian universities reasonable.

First, all the Nigerian universities are Federal Nigerian Government owned and controlled. Their activities and programs are financed and co-ordinated by both the National Universities Commission (NUC) and the Federal Ministry of Education.

Second, the Federal Government ownership and control affect key aspects of university development and administration such as finance, recruitment, promotion and discipline of staff, administrative policies, academic programs, job status, faculty reward systems, curricula and educational

philosophy which have become substantially uniform in all the Nigerian universities.

Theoretical Framework

This study is based on theories of diffusion of innovations. In this regard, Zaltman and Duncan's Strategies for Planned Change (1976), Diamond et al's Instructional Development for Individualized Learning in Higher Education (1975), Richard Evans' Resistance to Innovation in Higher Education (1970), Abedor and Sachs'...Readiness for Instructional Innovation in Higher Education (1978) provide a useful conceptual framework for this study.

Of particular value to this study are the methods of reducing resistance to change treated extensively by Zaltman and Duncan. As prerequisite for effective educational innovations, Zaltman and Duncan have suggested that:

There should be top-level support in the system for the proposed change or innovation or resistance will be encountered.¹⁸

The two authors have also stressed that:

The system should try to provide rewards:
-incentives to participants for adopting the change or innovation.
-that are attractive to them as a way of reducing their resistance.¹⁹

In planning for instructional innovations in higher education, the need for a facilitating environment must not be ignored. According to Diamond, et. al. :

If a program of academic innovation is to be effective, it must exist in an environment that encourages and facilitates change.²⁰

The type of supportive climate for instructional innovations referred to above include committed administrative leadership, support from central administration, formal faculty reward systems, established procedures and policies, formal organization to facilitate change and effective communications systems.

Considerable attention has been devoted to the issue of organizing for the purpose of achieving the desired climate for educational innovations. In this regard, there is a school of thought which holds that a successful integration of Faculty Development (FD), Organizational Development (OD) and Instructional Development (ID) can provide the necessary readiness for instructional innovations in higher education. In support of this proposition, Abedor and Sachs had this to say:

It is the sum of individual faculty readiness and organizational readiness which provides the critical combination of characteristics prerequisite to the adoption of a particular innovation.²¹

The above proposition is pertinent to this study because universities are complex entities with numerous characteristics which can hinder or facilitate the diffusion of instructional innovations. These complex characteristics are the principal targets of both Faculty Development and Organizational Development. For example, while Faculty

Development activities are usually focused on the knowledge, skills, sensitivities and techniques of individual faculty members, Organizational Development activities are directed at affecting changes in the structure, policies and environment in which the changes are to take place.

Research Questions:

Data collected for this study were used to answer the following research questions which have been derived from literature dealing with instructional innovations in higher education:

1. To what extent are the instructional media in Ahmadu Bello University, Zaria being used by faculty members?
2. Which grades of faculty members in Ahmadu Bello University, Zaria make the most use of instructional media?
3. (a) What are the constraints on instructional media use by faculty members in Ahmadu Bello University, Zaria?
(b) What individual factors hinder or facilitate the use of instructional media by faculty members?
4. What specific support is provided by the University administration to encourage faculty members in the use of instructional media in Ahmadu Bello University, Zaria?

5. What are the sources from which faculty members in Ahmadu Bello University, Zaria obtain information about instructional media resources?

Research Hypotheses:

In this study, the following research hypotheses were tested:

- H₁ . The frequency of instructional media use will vary from one faculty-member grade to another.
- H₂ . With less perceived constraints on instructional media use, frequency of instructional media use by faculty members will be high.
- H₃ . The frequency of instructional media use will be high when faculty members have more positive perceptions about instructional media.
- H₄ . The frequency of instructional media use will be high when faculty members have more positive perceptions about University administrative support for instructional media innovation.
- H₅ . Faculty members with previous training in instructional media will have a higher frequency of instructional media use than those without previous media training.
- H₆ . Faculty members who have more sources of information about available instructional media and who use these sources more frequently will have a high frequency of instructional media use.

Limitations of the Study:

This study had some limitations. First, the study did not consider:

- (a) the impact of instructional media on student learning in Ahmadu Bello University, Zaria.
- (b) the qualitative use of instructional media by the faculty in Ahmadu Bello University, Zaria.
- (c) the characteristics of the classrooms and other physical facilities provided as they relate to instructional media innovations.
- (d) the attitudes of students to instructional media in Ahmadu Bello University, Zaria.

Second, the mobility of faculty members between Nigerian universities could be high because of the uniformity of roles and conditions of services. This mobility might have affected the study as some of the randomly selected faculty members might have just arrived from other universities. The responses from such faculty members might have affected the validity of the findings on instructional media innovations at Ahmadu Bello University, Zaria.

Third, although the questionnaire had been tested for reliability and validity, there were no independent and scientific ways of preventing faculty members from injecting their personal motives, grievances and frustrations about their jobs into their responses.

Definition of Terms:

In order to establish some degree of commonality of meaning for the readers of this study, the following

definitions of unique terms have been provided. In most cases, the source of each definition has been identified. The definition of terms which have not been so identified, are those derived from general usage.

1. Audiovisuals: (1) refers to seeing and hearing (2) the equipment and materials used for communication in instruction. Includes motion pictures, television, printed materials, computer-based instruction, graphic and photographic materials, sound recordings and three-dimensional objects. (Seibert, et. al (eds) - Educational Technology: A Handbook of Standard Terminology..., 1975, p. 213-214).
2. Change: in a social context refers to the process by which alteration occurs in the structure and functions of a social system (Rogers, 1973, p.7.).
3. Constraints: refers to the state of being held back, restricted, limited or compelled to avoid or perform some action.
4. Department: a division within a faculty of a university, organized around particular subject area (Walker, et al, 1973, p.37).
5. Deputy Vice-Chancellor: the senior executive and academic officer who assists the Vice-Chancellor in the day-to-day administration and management of a university.

- ✓6. Developing nations: those nations of the world which are considered to be technologically backward by the western world standards.
7. Development: a widely participatory process of social changes in a society, intended to bring about both social and material advancement for the majority of the people through a greater control over their environment (Rogers, 1973).
8. Education: the aggregate of all the processes by means of which a person develops abilities, attitudes and other forms of behavior of positive value in the society in which he lives (Dictionary of Education, 1959, p.191).
9. Educational Innovation: is any willed, planned and novelty idea, practice or object which is considered to be more effective and efficient in accomplishing a desired goal in the educational system.
10. Effectiveness: the degree to which an effort produces the desired results.
11. Expatriate: any non-Nigerian member employed or working in a business or organization in Nigeria.
12. Faculty: unit within university structure e.g. faculty of education, organized around a general area of knowledge, having its own courses, regulations and organization of staff members and granting particular degrees (Walker, et al, 1973, p. 51).

13. Faculty Development: is a process of enhancing the talents, expanding the interests, improving the competence and otherwise facilitating the professional and personal growth of faculty members, particularly in their roles as instructors (Gaff, 1975,p.14).
14. Faculty Members (Lecturers): the members employed primarily to teach in a Nigerian university. See details in Appendix D.
15. Higher Education: refers to the education given in the post-secondary section of the national education system. It covers education given in Universities, Polytechnics and College of Technology (Nigerian National Policy on Education, 1977, p.14). Higher Education as used in this study refers exclusively to university education.
16. Individual Readiness: is a combination of characteristics which influence an individual's decision to innovate (Bass, et al, 1978, p. 7).
17. Institute: used generally for a grouping together of a number of disciplines often working in a degree of administrative separation for purely research purposes but ultimately responsible to the university (The Development of Higher Education in Africa, 1963, p. 315).
- ✓18. Instructional Development: is the systematic and continuous application of learning principles

and educational technology to develop the most effective and efficient learning experience for students (Gaff, 1975, p. 47).

- ✓19. Instructional Media: self-supporting devices which can be used by instructors to present a complete body of information in the teaching-learning processes. (AECT, Audiovisual Process in Education, 1971, p.86). Instructional media as used in this study is limited to optical and electronic materials and equipment such as television, motion pictures, sound recordings, graphic and photographic materials.
- ✓20. Instructional Technology: a complex, integrated process involving people, procedures, ideas, devices, and organization for analyzing problems and devising, implementing, evaluating and managing solutions to those problems in situations where learning is purposeful and controlled.
21. Ministry of Education: government department headed by a Minister of Education, appointed by the President of the Federation of Nigeria. The Ministry of Education is responsible for all aspects of primary, secondary and higher education in Nigeria.
22. National Universities Commission (NUC): a statutory arm of the Ministry of Education established in 1963 with powers to oversee the development of university education in Nigeria.

23. Organizational Development: is an effort to improve an organization's problem-solving and renewal processes, particularly through a more effective and collaborative management of organization culture (Gaff, 1975, p. 76).
24. Organizational Readiness: is a combination of characteristics which influence the acceptance or tolerance of an innovation in the organization (Bass, et al, 1978, p.8).
25. Perception: the way things look or sound to us.
26. Senate: a body composed largely of heads of departments with some other representations in the university, of which the Vice-Chancellor is the ex-officio chairman, is the chief academic body subject to the power of the council. It approves and coordinates the work of faculties, makes recommendations for academic appointments (The Development of Higher Education in Africa, 1963, p. 315).
27. Skills: abilities acquired by observation, study or experience in mental and/or physical performance (Seibert, et al, 1975, p. 218).
28. Traditional Teaching Method: face-to-face lecturing or tutoring by a teacher making use of print materials mainly.
29. Training: a planned and systematic sequence of instruction under competent supervision designed to impart predetermined skills, knowledge or

abilities with respect to designated occupational objectives (Seibert et al, 1975, p.219).

30. Vice Chancellor: the principal executive and academic head of a university. (Walker, et al, 1973, p. 129). This is similar to the office of President in a United States University.
31. University: a chartered institution of higher education...having usually two or more professional (and liberal arts) schools or faculties empowered to confer degrees...in various fields of study (Walker, et al, 1973, p. 128). A center or an institution of higher learning. University in this study refers to Ahmadu Bello University, Zaria.

Summary:

The development of education in Nigerian Universities in the last two decades has been affected by the lack of adequate academic staff to match the increases in student enrollment. Although the number of universities have increased over the years, the current annual students intake in all the thirteen universities represent only 15 percent of the potential students annual admissions.

One of the outcomes of the above situation was the realization that the traditional teaching methods have become both inadequate and inappropriate for the new situation. As a result, instructional media was introduced into most Nigerian universities.

Ahmadu Bello University, Zaria is one of the Nigerian Universities where it has been assumed that the potential solutions to the educational problems referred to above, can be found within the field of instructional media. This assumption was based on the same rationale that encouraged the diffusion of instructional media in higher education in the United States in the last two or three decades.

Several Nigerian Universities have introduced instructional media into their educational systems. For example, in 1962 the first Audio-Visual unit in a Nigerian university was established at the University of Ibadan. In 1963, the nucleus of the present Center for Educational Technology (CET) at Ahmadu Bello University, Zaria, was established.

However, many instructional innovations have been introduced in higher education without adequate considerations for both the individual and institutional factors that may work against the success of such changes. This study is therefore designed to determine the individual and institutional factors influencing instructional media innovations at Ahmadu Bello University, Zaria.

The need for this study is strengthened by the absence of research studies on the diffusion of instructional media innovations in Nigerian universities.

The findings and recommendations from this study can benefit faculty members, Department Heads, Deans of academic faculties and university administrators in their decisions concerning the introduction and diffusion of instructional

media innovations at Ahmadu Bello University, Zaria, in particular and Nigerian universities in general.

Overview:

In Chapter I, the need for and purpose of this study were stated. It stated that educational innovations involving instructional media in higher education require both institutional and individual faculty-members' support.

A review of literature pertinent to this study has been done in Chapter II.

The procedures and methodology for the study have been presented in Chapter III. These included a description of the population, the sampling technique and the instrumentation.

In Chapter IV, analysis of the data and the findings were presented, against the set probability for rejecting or accepting each null hypothesis.

The summary, conclusions and recommendations made on the basis of the findings were presented in Chapter V.

FOOTNOTES FOR CHAPTER I

¹Federal Republic of Nigeria, Third National Development Plan, 1975-80, Volume I (Lagos: The Central Planning Office, Federal Ministry of Economic Development, 1975), p.245.

²James W. Brown and James W. Thornton, Jr., New Media in Higher Education, (Washington, D.C.: Association for Higher Education and Department of Audiovisual Instruction, NEA, 1963), p.VII (Preface)

³James W. Brown and James W. Thornton, Jr., Ibid. (1963), p. 166-168.

⁴United States Statutes at Large, National Defense Education Act of 1958, (Washington, D.C.: U.S. Government Printing Office, 1959), Vol. 72, Part I, p. 1595.

⁵United States Statutes at Large, Higher Education Act of 1965, (Washington, D.C.: U.S. Government Printing Office, 1966), Vol. 79, p. 1224.

⁶The Carnegie Commission on Higher Education Report and Recommendations, The Fourth Revolution: Instructional Technology in Higher Education (New York: McGraw Hill, 1972), p.45.

⁷Tayo Akpata, "Take-Over of Schools," Take-Over of Schools In Mid-Western Nigeria, (Benin City: A Midwestern Nigerian Government Publication, 1973), p.6.

⁸Federal Republic of Nigeria, op cit, (1975), p. 237.

⁹Everett M. Rogers, Diffusion of Innovations (New York: The Free Press, 1962), p.305.

¹⁰Lewis B. Mayhew, "A Summing Up", in New Media in Higher Education, (ed) by James W. Brown and James W. Thornton, Jr. (Washington, D.C.: Association for Higher Education and the Division of Audiovisual Instructional Service of the National Education Association, 1963), p. 173.

¹¹Richard I. Evans, The University Faculty and Education Television: Hostility, Resistance and Change, (Title VII Report, Grant No. 741015, 1962, University of Houston).

¹²M.S. Atwood, "Small-scale Administrative Change: Resistance to the Introduction of a High School Guidance Program", in Innovation in Education, ed. by Matthew B. Miles (New York: Teachers College, Columbia University, 1964), p.49.

¹³Gerhard Eichholz and Everett M. Rogers, "Resistance to the Adoption of Audiovisual Aids by Elementary School Teachers: Contrasts and Similarities to Agricultural Innovation," in Innovation in Education ed by Matthew B. Miles (New York: Teachers College, Columbia University, 1964), p.299.

¹⁴Matthew B. Miles, "Educational Innovation: Some Generalizations", in Media and Educational Innovation ed by Wesley C. Meierhenry (The University of Nebraska: The University of Nebraska Extension Division and the University of Nebraska Press, 1964), p. 198.

¹⁵Kenneth M. McIntyre, A Study to Determine Specific Sources of Resistance to the Use of Audiovisual Materials by College and University Teachers and the Development of Procedures for Overcoming the Barriers to Optimum Use, Title VII (A) Final Report, Grant No. 731052, 1963, University of North Carolina at Chapel Hill.

¹⁶Charles F. Hoban, "Dial "T" Tryst", in Media and Educational Innovation, ed by Wesley C. Meierhenry (The University of Nebraska: The University of Nebraska Extension Division and the University of Nebraska Press, 1964), p.346.

¹⁷Federal Republic of Nigeria, op cit, (1975), p.256.

¹⁸Gerald Zaltman and Robert Duncan, Strategies for Planned Change (New York: A Wiley Interscience Publication, 1977), p.88.

¹⁹Gerald Zaltman and Robert, Ibid (1977), p.89.

²⁰Robert M. Diamond, et al, Instructional Development for Individualized Learning in Higher Education, (New Jersey: Educational Technology Publications, 1975), p.17.

²¹Allen J. Abedor and Stephen G. Sachs, "The Relationship Between Faculty Development (FD), Organizational Development (OD) and Instructional Development (ID): Readiness for Instructional Innovation in Higher Education," in Instructional Developments: The State of the Art, ed by Ronald K. Bass et al (Columbus, Ohio: Collegiate Publishing, Inc., 1978), p.6.

CHAPTER II

REVIEW OF LITERATURE

INTRODUCTION

This chapter contains a review of the literature dealing with instructional media in higher education. This review has been subdivided as follows:

1. Rationale for instructional media in higher education.
2. History of instructional media in Nigerian universities.
3. Instructional media in Ahmadu Bello University, Zaria.
4. Resistance to instructional media in higher education.
5. Diffusion of instructional media in higher education.

A majority of the studies and writings were done in the 1950s and 1960s. However, they are still relevant to this study because of the similarities between the characteristics of higher education in the United States during that time and the current characteristics of higher education in Nigeria.

The characteristics include massive increases in student enrollments, shortage of qualified academic staff, and the availability of Federal Government funds. Additionally, universities in both Nigeria and the United States are basically centers of research, teaching and preservation of knowledge.

The similarities between higher education in the United States and Nigeria encouraged some universities in both Nigeria and United States to develop some working relationships during the 1960s. In particular, many United States agencies and organizations also helped in the introduction of instructional media in higher education in Nigeria. They include the United States Agency for International Development (USAID), Indiana University, Ford Foundation and Carnegie Corporation of New York. Another important factor in the adoption of instructional media innovations in higher education is that most of the present instructional media leaders in Nigeria were trained in the United States.

Rationale for Instructional Media in Higher Education

The use of instructional media in higher education in the United States in the sixties was in response to increasing enrollments, and the lack of trained faculty and Federal Government support. The belief at that time was that instructional media would provide potential solutions to the instructional problems created by increasing enrollments and faculty shortage.

One of the arguments for the use of instructional media in higher education was their ability to stimulate students through both visual and auditory controls especially in large classrooms. According to Miller:

Teaching at any level requires that the student be exposed to some form of stimulation. Learning cannot take place in a sensory vacuum. As a minimum physical requirement the instructor must be able to produce stimuli having enough strength and definition to get through to the student... the student must notice something. In a large classroom or auditorium students in the back rows must be able to hear and if there is something to see, they must be able to see it. By the use of modern technology we can control the size of the visual image and the amplitude the sound. We can control the rate of apparent motion or show inaccessible things or those that are remote in space or time.¹

In a situation of explosive increases in student enrollments, Brown and Thornton have argued that instructional media can be used to great advantage:

There is need to point out here the obvious advantages offered by the new media in instances where it becomes necessary or desirable to conduct instruction or certain phases of instruction on a large-group or mass basis. However, it is appropriate to note that the added powers of instruction available through the use of modern technology do not necessarily tend to increase the size of instructional groups or to produce any particular type of instructional configuration. The true meaning of this added power is that we have a vastly greater degree of control, or freedom to vary the size of group and format of instruction to achieve various educational goals.²

Another argument for the use of instructional media in higher education is that slides, filmstrips, motion

pictures, overhead transparencies and other new media can be readily adapted to serve the instructional needs of both large and small groups.

There are those who argued that the characteristics of the new media made them very appropriate for instructional purposes in a variety of forms in higher education. The characteristics which suggest the potential benefits of instructional media in higher education have been explained by Brown and Thornton as follows:

The new media comprise a diverse group with variant properties, capabilities and psychological implications. Some are mass media; some are adapted to smaller groups or individuals. Some transmit both visual and auditory stimuli; others are limited to one sensory mode. Some media can transmit live presentations whereas others are limited to the reproduction of recorded materials. Some can serve as channels for total instructional presentations, as in the case of television and motion pictures.³

The roles of instructional media in higher education have been expressed in terms of research, substance, method, structure, quality and quantity. For example, in a Ford Foundation Report (1973) on the uses of instructional technology, Armsey and Dahl concluded that instructional technology can be used:

to improve instruction (qualitative); to educate more people (quantitative); to learn about learning (research); to reform the curriculum (substance); to improve the process (method); and to anticulate the system (structure).⁴

The above conclusions of the Ford Foundation Report (1973) corresponded with most of the findings of the

President's Commission on Instructional Technology (1970) which enumerated several potential benefits of educational technology in higher education:

1. Technology can make education more productive.
2. Technology can make education more individual.
3. Technology can give instruction a more scientific base.
4. Technology can make instruction more powerful.
5. Technology can make learning more immediate.
6. Technology can make assess to education more equal.⁵

A basic reason for the adoption of instructional media in higher education include the evidence provided by research studies that learning can take place through instructional media. Over the years, several studies have shown that effective learning can indeed take place through motion pictures, slides, filmstrips, television, radios and other instructional media items.

The use of instructional media represents one of the most heavily researched areas in modern education. For example, in the 1969 Encyclopedia of Educational Research, Twyford⁶ summarized the findings of several studies dealing with the effectiveness of media in higher education. Similarly, over 137 studies of research projects under the first two years of the National Defense Education Act, Title VII (New Educational Media) have been reviewed. The results of most of these studies showed that instructional media are effective means of instruction.

There is overwhelming evidence that people learn from motion pictures. Results of studies conducted by Hoban⁷ and Knowlton⁸ showed that people learn factual information, perceptual-motor skills, and concepts from motion pictures.

On the application of instructional television, Carpenter concluded that it has been used successfully for school, college, regional, state-wide and national programs:

Successful models are in existence for public school systems, for colleges and universities, for regional and state-wide areas, and for national programs.⁹

The effectiveness of learning from television has always been measured either by comparison with conventional instruction or by comparison with some absolute or assumed standard. According to Chu and Schramm:

Television instruction has frequently been compared with no instruction. In other words, does the student learn from television? A surprisingly large number of experiments have been done this way...

...compared 58 education majors who have been randomly assigned either to a television group or a control group. The former group watched six 45-minutes art lessons over six weeks, while the later did not. A post-test showed, ...a significant difference in favour of the television group.¹⁰

From this study, it was concluded that instructional television is not only an effective but also an efficient medium of instruction in higher education. This result agreed with the conclusions of Chu and Schramm in their comprehensive review of studies on instructional television:

1. Given favorable conditions, children learn efficiently from instructional television.
2. Instructional television can be used efficiently to teach any subject matter where one-way communication will contribute to learning.
3. Given favorable conditions, pupils can learn from any instructional media that are now available.
4. The use of visual images will improve learning of manual tasks, as well as other learning where visual images can facilitate the association process.

Results of some of the studies cited by Chu and Schramm showed that instructional television is an effective instructional medium:

Lottes (1961) randomly assigned 213 primary school teachers to two treatment groups. The experimental group viewed 15 half-hour programs on reading instruction. The control group was told to write weekly reports on reading instruction so that any Hawthorne effects could be assessed. The TV group teachers showed a significant increase in classroom performance, while the control group had no improvement.¹¹

Pasewark (1957) conducted an experiment on teaching typewriting by television. Both the TV group and the face-to-face group received 48 hour-long typing lessons from the same instructor. At the end of the course, the television group students typed significantly faster than the face-to-face group students.¹²

Macomber (1956) compared television instruction and conventional instruction in a college human biology course. He found that the TV-taught students scored significantly higher than the face-to-face students.¹³

Schramm (1962) summed up 393 experimental comparisons on television vs. classroom teaching, including a considerable amount of unpublished material. He reported that 255 of these comparisons showed no significant differences, 83 were significantly in favor of televised teaching, and 55 significantly in favor of conventional teaching.¹⁴

Several hypothetical writings and empirical studies dealing with audio visual devices have supported the view that effective instruction can be made through instructional media.

For example, a major rationale for the use of instructional media in instruction is the assumption that in instruction, sound can be used to establish association of ideas and the development of thought through audio-visual materials. According to Travers:

London (1936, p. 135) states that one of the functions of music in the audio input of a motion picture is "to establish associations of ideas and carry on development of thought."¹⁵

The effectiveness of audiovisual materials in instruction has been viewed from both auditory and visual perspectives. For example, many studies have been undertaken in which verbal material has been presented through the eye alone, the ear alone, and through both senses. The studies cover a great diversity of materials, subjects, and learning and retention conditions. A number of generalizations emerged from these studies:

A combined visual and auditory presentation of materials leads to more efficient comprehension than the presentation of either auditory or visual material alone.¹⁶

Usually difficult material is more effectively received with a visual presentation, whereas particularly easy material is better understood with an auditory presentation. The relative effectiveness of the visual presentation increases with increasing difficulty of the material.¹⁷

When comprehension is tested by an immediate recall of the material, a visual presentation is favored; if the test of comprehension is made after a considerable interval of delay, an auditory presentation is favored.¹⁸

One of the most significant advantages of the visual type presentation system is the relatively greater referability, or opportunity for reviewing the material, that it affords. It has been found that the less the referability afforded by a visual presentation system, the less is its advantages over an auditory presentation.¹⁹

The role of audiovisual devices in instruction has been presented in literature. For example, the first section of Dale's (1954) book which is entitled Theory of Audio-Visual Instruction implied that the construction and use of audio-visual devices are based on a set of principles. Dale pointed out that audio visual materials are effective media of extending the range of our experiences by bringing the world to the classroom. He also argued that many who dropped out of school did so because their work was bookish and lacked contact with reality. The use of suitable audio visual material will make school work more interesting.

In conclusion, Dale cited the following as proven contributions of audio visual materials:

1. They supply a concrete basis of conceptual thinking and hence reduce meaningless word responses of students.
2. They have a high degree of interest for students.
3. They made learning more permanent.
4. They offer a reality of experience which stimulates self-activity on the part of pupils.
5. They develop a continuity of thought; this is especially true of motion pictures.
6. They contribute to growth of meaning and hence to vocabulary development.
7. They provide experiences not easily obtained through other materials and contribute to the efficiency, depth, and variety of learning.²⁰

History of Instructional Media In Nigerian Universities

Reference has already been made to the growth in the number of universities and student enrollments in Nigerian universities during the last two decades. Instructional problems created by the expansion in higher education opportunities demanded quick solutions. The use of instructional media was seen as a potential solution to some of the problems.

The introduction of instructional media in Nigerian universities occurred in stages. Before the 1960's, instructional media, especially Educational Television and

Educational Radio services, were limited to secondary schools and Teachers' Training Colleges. These programs were developed by the Educational Broadcast Units of the Ministries of Education and were broadcast off-air by commercial television and radio stations during specified hours of the day.

It was not surprising, therefore, when the first official support for instructional media in Nigerian universities was directed towards the pre-service and in-service education of teachers and audio-visual loan services for secondary schools.

A historical review of the early use of audio-visual aids in the older universities in Nigeria was made by Owuna²¹ in 1977. The older universities in Nigeria are the Universities of Ibadan, Lagos, Ife, Nigeria (Nsukka) and Ahmadu Bello University, Zaria.

The Audio-Visual Aids Unit of the Institute of Education, University of Ibadan was established in 1962 with the assistance of UNESCO. By 1967, more material and financial assistance were received by the unit from other international organizations such as the United Kingdom Ministry of Overseas Development, the Carnegie Corporation of New York and the Canadian Universities Overseas. This assistance enabled the University of Ibadan to establish an Audio-Visual Aids Center which provided the following:

1. Audio-Visual loan services to secondary schools and teachers' training colleges.

2. Resource services to members of the university community.
3. Closed-circuit educational television programs which were transmitted by the Western Nigerian Television (WNTV) through the cooperation of the then Western Nigeria Ministry of Education.
4. Instructional media courses for school teachers.
5. Film library services for schools.
6. Publication of two Educational Research Journals-- (West African Journal of Education since 1962; and West African Journal of Educational Research since 1974).

At the University of Lagos, there is an Audio-Visual Aids unit in each of the academic faculties. The various departments have been using the facilities, especially the television services, to support their undergraduate instructional programs. In this university, the College of Education and the Department of Mass Communication are the leaders in instructional media utilization.

Through the help of a Ford Foundation grant, the Comparative Education Studies and Adoption Center (CESAC) was established at the University of Lagos. This center has been utilizing instructional media extensively in its off-campus non-degree education programs.

The Institute of Education at the University of Ife was established in 1968 partly with funds provided by the

Ford Foundation. The Institute has been able to provide the following:

1. Audio-Visual Aids loan service for secondary schools and teachers' training colleges.
2. A closed-circuit instructional television service.
3. Educational television programs for public schools.
4. Graphic and photographic laboratories.

The University of Ife has an excellent closed-circuit television service which has been extensively utilized in the General Studies instructional programs for undergraduates. The enrollments have always been in the hundreds because the General Studies courses are part of the university's requirements for the baccalaureate. The university was, therefore, compelled to instruct these extra-large classes through closed-circuit television.

The University of Ife recently took steps to upgrade the status of instructional media in the university of creating a Department of Educational Technology in the Faculty of Education. One of the primary functions of the department was to organize courses in instructional media for pre-service teachers in the Faculty of Education. This measure was taken in response to the growing demand in Nigeria for teachers who are well versed in educational technology.

This current emphasis on instructional media at the University of Ife required a general review of the Faculty

of Education teachers' training program. The review resulted in the integration of instructional media into the undergraduate curriculum in the Faculty of Education. According to Johnson and Agun, the current policy requires that:

...the bachelor's degree candidate at the University of Ife, Faculty of Education, takes a general education program that was revised in 1978 placing more emphasis on course work in education...plus required courses in educational technology...Each candidate for the B.S....in Education must take a course in the foundations of educational communications and technology.²²

At the University of Nigeria, Nsukka, the Curriculum Development and Instructional Materials Center (CUDIMAC) of the Institute of Education provides audio-visual services for the entire university community, neighbouring secondary schools and teachers' training colleges.

Instructional Media At Ahmadu Bello University, Zaria:

Greater attention will now be given to the development of instructional media at Ahmadu Bello University, Zaria, because the university is the main object of this study.

The development of instructional media services at Ahmadu Bello University, Zaria, was a part of the general response to increasing enrollments and shortage of trained faculty in Nigerian universities. The period between 1962 and 1979 was one of rapid increases in student enrollments in the university (Figure 2.1). Although there were some

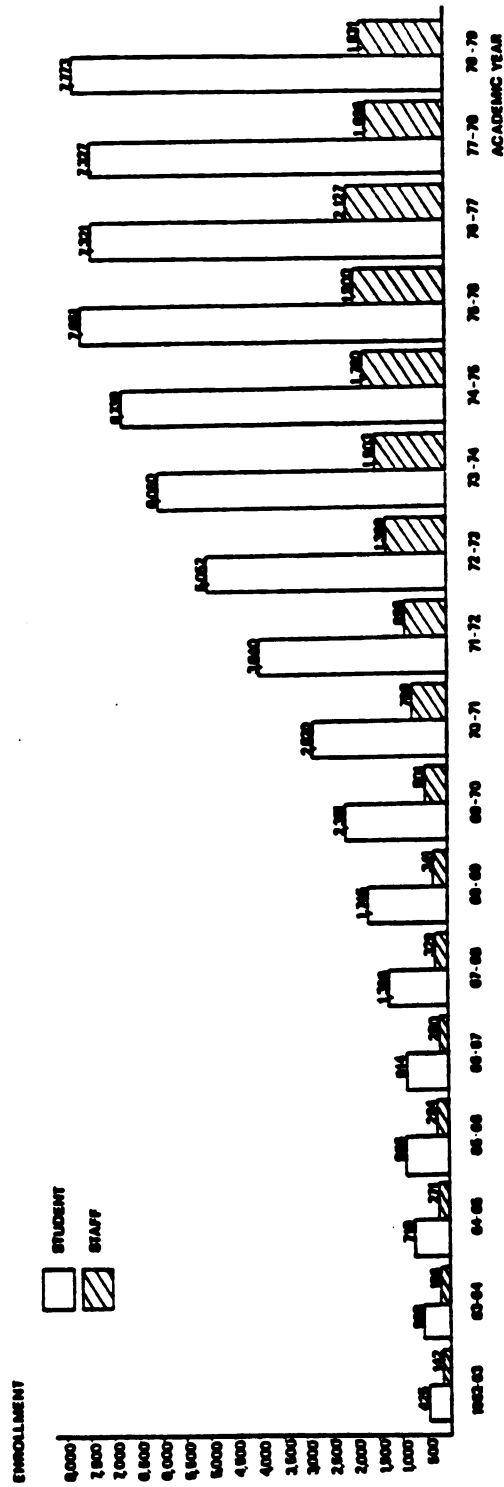


FIGURE 2-1:
TOTAL STUDENT ENROLLMENT AND STAFF STRENGTH
AT AHMADU BELLO UNIVERSITY, ZARIA

SOURCE: AHMADU BELLO UNIVERSITY, INDUSTRY DEPARTMENT DEVELOPMENT OFFICE,
8/GEN/100, 11 APRIL, 1979

staff (administrative and academic) increases, the official reports often complained of shortages of academic staff during the period. The authorities of Ahmadu Bello University, Zaria, reacted to this situation by introducing instructional media.

The first official support for instructional media in Ahmadu Bello University, Zaria, was given in 1963 when the United States Agency for International Development (USAID) and a team of experts from Indiana University helped to establish the Audio-Visual Aids Communication Unit within the Faculty of Education. The unit provided a variety of instructional media services for various academic departments on the campus.

At the time the Institute of Education was established in 1965, there were increased demands for materials such as slides, graphics and transparencies. The unit assumed new roles and was renamed Center for Educational Technology (CET).

The Center for Educational Technology has grown and now provides a variety of services to faculty members and other members of the university community. As a result of the new roles of the Center, a decision was made to allow it to operate as an autonomous unit under a Director and an Advisory Committee. A temporary building was provided for the Center.

Although the performance of the Center between 1965 and 1970 was encouraging, there was need for improvement and

further development. In 1975, at the request of the University, the British Inter-University Council for Higher Education Overseas sponsored Dr. G.D. Moss, who was then the Director of the Center for Educational Technology, University College, Cardiff, to look into the future development of Educational Technology program at Ahmadu Bello University, Zaria.

Several problems related to the adoption of instructional media in the university were identified by Dr. Moss. These problems included the lack of:

1. An overall policy regarding the functions, purchase, allocation and housing of equipment.
2. Well dispersed and well equipped teaching and lecture rooms.
3. Qualified staff.
4. Comprehensive services to meet the needs of individual departments.
5. Adequate spare parts and repair manuals for equipment.
6. Suitable vehicle for equipment delivery services.
7. Efficient internal or external communication

His report indicated that faculty members in the university would welcome the further development of the services being provided by the Center for Educational Technology. He also discovered that many faculty members did not favor the centralization of instructional media.

Finally, the report contained the following recommendations aimed at improving instructional media services in the university:

1. An assessment of the specific instructional media needs of all the academic departments.
2. Equipping the major classrooms with basic audio-visual aids.
3. The building of a permanent physical facility to house the Center for Educational Technology.
4. The provision of short technical courses for staff at both the University College, Cardiff and at Ahmadu Bello University, Zaria.
5. Adequate financial allocation to meet all purchases.
6. A decentralization of instructional media services.

In an attempt to implement some of Dr. Moss' recommendations, the Center for Educational Technology has been reorganized to provide a variety of instructional media and resource development services in the University. (Figure 2.2). As of June, 1979, considerable improvements have been made in the development of the Center for Educational Technology. First, a temporary building has been completed to accommodate the activities of the Center. The building has spaces for staff offices, a multi-media laboratory, a photographic laboratory and a conference room.

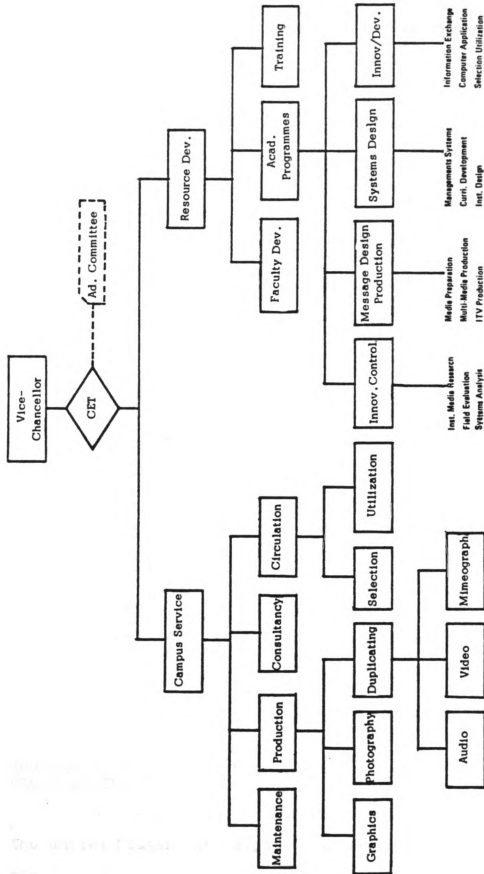


FIGURE 2.2: ORGANIZATION CHART: CENTRE FOR EDUCATIONAL TECHNOLOGY, AHMADU BELLO UNIVERSITY, ZARIA, NIGERIA.

Second, the staffing situation has improved. There were eight senior academic staff members in the Center by June, 1979.

Third, the Director of the Center is directly responsible to the Vice-Chancellor for the development and management of the Center for Educational Technology, as an autonomous unit.

Fourth, instructional media services in the university have been considerably decentralized as there are currently 19 different instructional media units located as follows:

1. Institute of Education
2. Kashim Ibrahim Library
3. Institute for Agricultural Research (IAR)
4. Division of Agriculture and Livestock Services Training (DALST)
5. Advanced Teachers' College, Zaria
6. Faculty of Human Medicine (CTV/Video Unit)
7. Center for Adult Education and Extension Services
8. Chemical Engineering Department
9. Chemistry Department
10. Institute of Administration
11. School of Basic Studies
12. School of Agriculture, Samaru-Zaria.
13. Agricultural Extension and Research Liaison Services
14. National Animal Production Research
15. College of Veterinary Medicine
16. English Language Department
17. French Department
18. Department of Community Medicine
19. Department of Physiology (Faculty of Medicine).

Resistance to Instructional Media Use in Higher Education:

The development of learning resources centers in the United States has helped to increase the use of instructional media in higher education. The major functions of

these centers have been summarized in Appendix E. After several years of initial resistance, instructional media services have increasingly gained acceptance in higher education. The sources of initial resistance to instructional media use by faculty members in higher education were many.

First, there was no agreement about the need for instructional media in higher education. This lack of agreement between administrators/planners and faculty members originated from two sources:

1. Vagueness of Educational Goals: The two groups often disagreed about the objectives and goals of higher education. This disagreement often caused questions to be raised about the general application of the new media in higher education. According to Brown and Thornton, the degree of acceptance or non-acceptance of instructional media has been highly influenced by the level of liberalism or conservatism about fundamental questions such as:

What are the purposes of college instruction?
How can new media contribute to the achievement of these purposes?
Are the new media more effective in reaching some aims and relatively useless for attaining others?²³

The difficulty in finding acceptable answers to the above basic questions was a factor in the non-acceptance of instructional media in higher education. For example, the excuse for the non-use of instructional media by many faculty members was that most of the objectives of higher education were so general and

remote in their accomplishment that it might be impossible to determine whether their accomplishment could be attributed to traditional lecture-methods or to any of the new media. Many faculty members have argued that the objectives of higher education could only be accomplished through the traditional lectures, tutorial and seminar methods.

2. Traditional concepts about instruction: The initial resistance by faculty members to the use of instructional media in higher education could be attributed to the traditional concepts of teaching. Among these were:
 - a. The tenureship system which prevented many universities from adding young faculty to their staff. Usually, such young faculty constitute an important stimulus to instructional renewal and innovations in higher education. Their absence meant the absence of possible earlier adopters of instructional media.
 - b. The academic folklore which held that "a teacher is born, not made" and that "teaching is an art, not a science" implying that little can be done to assist university professors. Therefore, the view was that instructional media was not necessary for instructional improvement.

Two other factors in the resistance to instructional media use by faculty members have been given by Gaff as academic freedom and professionalism:

Such negative injunctions are interwoven with the traditions of academic freedom, and faculty have come to feel that "a professor's classroom is his castle," that it is somehow unprofessional for a faculty member to criticize, interfere with, intrude upon, or even observe another instructor in his classroom.²⁴

Such extreme positions on academic freedom and professionalism did not only make it difficult for instructors to improve their teaching by learning from their colleagues but also made it difficult for faculty members to accept and use instructional media.

Another category of professors' resistance to instructional media was the fear of technology which took several forms. One of the leaders in the field, Edgar Dale, once probed the feelings of a college professor who rejected the new media on the excuse that instructional media threatened his academic privacy and autonomy. He noted that the classroom is one place where his dreams and ideals could hold sway. As Edgar Dale noted, the college professor felt that:

If he is making the presentation for a large group he must plan his lectures with others, follow what group consensus dictates. The applause, if any, is no longer individual. It is dispersed nebulous. And when he must expose his teaching to the view of others, he may feel that he is not quite up to it. The professor's classroom is no longer his castle.²⁵

Some of the reasons for faculty members resistance to the use of instructional media were discussed in a 1971 Ford Foundation study. One of the reasons was the fear that technology would replace the teacher. Armsey and Dahl concluded:

It is a concept that arouses emotions among both its advocates and its adversaries. Some theoreticians conceive of instructional technology as supplementary to the teacher; others, anticipating a more active role, see it as a replacement for the traditional teacher.²⁶

The findings in The Ford Foundation studies have been correlated by studies conducted by Anderson,²⁷ Berkman²⁸ and DuMolin²⁹ on instructional television. In addition to the findings of The Ford Foundation study, these studies found another cause of resistance to instructional media to be the non-involvement of teachers in the planning of educational programs. Not only were faculty members ignored in the planning, curriculum designing, and decision-making processes in higher education, they were also neglected in the training necessary for instructional media use.

This view was also expressed by the International Council for Educational Development:

We have generally neglected to train our teachers in the use of the new media and with other factors, this has resulted in resistance to the technology as a regular feature in many classrooms.³⁰

There have been several studies dealing with aspects of resistance to instructional media utilization in higher education. For example, the Committee on Utilization of College Training Resources for the Fund for the Advancement of Education³¹ in its 1959 report stated that the lack of internal motivation on the part of faculty members and administration was chiefly responsible for their failure to utilize new media in higher education.

Macomber and others³² in their study in Miami University concluded that faculty members made inadequate use of instructional media mainly because the media were not easily available when needed.

The findings of studies in the sixties showed that the technological revolution had caught most higher educational institutions unprepared. The introduction of instructional media into higher education, therefore, posed some decision-making problems.

In a study by McIntyre³³ on the use of instructional media by faculty members at the University of North Carolina. The following were found to be the constraints on instructional media use:

1. Limited financial support for purchase or rental of materials.
2. Suitable materials were not available for college use.
3. Lack of information on instructional materials.
4. Lack of technical assistance for preparing materials.
5. Lack of time to locate and preview good materials.
6. Lack of adequate facilities for showing materials.
7. Films, equipment or operators unavailable when needed.

One major barrier to instructional media utilization in higher education is the cost factor which can be viewed

from different perspectives. Media costs imposes numerous restrictions on media utilization in a variety of ways. According to Barson³⁴ these include: (1) the physical characteristics of the instructional space, (2) the availability of equipment and technician services, (3) the faculty member's time in regard to booking, production or experimentation, (4) the suitability of existing resource materials in terms of cost and time.

Diffusion of Instructional Media in Higher Education:

There are diverse opinions on methods for implementing educational innovations in higher education. This part of the literature review will cover some of the programs, policies and organizations that have helped to place instructional media in good standing in higher education in the United States.

In a consideration of factors which, when ignored, could impede instructional innovations in higher education, Michael³⁵ identified what he called the inhibitors of educational innovations to be:

1. Idealogical factors which involves lack of consensus in educational objectives and therefore resulting in ethical differences about innovation.
2. Institutional factors involving different interest groups, regulations and procedures which could be sources of resistance rather than facilitators of change.

3. Political factors which often affect educational innovations include vested interests and arguments over the allocation of time, money and personnel for instructional innovations. The political factors need not come from outside the campus, for very often, the various power bases in the academic units and the administration can prevent the introduction of anything they perceived as unfavorable instructional innovations.

These inhibitors can be minimized through the adoption of several strategies such as the:

- A. Development of physical facilities for change.
These facilities include: Instructional Materials Center, Instructional Resources Center, Instructional Services Center, Learning Resources Center and Instructional Technology Center.
- B. Development of a climate for change. This is a process of ensuring that the essential elements of educational innovations are provided. The essential elements include a formal Organization, Budgeting and Communications. According to Diamond, et al,³⁶ any successful educational innovations must have the following administrative support:
 1. A formal faculty reward system with emphasis on quality teaching and instructional

innovations. The reward system includes salary, promotion, personal recognition and fringe benefits such as travelling, grants, graduate and secretarial assistance, release time and research grants.

2. Budgeting special funds to support and facilitate educational innovation projects through:
 - a. the establishment of policies, operational systems, creating flexible time frame and a grading system compatible to the new change.
 - b. the establishment of a relatively high level unit in the administrative structure to handle instructional innovations. The head of such a unit should have direct access to the Provost or the President and other heads of academic units in the university.

According to Diamond, et al, an essential element in the creating of a climate for change in higher education is an effective Communication System which include the use of faculty newsletters, professional staff seminars, staff meetings, interim reports and memoranda through which:

The administration, the teachers, the students and the community should be kept continually informed of what is happening... People should know where the center is going, how it is getting there and what is happening on the way.³⁷

In general, the conditions for a successful diffusion of instructional media in higher education can be likened to Havelock's³⁸ Stages of Planned Change, Gaining Acceptance and Stabilizing Innovation and Generating Self-Renewal processes. Currently, the most talked about conditions for gaining success in the diffusion of instructional media in higher education include a program whose components are:

1. Faculty Development.
2. Organizational Development.
3. Instructional Development.

The belief of most change agents in higher education is that these three elements are crucial to successful instructional innovation. The mistake often made by educational innovators is to introduce a wide range of instructional materials into the campus without prior modification of existing instructional and administrative structures. Effective processes of modifying the status quo without causing major crisis include a combination of Faculty Development, Organizational Development and Instructional Development. Many experts including Gaff³⁹ and Davis⁴⁰ have evolved different models for carrying out the three processes.

One of the best examples of educational innovation programs in the United States is the Educational Development Program (EDP) at Michigan State University. The program was designed to enhance innovation in undergraduate higher education through expert consultation on teaching, learning and

the use of advanced technology. According to Davis:

As originally conceived the Educational Development Program was based on the premise that innovation in higher education requires expert consultation on the teaching and learning process, the use of advanced technology, and the availability of discretionary dollars.⁴¹

The components of the Educational Development Program at Michigan State University include:

1. Instructional Media Center
2. Learning and Evaluation Services
3. Instructional Television Services

The program has been successful because of the following basic characteristics:

1. Central authority and support
2. Action/Service Orientation
3. Faculty Consultation
4. Faculty Involvement
5. Funding
6. Philosophical and Theoretical Framework

In general, in order to minimize faculty members' resistance to instructional media in higher education, the introduction/diffusion process should be based on the following broad guidelines:

Source Credibility: The right people must sponsor the introduction of the media...

Proper Timing: Two time factors are important. First, when the media are introduced to a significant degree may determine their success or failure. Second, the amount of time provided for the introduction is important...Time must be allowed for familiarization, for accommodation, for changes in attitudes, for changes in roles and habits of teachers, and for learning how to use and learn from the newer media...

Perceived Needs: The introduction of the media must have clear relations to needs as perceived by faculty members...

Competent Specialists: Many of the newer media require the services of competent specialists. If these needed skills exist in the "in group" of the faculty, the introduction is made easier; if the specialists do not exist in the family and "outsiders" must be engaged, the introduction is made more difficult.

Budget Considerations: The costs of the newer media should be provided as supplements to regular instruction...

Service Operations: It is not only advantageous but also essential to have media equipment systems that are reliable and work well, when and where needed...⁴²

Summary:

In this chapter, a review of the literature pertinent to instructional media in higher education has been made and covered the following basic areas:

1. Rationale for instructional media in higher education.
2. History of instructional media in Nigerian universities.
3. Instructional media in Ahmadu Bello University, Zaria.
4. Resistance to instructional media in higher education.
5. Diffusion of instructional media in higher education.

The literature concentrated heavily on abundant research studies and conceptual writings conducted in the

sixties in the United States. This period in the development of instructional media in the United States had many similarities with the current situation in Nigerigan higher education.

Available literature has revealed those individual faculty member variables that constitute what can be regarded either as readiness or resistance to instructional media use in higher education.

The review covered the development of instructional media services in Nigerian universities. This development has taken place with very active support from international organizations such as the Ford Foundation, British Inter-University Council for Higher Education Overseas, Indiana University, United Kingdom Ministry of Overseas Development, UNESCO, USAID, Carnegie Corporation and the Canadian Universities Services Overseas.

Currently there is a variety of instructional media services being offered by the Center for Educational Technology and 19 other departmental media units in Ahmadu Bello University, Zaria. However, there is no available research studies on the extent of usage of these services in the university. Available literature in areas of Faculty Development and Organizational Development in higher education in the United States provided information to the acceptance or non-acceptance of instructional media by faculty members.

Literature review on planning for instructional media services in higher education provided helpful recommendations for the improvement and provision of effective media services in higher education.

FOOTNOTES FOR CHAPTER II

¹N.E. Miller, "Graphic Communication and The Crisis in Education," in Audio Visual Communication Review, Vol. 3 No. 2, December 1957, p. 117.

²James W. Brown and James W. Thornton, Jr. (eds.), New Media in Higher Education, (Washington, D.C.: Association for Higher Education and Department of Audiovisual Instruction, NEA, 1965), p.17.

³Ibid, p.19.

⁴James W. Armsey and Norman C. Dahl (eds.), An Inquiry into the Uses of Instructional Technology (New York: A Ford Foundation Report, 1973), p. ix.

⁵Commission on Instructional Technology, To Improve Learning: A Report to the President and the Congress of the United States (Washington, D.C.: United States Government Printing Office, 1970).

⁶Loran C. Twyford, Jr., "Educational Communications Media," in Encyclopedia of Educational Research, 4th Edition (Toronto, Ontario: Collier-Macmillan Canada, Ltd., 1969), p.367-380.

⁷Charles F. Hoban, et al, Instructional Film Research 1918-1950. Technical Report (New York: Special Devices Center, 1950).

⁸D.C. Knowlton and J.W. Tilton, Motion Pictures in History Teaching, (New Haven: Yale University Press, 1929).

⁹C.R. Carpenter, "A Commentary on Television Research, 1948-1960" in Newer Educational Media (University Park: Pennsylvania State University, 1961), p.104.

¹⁰Godwin C. Chu and Wilbur Schramm, Learning From Television: What The Research Says, Revised by Monty Stanford (Washington, D.C.: National Society of Professionals in Telecommunication 1967).

¹¹Ibid, p. 10

¹²Ibid, p. 11

¹³Ibid, p. 12

¹⁴Ibid, p. 5

¹⁵Robert M.W. Travers (ed), Research and Theory Related to Audiovisual Information Transmission, University of Utah, Bureau of Educational Research, Interim Report, July 1964, p. 2.49.

¹⁶Ibid, p. 6.12

¹⁷Ibid, p. 6.13.

¹⁸Ibid, p. 6.13-6.14.

¹⁹Ibid, p. 6.14.

²⁰E. Dale, Audio-Visual Methods in Teaching, Revised Edition (New York: The Dryden Press, 1954), p. 65.

²¹Sunday Owuna, The Development of Educational Technology at Ahmadu Bello University, Zaria (A Dissertation submitted in partial fulfillment of the Master of Education (M.Ed.) degree in the Department of Education, University College, University of Wales, Cardiff, 1977).

²²Jenny K. Johnson and Ibitayo Agun, "Educational Technology in Nigeria" in Selected Monographs from International Window Audiovisual Instruction 1978-79 (New Orleans: 1979 AECT Convention) p. 1.

²³James W. Brown and James W. Thornton, Jr., op. cit., p.8.

²⁴Jerry G. Gaff, Toward Faculty Renewal: Advances in Faculty, Instructional and Organizational Development (San Francisco: Jossey-Bass, Inc., Publishers, 1975), p.3.

²⁵James W. Brown and James W. Thornton, Jr., op.cit., p.14.

²⁶James W. Armsey and Norman C. Dahl, op. cit.

²⁷Robert H. Anderson, "Organizational and Administrative Changes Needed In Schools and Colleges in Order for New Techniques to Effectively Improve Instruction," in Sidney G. Tickton (ed.), To Improve Learning, Volume II, (New York and London: R.R. Bowker Company, 1971.)

²⁸Dave Berkman, "The Learning Industry and ITV," Educational Broadcasting Review, Volume V, Number 3, June 1971.

²⁹James R. DuMolin, "Instructional Television Utilization in the United States," Memorandum No. 71-6, St. Louis, Washington University, October, 1971.

³⁰"Instructional Broadcasting: A Design for the Future," A paper prepared for the Corporation for Public Broadcasting by the International Council for Educational Development, January, 1971.

³¹Fund for the Advancement of Education, Committee on Utilization of College Teaching Resources, Better Utilization of College Teaching Resources (New York, 1959).

³²F.G. Macomber, et al., Experimental Study in Instructional Procedures, Report No. 2 (Oxford, Ohio: Miami University, 1957).

³³Kenneth M. McIntyre, A Study to Determine Specific Sources of Resistance to the Use of Audiovisual Materials by College and University Teachers and the Development of Procedures for Overcoming the Barriers to Optimum Use (Chapel Hill: University of North Carolina, 1963).

³⁴John Barson, A Procedural and Cost Analysis Study of Media in Instructional Systems Development, Parts A and B., U.S. Department of Health, Education and Welfare Report, 1965.

³⁵Donald Michael, "Inhibitors and Facilitors to the Acceptance of Educational Innovations" in Inventing Education for the Future (ed.) Warner Z. Hirsh (San Francisco: Chandler Publishing Co., 1967) Chapter 14.

³⁶Robert M. Diamond, et al, "Developing a Climate for Change," in Instructional Development for Individualized Learning in Higher Education (Englewood Cliffs, N.J.: Educational Technology Publications, Inc., 1975).

³⁷Ibid, p.25.

³⁸Ronald G. Havelock, The Change Agent's Guide to Innovation in Education (Englewood Cliffs, N.J.: Educational Technology Publications, Inc., 1973), p. 39-140.

³⁹Jerry G. Gaff, Toward Faculty Renewal, (San Francisco: Jossey-Bass, Inc., Publishers, 1975).

⁴⁰Robert H. Davis, "A Behavioral Change Model With Implications for Faculty Development," The International Journal of Higher Education and Education Planning, Vol. 8, Number 2, March 1979 (Amsterdam: Elsevier Scientific Publishing Company).

⁴¹Robert H. Davis, et al. Commitment to Excellence: A Case Study of Educational Innovation (East Lansing, Educational Development Program, Michigan State University, 1976), p.14.

⁴²C.R. Carpenter and L.P. Greenhill, "Providing the Conditions for Learning: The New Media," in Higher Education (ed.) Samuel Baskin (New York: McGraw-Hill, 1965), p.146-148.

CHAPTER III

PROCEDURES AND METHODOLOGY

Introduction:

The primary purpose of this study was to determine the individual and institutional factors which influence the use of instructional media by faculty members at Ahmadu Bello University, Zaria. To achieve this, the following four basic objectives were set:

1. To determine the extent to which faculty members utilize instructional media in Ahmadu Bello University, Zaria.
2. To determine the extent to which individual faculty members' perceptions, their job status, previous skills in the use of instructional media and the sources of information about instructional media influence their use of instructional media in the university.
3. To identify the ways in which institutional factors such as budgetary provisions, personnel reward mechanism and administrative policies influence the extent to which faculty members use instructional media in the university.

Hypotheses:

The following null hypotheses were tested:

1. There will be no significant relationship between the frequency of instructional media use and faculty members' grade levels.
2. There will be no significant relationship between the perceived constraints and the frequency of instructional media use by faculty members.
3. There will be no significant relationship between the frequency of use and faculty members' perceptions about instructional media.
4. There will be no significant relationship between faculty members' perceptions about the university's support and the frequency of instructional media use.
5. There will be no significant relationship between faculty members' frequency of use and the levels of training and skills in instructional media.
6. There will be no significant relationship between the frequency of use and the amount of information which faculty members receive about instructional media.

The Population:

The population for this study comprised faculty members who were actively engaged in teaching in the following academic faculties in the Samaru main campus of Ahmadu Bello University, Zaria:

1. Agriculture
2. Arts and Social Sciences
3. Education
4. Engineering
5. Environmental Design
6. Human Medicine
7. Pharmaceutical Sciences
8. Science
9. Veterinary Medicine

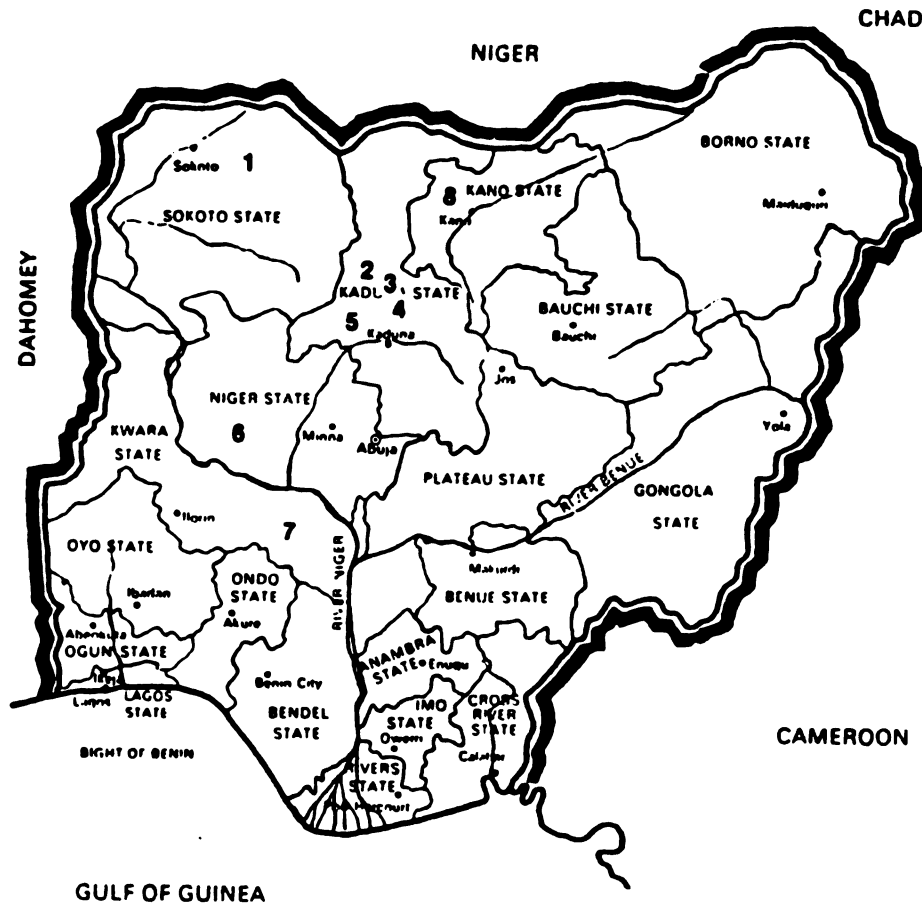
The limitation of the population to only the teaching staff in the Samaru main campus of the university was necessitated by two factors:

1. Ahmadu Bello University, Zaria, operates in many campuses (Figure 3.1)
2. Not all the faculty members, even in Samaru main campus, are engaged principally in teaching (Appendix F).

The Sample:

In Chapter I, it was explained that in Nigerian universities, faculty members are officially classified into the following grades in descending order of seniority (Appendix D):

MAP OF NIGERIA SHOWING THE LOCATIONS OF SOME OF THE CAMPUSES OF AHMADU BELLO UNIVERSITY, ZARIA



KEY

1. College of Agriculture, Bakura
2. National Animal Production Research Institute, Shika
3. Samaru Main Campus
4. Institute of Administration and Advanced Teachers' College, Zaria
5. College of Agriculture and Animal Sciences, Mando-Kaduna
6. Institute of Agricultural Research (Substation), Mokwa
7. College of Agriculture, Kabba
8. Institute of Agricultural Research (Substation) and Advanced Teachers' College, Kano

1. Professors
2. Readers (Associate Professors)
3. Senior Lecturers
4. Lecturers
5. Assistant Lecturers

The sample comprised 370 faculty members who were randomly selected from nine academic faculties (Appendix L).

The Selection of the Sample:

The sample was drawn up in the following proportion (Table 3-1) from the target population.

Table 3-1: Sampling of Faculty Members

Faculty Member Grade	Strata Population (N)	Sample Size (45% x N = n)
Professors (n_1)	52	23
Readers (n_2)	41	18
Senior Lecturers (n_3)	234	105
Lecturers (n_4)	398	179
Assistant Lecturers (n_5)	100	45
Total	N = 825	n = 370

A further analysis of the sampling design in Table 3-1 has resulted in the distribution shown in Table 3-2.

For each academic faculty, a list of faculty members and the component departments were extracted from the Ahmadu Bello University 1978/79 Staff Directory/Calendar. From the

Table 3-2: Distribution of Sample Among Academic Faculties

Academic Faculties	Pro- fessors	Readers	Senior Lecturers	Lecturers	Assistant Lecturers	Total
Agri- culture	2	3	10	18	8	41
Arts and Social Sciences	2	2	13	20	8	45
Education	2	2	12	26	7	49
Engineering	3	2	15	17	5	42
Environ- mental Design	2	1	6	16	3	28
Human Medicine	3	2	14	21	4	44
Pharma- ceutical Sciences	2	2	8	12	3	27
Science	4	2	15	31	4	56
Veterinary Medicine	3	2	12	18	3	38
Total	23	18	105	179	45	370

lists, random samples were drawn from each academic Faculty (Table 3-2). Efforts were made to ensure that there were adequate representatives from all the Departments in each academic Faculty sample. For example, the 56 faculty members from the Faculty of Science were selected from the Departments of Bio-chemistry, Biological Sciences, Chemistry, Geology, Mathematics, Microbiology, Physics and Computer Sciences.

Source of Data

The data used in this study was collected in a field survey conducted by the researcher during the months of June, July and August, 1979 in Ahmadu Bello University, Zaria. The data was collected through the administration of questionnaire (Appendix G).

Instrumentation:

The study was descriptive in nature. Therefore, the instrument used was a Questionnaire designed to determine the extent to which instructional media were being utilized by faculty members in Ahmadu Bello University, Zaria. The instrument was also designed to determine the major factors influencing the utilization of instructional media in the university.

The instrument was organized into seven sections (A-G) and contained closed-ended questions requiring scaled responses.

Section A of the Questionnaire was designed to collect personal data of each of the respondents. Respondent's names were not required but details such as Nationality, Sex, Academic and Administrative positions were requested.

Section B consisted of questions designed to determine the frequency of instructional media use in the university. The frequency of use of each of the instructional media items such as slides, radio, filmstrips and videotapes was scaled 0, 1-3, 4-6, 7-9 and above 10 times in a 10-week academic term.

Section C contained five negative and five positive perception statements which faculty members generally have about instructional media. The respondents were asked to indicate the degree to which they agreed or disagreed with each of the statements.

Section D was designed to determine the types of training and levels of skills which faculty members previously had in instructional media. The skills included operation of instructional media equipment and the production, selection, management and evaluation of instructional materials. The levels at which the skills were acquired included undergraduate degree and courses, graduate degree and courses, workshops, seminars and inservice training.

Section E was designed to determine which of the eight listed support services, faculty members felt the university was providing to encourage the use of instructional media. The respondents were asked to indicate on a five-point scale the frequency of such support.

Section F contained a list of ten constraints that often affect faculty members' use of instructional media. The faculty members were asked to indicate on a five-point scale, the degree to which they perceived the constraints.

Section G was designed to determine the number of sources from which faculty members usually obtain information about instructional media. The respondents were also asked to indicate the frequency of such information.

The Questionnaire was prepared with the advice of a consultant in the Office of Research Consultation (ORC), College of Education at Michigan State University. It was later approved by the dissertation guidance committee.

Pilot Test

The Questionnaire as a data collecting instrument was tested for reliability and validity in June 1979 in a pilot test conducted on 30 randomly selected faculty members at Ahmadu Bello University, Zaria.

In order to ascertain the clarity of the question-items in each section of the Questionnaire, the respondents were asked to rate each of the questions as "Very Clear" or "Not Clear".

Most of the 30 participants rated most of the questions as "Very Clear". The few questions that were rated as "Not Clear" were revised until they were accepted and rated as "Very Clear" by the respondents.

The pilot test revealed that it took on the average about 20 minutes to complete one questionnaire.

Collection of Data

Prior to visiting Nigeria, letters (Appendices H and I) soliciting the co-operation of both the Director and the Coordinator of Campus Services, Center for Educational Technology (CET) at Ahmadu Bello University, Zaria were sent.

The researcher's first day at Ahmadu Bello University, Zaria, was spent meeting the Director and the Coordinator of Campus Services, Center for Educational Technology. They assisted the researcher in mapping out strategies for distributing and collecting the questionnaires from the various academic faculties. The two officers also made available to the researcher, several documents related to the development of instructional media programs in Ahmadu Bello University, Zaria.

Administration of Questionnaire

Each copy of the Questionnaire was accompanied by two letters. The contents of the first letter (Appendix J) included statements of objectives of the study, a definition of instructional media as used in the study and an appeal for independent and objective completion of the Questionnaire. The second (Appendix K) was a letter introducing and recommending the researcher to the university community.

Copies of the lists of the randomly sampled faculty members from each of the academic Departments and Faculties (Appendix L) were made by the researcher. The lists were accompanied by the appropriate number of questionnaires and then given to the Departmental Secretaries. There was the need to make the individual faculty member's responses as

objective and independent as possible. In order to avoid any possible influence by other faculty members, the Questionnaires were given to the Departmental Secretaries who dropped the Questionnaires in the mail boxes of the faculty members whose names were in the list given to them. However, names were not written on the Questionnaires so as to achieve the desired anonymity of responses.

Each questionnaire that was distributed was accompanied by instructions on how, when and where to return the completed form. In each case, the Departmental Secretaries served as collectors.

The researcher in turn collected the return Questionnaires from the Departmental Secretaries daily after each given deadline for the return of the completed questionnaires. In some cases, the secretaries sent one or two reminders to faculty members who did not meet the set deadline. The practice whereby the researcher collected the completed forms from the Secretaries on a day-to-day basis, contributed to the relatively high response rate.

Percentage of Responses

Of the 370 Questionnaires distributed, 282 were completed and returned to the researcher. Out of the Questionnaires returned, nine were incomplete. Only the 273 fully completed questionnaires were used in the analysis of the data.

The 273 completed questionnaires represented 73.8 percent of the total Questionnaires sent out. The details of the distribution of the returned Questionnaires (responses) have been presented in Tables 3-3 through 3-13.

Table 3-3: Distribution of Responses by Sex

Faculty Member Grade	<u>Sex of Respondents</u>		
	Males	Females	Total
Professors	11	3	14
Readers	10	4	14
Senior Lecturers	69	5	74
Lecturers	118	21	139
Assistant Lecturers	23	9	32
Total	231	42	273
%	84.6	15.4	100

The response rates shown in Table 3-5 through 3-13 were generally high for the Faculty of Education (87.8 percent), Engineering (73.8 percent), Medicine (70.5 percent), Pharmaceutical Sciences (74.1 percent), Science (87.5 percent) and Veterinary Medicine (92.1 percent).

One of the causes of the high response rates from these academic faculties was the co-operation and the enthusiasm shown by the Departmental Secretaries. The other was the interest shown in the study by the faculty members

Table 3-4: Distribution of Responses by Nationality

Faculty Member Grade	Nationality of Respondents	
	Nigerians	Non-Nigerians
Professors	8	6
Readers	9	5
Senior Lecturers	58	16
Lecturers	107	32
Assistant Lecturers	32	0
Total	214	59
%	78.4	21.6
		100.0

Table 3-5: Responses from Faculty of Agriculture

Faculty Member Grade	Number of Questionnaires	
	Distributed	Returned
Professors	2	1
Readers	3	2
Senior Lecturers	10	5
Lecturers	18	12
Assistant Lecturers	8	5
Total	41	25
		50.0
		66.6
		50.0
		66.6
		62.5
		60.9

Table 3-6: Responses from Faculty of Arts and Social Sciences

Faculty Member Grade	Number of Questionnaires	
	Distributed	Returned
Professors	2	1
Readers	2	1
Senior Lecturers	13	7
Lecturers	20	8
Assistant Lecturers	8	5
Total	45	22
		50.0
		50.0
		53.8
		40.0
		62.5
		48.8

Table 3-7: Responses from Faculty of Education

Faculty Member Grade	Number of Questionnaires	
	Distributed	Returned
Professors	2	1
Readers	2	2
Senior Lecturers	12	10
Lecturers	26	24
Assistant Lecturers	7	7
Total	49	43
		87.8
		50.0
		100.0
		83.3
		92.3
		100.0

Table 3-8: Response from Faculty of Engineering

Faculty Member Grade	Number of Questionnaires	
	Distributed	Returned
Professors	3	2
Readers	2	1
Senior Lecturers	15	10
Lecturers	17	14
Assistant Lecturers	5	4
Total	42	31
		73.8
		66.7
		50.0
		66.7
		82.4
		80.0

Table 3-9: Responses from Faculty of Environmental Design

Faculty Member Grade	Number of Questionnaires	
	Distributed	Returned
Professors	2	1
Readers	1	0
Senior Lecturers	6	3
Lecturers	16	11
Assistant Lecturers	3	2
Total	28	17
		60.7
		50.0
		0.0
		50.0
		68.8
		66.7

Table 3-10: Responses from Faculty of Human Medicine

Faculty Member Grade	<u>Number of Questionnaires</u>		Response Rate (%)
	Distributed	Returned	
Professors	3	2	66.7
Readers	2	2	100.0
Senior Lecturers	14	10	71.4
Lecturers	21	15	71.4
Assistant Lecturers	4	2	50.0
Total	40	31	70.5

Table 3-11: Response from Faculty of Pharmaceutical Sciences

Faculty Member Grade	<u>Number of Questionnaires</u>		Response Rate (%)
	Distributed	Returned	
Professors	2	1	50.0
Readers	2	1	50.0
Senior Lecturers	8	6	75.0
Lecturers	12	10	83.3
Assistant Lecturers	3	2	66.7
Total	27	20	74.1

Table 3-12: Responses from Faculty of Science

Faculty Member Grade	<u>Number of Questionnaires</u>		Response Rate (%)
	Distributed	Returned	
Professors	4	3	75.0
Readers	2	2	100.0
Senior Lecturers	15	13	86.7
Lecturers	31	27	87.1
Assistant Lecturers	4	4	100.0
Total	56	49	87.5

Table 3-13: Responses from Faculty of Veterinary Medicine

Faculty Member Grade	<u>Number of Questionnaires</u>		
	Distributed	Returned	Response Rate (%)
Professors	3	2	66.7
Readers	2	2	100.0
Senior Lecturers	12	10	83.3
Lecturers	18	18	100.0
Assistant Lecturers	3	3	100.0
Total	38	35	92.1

in these academic units. It was evident from the interaction which the researcher had with some of the faculty members that there was a desire among many of them for effective instructional media services in the university. The high response rates in the Faculties of Pharmaceutical Sciences and Veterinary Medicine and Human Medicine correlated with the views of most of the faculty members in the university. The view is that those were the academic faculties where instructional media appeared to have been accepted.

On the other hand, the response rates were relatively low for the Faculty of Arts and Social Sciences (48.8 percent), Environmental Design (60.7 percent) and Agriculture (60.9 percent).

Excuses were given for the low responses from the Faculty of Agriculture and the Faculty of Environmental Design. The departmental secretaries in these academic units were apparently enthusiastic in helping the researcher to administer the Questionnaires but most of the faculty members did not complete the Questionnaires given to them despite several reminders.

Two excuses were given for the low responses in the Faculty of Arts and Social Sciences. First, some of the Departmental Secretaries said that they had no time to administer the Questionnaires because of heavy work load.

Second, some of the faculty members refused to collect the Questionnaires deposited in their mail boxes. Those who collected the questionnaires did not return them to the Departmental Secretaries despite some reminders. These faculty members said that they were unable to complete the Questionnaires at that time because they were pre-occupied with the grading of final examinations.

Data Analysis

During the development of the Questionnaire, care was taken to categorize various related items in the same section.

The data collected in Nigeria by the researcher were hand coded and analyzed via the Statistical Package for the Social Sciences (SPSS) at the Michigan State University Computer Center.

The responses to the items in each section of the Questionnaire were compiled and analyzed to test the corresponding hypotheses. Since the study was descriptive in nature, contingency tables showing percentages and frequencies were used.

Cross-tabulations (Chi-Square) were developed to show the relationships between the instructional media use and the other variables.

The hypotheses were tested at the .05 level of significance.

Summary:

The procedures and methodology used in this study have been designed to determine the individual and institutional factors which influence the use of instructional media by faculty members at Ahmadu Bello University, Zaria.

To this end, six null hypotheses were generated. The hypotheses dealt with instructional media use as a function of faculty member grade levels, perceptions, previous skills, university support, perceived constraints and sources of information.

The population for this study comprised faculty members currently engaged in teaching in nine academic faculties. The sample that was studied comprised 273 faculty members from the Samaru main campus of the university. The sample was drawn from the five faculty member grades.

The instrument used in this study was an eight-page questionnaire organized into seven sections. The instrument

contained mostly closed-ended questions which required one of the five-point scaled responses.

Prior to the collection of data, a pilot test was conducted to ensure the reliability and validity of the instrument.

The researcher personally collected the data for this study during the months of June, July and August 1979 at Ahmadu Bello University, Zaria in Nigeria.

Out of the 370 Questionnaires administered, 273 were fully completed and used in the final analysis. That represented a response rate of 73.8 percent.

The data collected in Nigeria by the researcher were hand coded and analyzed via the Statistical Package for the Social Sciences (SPSS) at the Michigan State University Computer Center. The hypotheses were tested at the .05 level of significance.

CHAPTER IV

ANALYSIS OF RESULTS

INTRODUCTION:

This chapter contains the analysis of the data obtained for this study whose primary purpose was to determine the individual and institutional factors which influence faculty members in the use of instructional media. The basic objectives were:

1. To determine the extent to which faculty members utilize instructional media in Ahmadu Bello University, Zaria.
2. To determine the extent to which individual faculty members' perception about instructional media, their job status, previous skills in the use of instructional media and the sources of information about available instructional media, influence their use of instructional media in the university.
3. To identify the ways in which institutional factors such as budgetary provisions, personnel reward mechanism and university organizational policies, influence the extent to which faculty members use instructional media in the university.

Descriptive statistics were used to describe the frequency of responses to the various variables covered in the questionnaires. Contingency tables were used to determine if there were relationships between the variables. The hypotheses were tested at $\alpha = .05$ level.

Findings of the Study:

Findings from the study have been presented in form of answers to questions and results of the tested hypotheses.

Research Question 1:

To what extent are the instructional media in Ahmadu Bello University, Zaria, being used by faculty members?

Answers to Research Question 1:

In Chapter Two reference was made to the availability of several items of instructional media in the university. The extent of usage of instructional media by faculty members have been presented in Figure 4.1. The extent of usage has been defined as a combination of frequency of use and the number of faculty members using each item of instructional media in a 10-week academic term.

The most frequently used instructional media in a 10-week academic term were slides (5.5 percent) followed by overhead transparencies (2.9 percent) and audio tapes (1.5 percent). The most frequent usage here is represented by a combined frequency of "above 10" and "7-9" times (Figure 4.1).

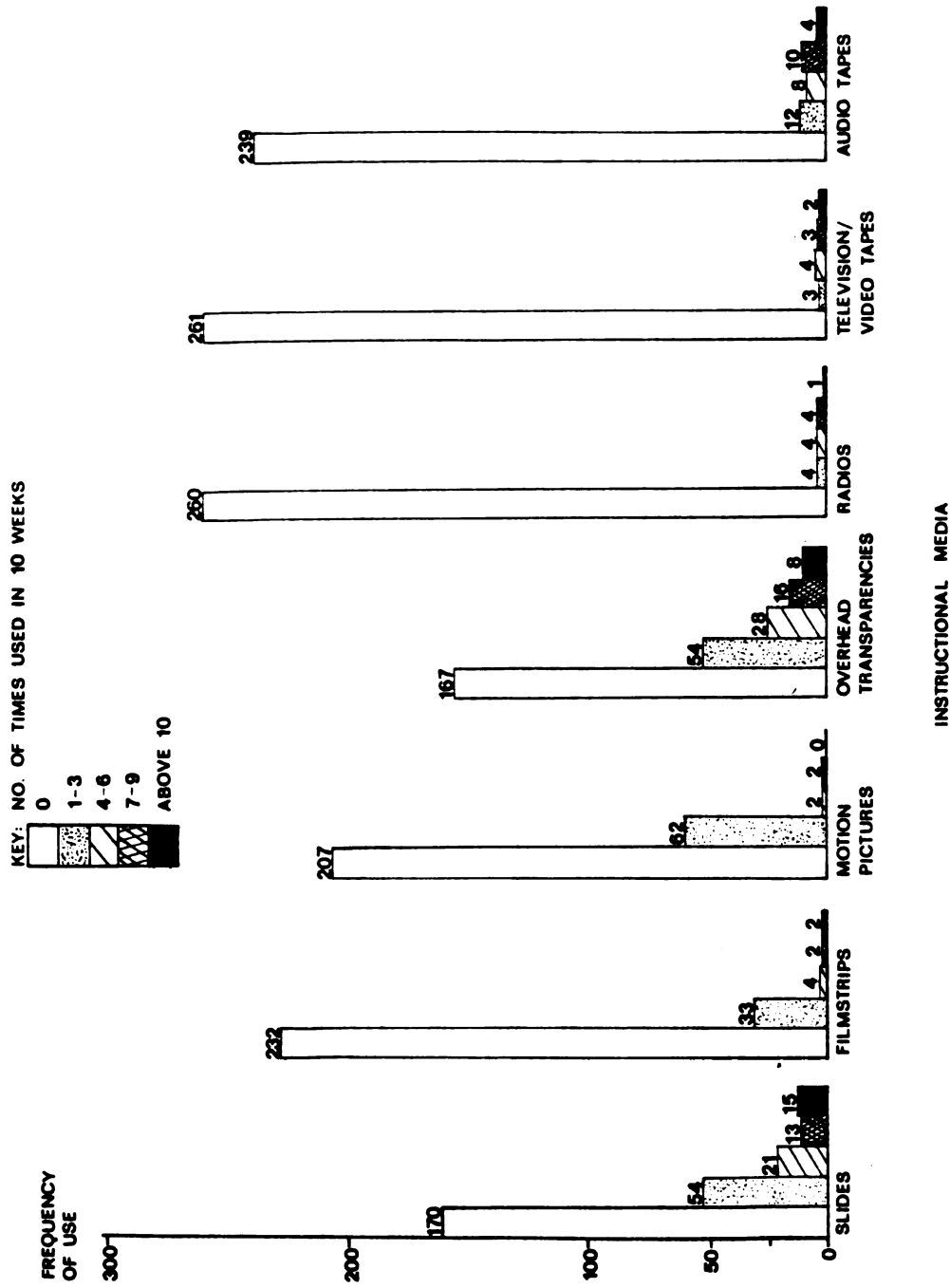


FIGURE 4-1 NUMBER OF FACULTY MEMBERS USING INSTRUCTIONAL MEDIA

It has been shown in Figure 4.1 that on the average 61.2 percent of faculty members did not use each of the instructional media items in a ten-week academic term. This conclusion is supported by the frequencies of usage of each of the items which concentrated heavily on zero times. The low usage was further dramatized by a mean of 1.4 out of 5 points when the mean of means was calculated for all the instructional media items.

Therefore, the responses to the Research Question 1 justified the conclusion that there had been very low usage of instructional media.

Research Question 2:

Which grades of faculty members in Ahmadu Bello University, Zaria, make the most use of instructional media?

Answers to Research Question 2:

Five grades of faculty members were involved in this study: Professors, Readers (Associate Professors), Senior Lecturers, Lecturers and Assistant Lecturers. Figure 4.2 shows the number of faculty members in each grade level who used each of the instructional media items.

Figure 4.2 through 4.6 show that Lecturers made the most frequent use of instructional media. This was followed by Senior Lecturers, Professors, Assistant Lecturers and Readers (Associate Professors) in that order.

The question of which grade of faculty members was making the most frequent use of instructional media was further tested statistically in Hypotheses 1.

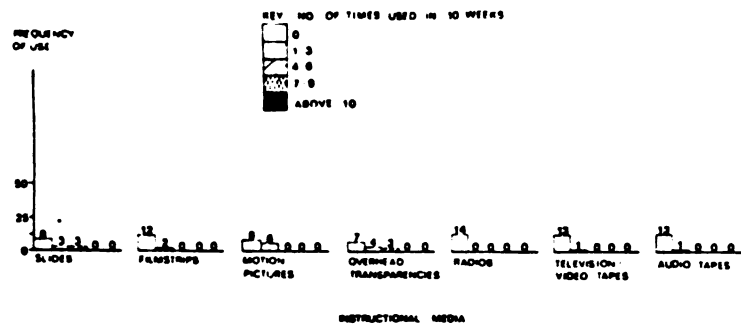


FIGURE 4-2 NUMBER OF PROFESSORS USING INSTRUCTIONAL MEDIA

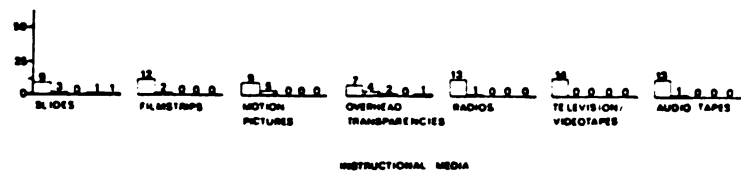


FIGURE 4-3 NUMBER OF ASSOCIATE PROFESSORS USING INSTRUCTIONAL MEDIA

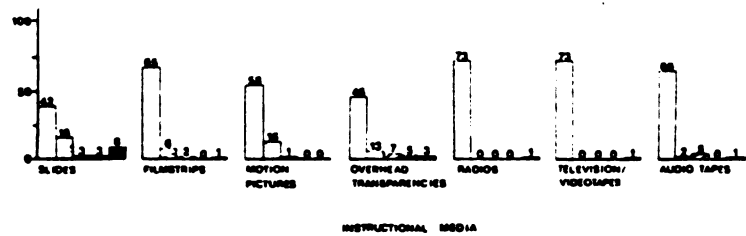


FIGURE 4-4 NUMBER OF SENIOR LECTURERS USING INSTRUCTIONAL MEDIA

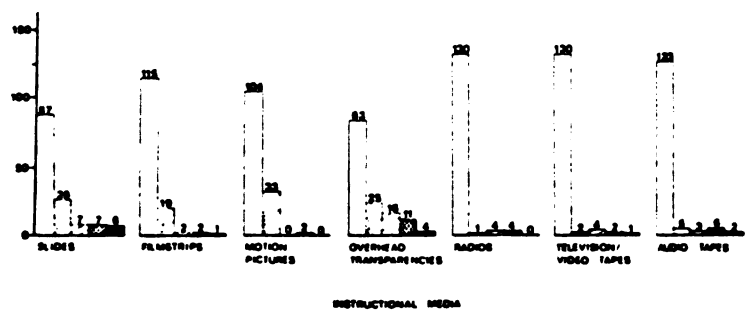


FIGURE 4-5 NUMBER OF LECTURERS USING INSTRUCTIONAL MEDIA



FIGURE 4-6 NUMBER OF ASSISTANT LECTURERS USING INSTRUCTIONAL MEDIA

Hypothesis 1

Null Hypothesis (H_0):

There will be no significant relationship between the frequency of instructional media use and faculty members' grade levels.

In testing this hypothesis, five grades of faculty members were considered: Professors, Readers, Senior Lecturers, Lecturers and Assistant Lecturers. There were five levels of frequencies of use of each of the instructional media items: slides, filmstrips, motion pictures, overhead transparencies, radios, television and videotapes, and audiotapes. The five levels of usage were weighted on a five-point scale as follows: Zero times (1 point), 1-3 times (2 points), 4-6 times (3 points), 7-9 times (4 points) and above 10 times (5 points) for the purposes of computation.

Analysis of Results

Contingency (cross-tabulations) analysis were made and the results were used to test the null hypothesis.

In testing the null hypothesis, the researcher decided to test the level of significance of the frequency of instructional media use of only slides and overhead transparencies because these were the two most frequently used items. The validity of testing for significance for the other items with very low usage could be questionable because low usage was already an indication of negative relationship between those variables.

The test results shown in Table 4.1 indicate that the calculated significance level is .3715 at 16 degrees of freedom for slides. Therefore, the Null hypothesis is accepted because it is greater than the .05 level of significance.

Similarly, the results in Table 4.2 show that the calculated significance level is .4408 at 16 degrees of freedom for overhead transparencies. Therefore, the Null hypothesis is accepted because it is greater than the .05 level of significance.

Although Figures 4.2 through 4.6 show that Lecturers made the most frequent use of instructional media than all other faculty members, it can be still inferred that the frequency of instructional media use was not related to faculty members' grade levels. This conclusion is based on the data in Table 4.1 and 4.2 which show that the Null Hypothesis 1 is accepted.

Research Question 3 (a):

What are the constraints on the use of instructional media by faculty members in Ahmadu Bello University, Zaria.

Answers to Research Question 3 (a):

The results summarized in Table 4.3 show the details of the identified constraints on instructional media use. The constraints included: non-availability of required instructional media, heavy teaching loads, lack of time to preview materials, lack of information about available instructional media and irregular electrical power supply.

TABLE 4.1: CROSS-TABULATIONS OF FREQUENCIES OF USE OF SLIDES BY FACULTY MEMBER GRADES.

Number of Times Slides Are Used in 10 Weeks.		FACULTY MEMBER GRADES					Row Total
		Professors	Readers	Senior Lecturers	Lecturers	Assistant Lecturers	
0	F	8	9	42	87	24	170
	%	2.9	3.3	15.4	31.9	8.8	62.3
1-3	F	3	3	18	26	4	54
	%	1.1	1.1	6.6	9.5	1.5	19.8
4-6	F	3	0	3	13	2	21
	%	1.1	0	1.1	4.8	0.7	7.7
7-9	F	0	1	3	7	2	13
	%	0	0.4	1.1	2.6	0.7	4.8
Above 10	F	0	1	8	6	0	15
	%	0	0.4	2.9	2.2	0	5.5
Column Total	F	14	14	74	139	32	273
	%	5.1	5.1	27.1	50.9	11.7	100.0

N = 273
 Chi-Square = 17.2192
 Degrees of Freedom = 16
 Significance Level = .3715

F = Frequency (Number of Faculty
 Members)

TABLE 4.2: CROSS-TABULATIONS OF FREQUENCIES OF USE OF OVERHEAD TRANSPARENCIES BY FACULTY MEMBER GRADES.

Number of Times Used in 12 Weeks		FACULTY MEMBER GRADES					Total
		Professors	Readers	Senior Lecturers	Lecturers	Assistant Lecturers	
0	F	7	7	46	83	24	167
	%	2.6	2.6	16.8	30.4	8.8	61.2
1-3	F	4	4	13	25	8	54
	%	1.5	1.5	4.8	9.2	2.9	19.3
4-6	F	3	2	7	16	0	28
	%	1.1	0.7	2.6	5.9	0	10.3
7-9	F	0	0	5	11	0	16
	%	0	0	1.8	4.8	0	5.9
Above 10	F	0	1	3	4	0	8
	%	0	0.4	1.1	1.5	0	2.9
Column Total	F	14	14	74	139	32	273
	%	5.1	5.1	27.1	50.9	11.7	100.0

N = 273
 Chi-Square = 16.1758
 Degrees of Freedom = 16
 Significance Level = .4408

In addition to identifying the constraints, the respondents also rated each constraint either as major, moderate or minor. What was a major, moderate or minor constraint was left to the discretion of individual faculty members responding to the question. It was assumed that the degree to which each constraint was rated could influence the frequency of instructional media use. Table 4.3 contains a summary of the frequencies and percentage ratings of the ten constraints on instructional media use. Out of the ten constraints, six were rated as major by the faculty members.

The relationship between the perceived constraints and instructional media use was tested statistically in Hypothesis 2.

Hypothesis 2

Null Hypothesis (H_0):

There will be no significant relationship between the perceived constraints and the frequency of instructional media use by faculty members.

In testing this hypothesis, the ten constraints were considered against the frequencies of instructional media use.

Analysis of Results:

Crosstabulations were made and the results were used to test the Null Hypothesis.

Results displayed in Table 4.4 indicate that the Null hypothesis is accepted 5 out of 10 times (50.0 percent).

TABLE 4.3: NUMBER AND PERCENTAGE OF FACULTY MEMBERS RATING CONSTRAINTS ON INSTRUCTIONAL MEDIA USE.

No.	Perceived Constraints	Number of Faculty Members	Percentage	Perceived Degree of Constraints
1.	Irregular electrical power supply	167	61.2	Major
2.	Instructional media are not often available when needed	161	59.0	Major
3.	Lack of information about instructional media	128	46.9	Major
4.	Lack of instructional media in my subject area	102	37.4	Major
5.	Teaching load does not allow enough time to plan for instructional media use	96	35.2	Major
6.	Too much red-tape involved in obtaining instructional materials or equipment	90	33.0	Moderate
7.	Lack of departmental support for instructional media use.	88	32.2	Moderate
8.	It takes too much time to select and preview instructional media	87	31.9	Minor
9.	Lack of technical assistance when using instructional media	86	31.5	Moderate
10.	Lack of training in instructional media	78	28.6	Major

Therefore, it is difficult to accept the Null Hypothesis absolutely in respect of slides.

In Table 4.5, the results indicate that the Null hypothesis is rejected 6 out of 10 times (60.0 percent). Therefore, the Null hypothesis is rejected in respect of overhead transparencies.

However, the average results of testing the hypothesis for both slides and overhead transparencies show that Null Hypothesis 2 is rejected 11 out of 20 times (55.0 percent). In conclusion, the Null hypothesis is rejected.

Research Question 3 (b):

What individual factors hinder or facilitate the use of instructional media by faculty members?

Answers to Research Question 3 (b):

It has been assumed that several individual factors could limit individual faculty members' use of instructional media. Three categories of such individual factors were considered.

Table 4.6 contains results of responses by faculty members to positive perception statements about instructional media. The positive perceptions belonged to the category of factors which could facilitate individual faculty members' use of instructional media.

The data show that on the average, 47.3 percent of the respondents agreed with all the five positive perceptions.

TABLE 4.4: SUMMARY OF CROSSTABULATIONS OF FREQUENCIES OF USE OF SLIDES BY FACULTY MEMBERS' CONSTRAINTS

STATISTICAL RESULTS					Remarks	
No.	Constraints	N	Chi-Square	Degree of Freedom	Significance Level	Full Hypothesis
1.	Lack of regular electricity power supply.	273	46.0016	16	.0001	Rejected
2.	Instructional media are not often available when needed.	273	24.0776	16	.0887	Accepted
3.	Lack of information about available instructional media.	273	44.5596	16	.0002	Rejected
4.	Lack of instructional media in my subject area.	273	22.1104	16	.1394	Accepted
5.	Teaching load does not allow enough time to plan to use instructional media.	273	20.8970	16	.1825	Accepted
6.	Too much red tape involved in obtaining instructional materials or equipment.	273	29.0111	16	.0239	Rejected
7.	Lack of departmental support to the use of instructional media.	273	45.2921	16	.0001	Rejected
8.	It takes too much time to select and preview instructional media.	273	35.1165	16	.0038	Rejected
9.	Lack of technical assistance when using instructional media.	273	21.5189	16	.1594	Accepted
10.	Lack of training in the use of instructional media.	273	19.6704	16	.2351	Accepted

TABLE 4.5: SUMMARY OF CROSSTABULATIONS OF FREQUENCIES OF USE OF OVERHEAD TRANSPARENCIES BY FACULTY MEMBERS' CONSTRAINTS

No.	Constraints	N	STATISTICAL RESULTS			Remarks
			Chi-Square	Degree of Freedom	Significance Level	
1.	Lack of regular electricity power supply	273	15.3811	16	.4969	Accepted
2.	Instructional media are not often available when needed	273	71.5689	16	.0000	Rejected
3.	Lack of information about available instructional media.	273	27.2881	16	.0384	Rejected
4.	Lack of instructional media in my subject area.	273	25.5265	16	.0611	Accepted
5.	Teaching load does not allow enough time to plan to use instructional media.	273	37.8179	16	.0016	Rejected
6.	Too much red-tape involved in obtaining instructional materials or equipment	273	44.2346	16	.0002	Rejected
7.	Lack of departmental support to the use of instructional media.	273	23.1726	16	.1092	Accepted
8.	It takes too much time to select and preview instructional media.	273	40.5361	16	.0006	Rejected
9.	Lack of technical assistance when using instructional media	273	32.9321	16	.0075	Rejected
10.	Lack of training in the use of instructional media.	273	12.5497	16	.7034	Accepted

The high number of faculty members who strongly agreed with the positive perceptions could be attributed to the directionality of the Questionnaire statements.

Table 4.7 contains the results of the responses to negative perception statements. These negative perceptions belonged to the category of factors which could hinder individual faculty members' use of instructional media. The data show that on the average, 47.3 percent of the respondents disagreed with all the five negative perceptions. Again, as was the case with the positive perceptions, the high number of faculty members who disagreed with most of the negative perceptions could be attributed to the directionality of the Questionnaire statements.

Table 4.8 contains the result of the responses to the question dealing with training and skills in instructional media use. Training and skills in the use of instructional media belonged to a category of factors which could facilitate individual faculty members' use of instructional media.

The data indicated that on the average, 81.4 percent of the respondents had no training and skills in the use of instructional media. In particular, 74.4 percent of the respondents had no skills in the operation of instructional media equipment. As many as 81.0 percent had no skills in the production of instructional packages. Also, 82.5 percent had no skills in the selection of instructional media. As many as 83.5 percent had no training

TABLE 4.6: NUMBER AND PERCENTAGE OF FACULTY MEMBERS RESPONDING TO POSITIVE PERCEPTIONS STATEMENT ABOUT INSTRUCTIONAL MEDIA.

Positive Perceptions		Degree of Agreement				
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Instructional media can be used by the teacher:						
1. To motivate students in the learning process and bring additional details into his teaching.	F %	112 41.0	144 52.7	10 3.7	5 1.8	2 0.7
2. To reach a greater number of students equally at the same time.	F %	89 32.6	144 52.7	27 9.9	10 3.7	3 1.1
3. To provide for individual student's learning needs	F %	53 19.4	106 38.8	61 22.3	45 16.5	8 2.9
4. To grow professionally by having access to quality instructional materials prepared by other experienced teachers and subject specialists.	F %	68 24.9	150 54.9	35 12.8	16 5.9	4 1.5
5. To reduce his time in lecturing and note-giving.	F %	42 15.4	102 37.4	46 16.8	68 24.9	15 5.5

TABLE 4.7: NUMBER AND PERCENTAGE OF FACULTY MEMBERS RESPONDING TO NEGATIVE PERCEPTIONS STATEMENTS ABOUT INSTRUCTIONAL MEDIA.

Negative Perceptions		Degree of Agreement				
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. The cost of most instructional media is out of proportion to to their educational value.	F %	22 8.1	38 13.9	65 23.8	118 43.2	30 11.0
2. The personal relationship between the teacher and the student is lost when instructional media are used.	F %	16 5.9	47 17.2	24 8.8	144 52.7	42 15.4
3. The increased use of instructional media will down grade the teacher's role in instruction and put him out of work eventually.	F %	1 0.4	19 7.0	28 10.3	147 53.8	78 28.6
4. Instructional media is not conducive to learning/teaching in most subjects.	F %	9 3.3	41 15.0	51 18.7	119 43.6	53 19.4
5. The Center for Educational Technology has little or nothing to contribute to instructional improvement in this University.	F %	9 3.3	21 7.7	39 14.3	119 43.6	85 31.1

TABLE 4.8: NUMBER AND PERCENTAGE OF FACULTY MEMBERS WITH VARIOUS INSTRUCTIONAL MEDIA SKILLS

No.	Types of Skills		LEVELS OF TRAINING IN INSTRUCTIONAL MEDIA				
			Post Graduate Degree	Post Graduate Courses	Under-Graduate Degree	Under-Graduate Courses	No Training
1.	Operation of instructional media equipment.	F %	10 3.7	23 8.4	6 2.2	31 11.4	203 74.4
2.	Production of instructional packages.	F %	10 3.7	10 3.7	7 2.6	24 8.8	221 81.0
3.	Selection of instructional media.	F %	7 2.6	18 6.6	3 1.1	20 7.3	225 82.5
4.	Management of instructional media.	F %	7 2.6	14 5.1	3 1.1	21 7.7	228 83.5
5.	Evaluation of instructional packages.	F %	6 2.2	13 4.8	4 1.5	16 5.9	234 85.7

in instructional media management while 85.7 percent had no skills in the evaluation of instructional packages.

The relationship between the frequency of instructional media use and faculty members' perception about instructional media was tested statistically in Hypothesis 3.

Hypothesis 3:

Null Hypothesis (H_0):

There will be no significant relationship between the frequency of use and faculty members' perceptions about instructional media.

In testing this hypothesis, five positive perceptions and five negative perceptions by faculty members about instructional media were considered.

Analysis of Results:

Crosstabulations were made and the results were used to test the null hypothesis.

The null hypothesis was tested for both slides and overhead transparencies. This involved an extensive testing for each of the five positive and five negative perceptions about instructional media.

The results displayed in Table 4.9 show that the Null hypothesis is rejected 6 out of 10 times (60 percent). In that situation, the Null hypothesis 3 is rejected in respect of slides.

Similarly, the summary of the results in Table 4.10 show that the Null Hypothesis is rejected 5 out of 10 times (50 percent). In that case, the Null hypothesis is rejected

TABLE 4.9: SUMMARY OF CROSS-TABULATIONS OF FREQUENCIES OF USE OF MEDIA BY POSITIVE AND NEGATIVE PERCEPTIONS ABOUT INSTRUCTIONAL MEDIA.

Category of Perception	Perception Statements	N	STATISTICAL RESULTS			Remarks:
			Chi-Square	Degrees of Freedom	Significance Level	
Positive	Instructional Media can be used by the teacher:					
	1. To motivate students in the learning process and bring additional details into his teaching.	273	12.4739	16	.7108	Accepted
	2. To reach a greater number of students equally at the same time.	273	30.7518	16	.0145	Rejected
	3. To provide for individual student's learning needs.	273	33.9936	16	.0054	Rejected
	4. To grow professionally by having access to quality instructional materials prepared by other experienced teachers and subject specialists.	273	17.3807	16	.3614	Accepted
Negative	5. To reduce his time in lecturing and note-giving.	273	25.8529	16	.0561	Rejected
	1. The cost of most instructional media is out of proportion to their educational value.	273	25.4540	16	.0622	Accepted
	2. The personal relationship between the teacher and the student is lost when instructional media are used.	273	28.8130	16	.0252	Rejected
	3. The increased use of instructional media will downgrade the teacher's role in instruction and put him out of work eventually.	273	23.4689	16	.1018	Accepted
	4. Instructional media is not conducive to learning/teaching in most subjects.	273	29.7303	16	.0195	Rejected
	5. The Center for Educational Technology has little or nothing to contribute to instructional improvement in this university.	273	30.2306	16	.0168	Rejected

TABLE 4.10: SUMMARY OF CROSSTABULATIONS OF FREQUENCIES OF USE OF OVERHEAD TRANSPARENCIES BY POSITIVE AND NEGATIVE PERCEPTIONS ABOUT INSTRUCTIONAL MEDIA.

Category of Perception	Perception Statements	N	STATISTICAL RESULTS			Remarks:
			Chi-Square	Degrees of Freedom	Significance Level	Null Hypothesis
Positive	Instructional media can be used by the teacher:					
	1. To motive students in the learning process and bring additional details into his teaching.	273	61.2560	16	.0000	Rejected
	2. To reach a greater number of students equally at the same time.	273	9.4424	16	.8941	Accepted
	3. To provide to individual student's learning needs.	273	28.9114	16	.0245	Rejected
	4. To grow professionally by having access to quality instructional materials prepared by other experienced teachers and subject specialists.	273	17.6779	16	.3431	Accepted
	5. To reduce his time in lecturing and note-giving.	273	23.1918	16	.1087	Accepted
Negative	1. The cost of most instructional media is out of proportion to their educational value.	273	21.7085	16	.1529	Accepted
	2. The personal relationship between the teacher and the student is lost when instructional media are used.	273	38.1848	16	.0014	Rejected
	3. The increased use of instructional media will downgrade the teacher's role in instruction and put him out of work eventually.	273	15.6720	16	.4761	Accepted
	4. Instructional media is not conducive to learning/teaching in most subjects.	273	43.0293	16	.0003	Rejected
	5. The Center for Educational Technology has little or nothing to contribute to instructional improvement in this University.	273	36.2446	16	.0027	Rejected

in respect of overhead transparencies. The data in the two tables indicate that the Null hypothesis is rejected in respect of both slides and overhead transparencies. In conclusion, the Null hypothesis is rejected.

Research Question 4:

What specific support is provided by the University to encourage faculty members to use instructional media.

Answers to Research Question 4:

Eight different types of support which the university authority is giving to encourage instructional media use in Ahmadu Bello University, Zaria, have been listed in Table 4.11. On the average, 51.6 percent of the responses said that the university was not providing much support. For example, 61.5 percent said that the university was not providing the necessary support to encourage faculty members to use instructional media. For example, 51.6 percent of the respondents said that instructional media-related workshops and seminars were not organized for faculty members. Also, 50.9 percent of the respondents said that they had never been given grants to finance instructional development projects. The data also showed that 47.3 percent of the respondents had never been given any financial assistance to participate in instructional media-related conventions. While 63.4 percent of the respondents said that they had never been given special recognition for participation in instructional media activities, 42.1 percent

TABLE 4.11: NUMBER AND PERCENTAGE OF FACULTY MEMBERS RECEIVING UNIVERSITY SUPPORT FOR INSTRUCTIONAL MEDIA USE.

Types of Support	FREQUENCY OF SUPPORT RECEIVED				
	Very Often	Sometimes	Do Not Know	Seldom	None
1. Short courses in instructional media for lecturers.	F % 2 0.7	33 12.1	4 1.5	66 24.2	168 61.5
2. Instructional media-related workshop/seminars for lecturers.	F % 4 1.5	40 14.7	3 1.1	85 31.1	141 51.6
3. Services of the Center for Educational Technology	F % 60 22.0	86 31.5	18 6.6	36 13.2	73 26.7
4. Grants to individual university lecturers to finance instructional development projects.	F % 9 3.3	43 15.8	13 4.8	69 25.3	139 50.9
5. Financial sponsorship to university lecturers to participate in instructional media conventions and meetings.	F % 7 2.6	45 16.5	14 5.1	78 28.6	129 47.3
6. Special recognition and reward for lecturers' instructional media creativity.	F % 2 0.7	34 12.5	12 4.4	52 19.0	173 63.4
7. Departmental Budgetary support for instructional media needs of individual lecturers.	F % 12 4.4	77 28.2	5 1.8	64 23.4	115 42.1
8. Instructional media related activities accepted as part of the university's criteria for the promotion of lecturers.	F % 4 1.5	15 5.5	6 2.2	60 22.0	188 68.9

said that there was no departmental financial support for instructional media needs of faculty members. 68.9 percent said that instructional media-related activities were not usually accepted as part of the criteria for the promotion of faculty members. However, 31.5 percent of the respondents said that they sometimes received support in the form of the services provided by the University's Center for Educational Technology.

The relationship between faculty members' perceptions about university's support and the frequency of instructional media use was tested statistically in Hypothesis 4.

Hypothesis 4:

Null Hypothesis (H_0):

There will be no significant relationship between faculty members' perceptions about the university's support and the frequency of instructional media use.

In testing this hypothesis, eight types of university's support were considered against the frequencies of instructional media use.

Analysis of Results:

Crosstabulations were made and the results were used to test the Null hypothesis.

The results displayed in Table 4.12 show that the Null hypothesis is rejected 7 out of 8 times (87.5 percent). Therefore, the Null hypothesis is rejected in respect of slides.

TABLE 4.12: CROSSTABULATIONS OF FREQUENCIES OF USE OF SLIDES BY UNIVERSITY MEDIA-RELATED SUPPORT.

University Media Related No. Support Types	N	STATISTICAL RESULTS			Remarks: Null Hypothesis
		Chi-Square	Degrees of Freedom	Significance Level	
1. Short courses in instructional media for lecturers.	273	31.7722	16	.0107	Rejected
2. Instructional media-related workshop/seminars for lecturers	273	52.1447	16	.0000	Rejected
3. Services for the Center for Educational Technology.	273	36.5852	16	.0024	Rejected
4. Grants to individual university lecturers to finance instructional media projects.	273	33.0335	16	.0070	Rejected
5. Financial sponsorship to university lecturers to participate in instructional media conventions and meetings.	273	21.6137	16	.1561	Accepted
6. Special recognition and reward for lecturers' instructional media creativity.	273	34.0209	16	.0054	Rejected
7. Departmental Budgetary support for instructional media needs of individual lecturers.	273	39.3726	16	.0010	Rejected
8. Instructional media-related activities accepted as part of the university's criteria for the promotion of lecturers.	273	35.4689	16	.0034	Rejected

TABLE 4.13: SUMMARY OF CROSSTABULATIONS OF FREQUENCIES OF USE OF OVERHEAD TRANSPARENCIES BY UNIVERSITY MEDIA-RELATED SUPPORT

University Media Related No. Support Types	N	STATISTICAL RESULTS			Remarks: Null Hypothesis
		Chi-Square	Degrees of Freedom	Significance Level	
1. Short courses in instructional media for lecturers.	273	24.1796	16	.0856	Accepted
2. Instructional media-related workshop/seminars for lecturers	273	12.6595	16	.6975	Accepted
3. Services for the Center for Educational Technology.	273	34.1898	16	.0051	Rejected
4. Grants to individual university lecturers to finance instructional media projects.	273	21.1119	16	.1742	Accepted
5. Financial sponsorship to university lecturers to participate in instructional media conventions and meetings.	273	17.2982	16	.3666	Accepted
6. Special recognition and reward for lecturers' instructional media creativity.	273	41.4009	16	.0005	Rejected
7. Departmental Budgetary support for instructional media needs of individual lecturers.	273	72.4245	16	.0000	Rejected
8. Instructional media-related activities accepted as part of the university's criteria for the promotion of lecturers.	273	51.5847	16	.0000	Rejected

The results displayed in Table 4.13 show that the Null hypothesis is rejected 4 out of 8 times (50 percent). In that case, it can not be concluded absolutely that the Null hypothesis is rejected in respect of overhead transparencies.

However, the average of the results of testing the hypothesis for both slides and overhead transparencies show that the Null hypothesis is rejected 11 out of 16 times (68.8 percent). Therefore, the Null hypothesis is rejected.

The relationship between faculty members' levels of training and skills in instructional media and the frequency of instructional media use was tested in Hypothesis 5.

Hypothesis 5:

Null Hypothesis (H_0):

There will be no significant relationship between faculty members' frequency of use and the levels of training and skills in instructional media.

In testing this hypothesis, five levels of instructional media training and skills in instructional media use were considered.

Analysis of Results:

Crosstabulations were made and the results were used to test the null hypothesis.

The results displayed in Table 4.14 show that the Null hypothesis is accepted 3 out of 5 times (60 percent).

TABLE 4.14: SUMMARY OF CROSSTABULATIONS OF FREQUENCIES OF USE OF SLIDES BY INSTRUCTIONAL MEDIA SKILLS.

No.	Category of Skills	STATISTICAL RESULTS				Remarks:	
		N	Chi-Square	Degrees of Freedom	Significance Level	Null Hypothesis	
1.	Operation of instructional media equipment	273	29.2344	16	.0224	Rejected	
2.	Production of instructional packages	273	12.3990	16	.7161	Accepted	
3.	Selection of instructional materials	273	30.4924	16	.0156	Rejected	
4.	Management of instructional media.	273	20.0836	16	.2165	Accepted	110
5.	Evaluation of instructional packages	273	22.5694	16	.1257	Accepted	

In that case, the Null hypothesis is accepted in respect of slides.

In Table 4.15, the data show that the Null hypothesis is rejected 3 out of 5 times (60 percent). In that case, the Null hypothesis is rejected in respect of overhead transparencies.

In a situation where the Null hypothesis was accepted (60 percent) in respect of slides but was at the same time rejected (60 percent) in respect of overhead transparencies, there was need to resolve the conflict. Therefore, the Null hypothesis was also tested in respect of Audio tapes which were the third most frequently used instructional media. Table 4.16 contains the results of the testing of the Null hypothesis in respect of Audio tapes. The results show that the Null hypothesis is rejected 4 out of 5 times (80 percent).

The average of the results of testing the Null hypothesis in respect of slides, overhead transparencies and audio tapes shows that the Null hypothesis is rejected 9 out of 15 times (60 percent). Therefore, it can be concluded that the Null hypothesis is rejected.

Research Question 5:

What are the sources from which faculty members in Ahmadu Bello University, Zaria, obtain information about instructional media.

Answers to Research Question 5:

In any academic setting where instructional media are used, there ought to be available sources of information

TABLE 4.15: SUMMARY OF CROSSTABULATIONS OF FREQUENCIES OF USE BY OVERHEAD TRANSPARENCIES BY INSTRUCTIONAL MEDIA SKILLS

No.	Category of Skills	N	STATISTICAL RESULTS			Remarks: Null Hypothesis
			Chi-Square	Degrees of Freedom	Significance Level	
1.	Operation of instructional media equipment	273	41.1028	16	.0004	Rejected
2.	Production of instructional packages	273	18.4575	16	.2978	Accepted
3.	Selection of instructional materials.	273	42.7284	16	.0003	Rejected
4.	Management of instructional media.	273	36.3886	16	.0026	Rejected
5.	Evaluation of instructional packages.	273	20.4573	16	.2003	Accepted

TABLE 4.16: SUMMARY OF CROSSTABULATIONS OF FREQUENCIES OF USE OF AUDIOTAPES BY INSTRUCTIONAL MEDIA SKILLS

No.	Category of Skills	N	STATISTICAL RESULTS			REMARKS: Null Hypothesis
			Chi-Square	Degrees of Freedom	Significance Level	
1.	Operation of instructional media equipment	273	30.9323	16	.0137	Rejected
2.	Production of instructional packages.	273	45.0749	16	.0001	Rejected
3.	Selection of instructional materials.	273	30.8951	16	.0139	Rejected
4.	Management of instructional media.	273	35.1912	16	.0037	Rejected
5.	Evaluation of instructional packages.	273	25.3673	16	.0636	Accepted

on instructional media. Eight possible sources of information on instructional media have been identified in Table 4.17 which show that on the average, 51.8 percent of the faculty members did not get information from many of the sources. For example, 59.3 percent of the respondents said that they had never received any information on instructional media from the Center for Educational Technology. Also, 67.0 percent of the respondents said that they had never received any special correspondence from the Center for Educational Technology.

In general, many respondents did not obtain information about instructional media from several other sources such as: Heads of Departments (56.0 percent); talking to professional colleagues in the department (46.2 percent); talking to faculty members in other departments (53.8 percent); reading instructional media-related journals (59.0 percent) and reading general education professional journals (83.5 percent).

The relationship between the amount of information faculty members received and the frequency of instructional media use was tested in Null Hypothesis 6.

Hypothesis 6:

Null Hypothesis (H_0):

There will be no significant relationship between the frequency of use and the amount of information which faculty members receive about instructional media.

TABLE 4.17: NUMBER AND PERCENTAGE OF FACULTY MEMBERS RECEIVING INFORMATION ON INSTRUCTIONAL MEDIA.

Sources of Information	F	%	FREQUENCY OF INFORMATION			
			Very Often	Sometimes	Do Not Know	Never
1. Center for Educational Technology's Newsletter	F	%	7 2.6	43 15.8	1 0.4	60 22.0 162 59.3
2. Information supplied by manufacturers or distributors of audio-visual aids.	F	%	29 10.6	65 23.8	1 0.4	69 25.3 109 39.9
3. Center for Educational Technology Special Correspondence to faculty members.	F	%	4 1.5	25 9.2	0 0.0	61 22.3 183 67.0
4. Correspondence from Departmental Head or Dean of the Faculty	F	%	11 4.0	43 15.8	2 0.7	64 23.4 153 56.0
5. By talking to your colleagues in the faculty.	F	%	24 8.8	85 31.1	2 0.7	36 13.2 126 46.2
6. By talking to other faculty members outside your faculty but who have similar teaching concerns with you.	F	%	10 3.7	50 18.3	5 1.8	61 22.3 147 53.8
7. By reading instructional media/technology journals or magazines.	F	%	29 10.6	38 13.9	2 0.7	43 15.8 161 59.0
8. By reading Professional Journals in Education	F	%	9 3.3	3 1.1	1 0.4	32 11.7 228 83.5

In testing this hypothesis, eight sources of information were considered against the frequencies of instructional media use.

Analysis of Results:

Crosstabulations were made and the results were used to test the Null hypothesis.

The results displayed in Table 4.18 show that the Null hypothesis is rejected 7 out of 8 times. In that situation, the Null hypothesis is rejected in respect of slides.

In Table 4.19, the results show that the Null hypothesis is rejected 6 out of 8 times (75 percent). Therefore, the Null hypothesis is rejected in respect of overhead transparencies.

The average of the results of testing the hypothesis in respect of both slides and overhead transparencies show that the Null hypothesis is rejected 13 out of 16 times (81.3 percent).

In that situation, the Null hypothesis is rejected.

Summary of Findings:

In this chapter, five Research Questions and six hypotheses were examined.

Research Question 1 showed that in a 10-week academic term, faculty members used slides more frequently than any other instructional media. The next most frequently used instructional media items were overhead transparencies followed by audiotapes.

TABLE 4.18: SUMMARY OF CROSSTABULATIONS OF FREQUENCIES OF USE OF SLIDES BY SOURCES OF INFORMATION

No.	Source of Information	N	STATISTICAL RESULTS			Remarks: Null Hypothesis
			Chi-Square	Degrees of Freedom	Significance Level	
1.	Educational Technology Center Newsletter and other publications	272	35.3574	12	.0004	Rejected
2.	Information supplied by manufacturers or distributors of audio-visual aids.	273	57.3289	16	.0000	Rejected
3.	Center for Educational Technology Special Correspondence to faculty members.	273	25.7794	12	.0115	Rejected
4.	Correspondence from your Departmental Head or Dean of the Faculty.	273	50.6950	16	.0000	Rejected
5.	By talking to your colleagues in the faculty or of similar interest.	273	37.5572	16	.0017	Rejected
6.	By talking to other faculty members outside your faculty but who have similar teaching concerns with you.	273	36.7882	16	.0022	Rejected
7.	By reading instructional media/technology journals or magazines.	273	25.2372	16	.0658	Accepted
8.	By reading other professional educational journals.	273	62.9652	16	.0000	Rejected

TABLE 4.19: SUMMARY OF CROSSTABULATIONS OF FREQUENCIES OF USE OF OVERHEAD TRANSPARENCIES BY SOURCES OF INFORMATION

No.	Source of Information	N	STATISTICAL RESULTS			Remarks: Null Hypothesis
			Chi-Square	Degrees of Freedom	Significance Level	
1.	Educational Technology Center Newsletter and other publications.	272	18.9029	12	.0909	Accepted
2.	Information supplied by manufacturers or distributors of audio-visual aids.	273	52.1420	16	.0000	Rejected
3.	Educational Technology Center's Special Correspondence to faculty members.	273	14.2279	12	.2864	Accepted
4.	Correspondence from your Departmental Head or Dean of the Faculty.	273	31.6444	16	.0111	Rejected
5.	By talking to your colleagues in the faculty or of similar interest.	273	39.8799	16	.0008	Rejected
6.	By talking to other faculty members outside your faculty but who have similar teaching concerns with you.	273	23.8437	16	.0930	Accepted
7.	By reading instructional media/technology journals or magazines.	273	32.7184	16	.0081	Rejected
8.	By reading other professional educational journals.	273	65.0746	16	.0000	Rejected

In general, there was a very low frequency of instructional media use.

Research Question 2 showed the highest number of times each of the five grades of faculty members used each of the instructional media item in a ten-week academic term. It showed that Lecturers made the most frequent use of instructional media. The next most frequent users were Senior Lecturers. However, Professors, Assistant Lecturers and Readers (Associate Professors) were found to be the least frequent users of almost all the instructional media items.

Research Question 3 (a) showed the constraints on faculty members' use of instructional media in Ahmadu Bello University, Zaria. Of the ten identified constraints, six were rated by faculty members as major; three were rated as moderate and one was rated minor.

Research Question 3 (b) showed the individual factors which had hindered faculty members' use of instructional media. Three categories of individual factors were considered.

In the first category were five positive perceptions about instructional media. On the average, 47.3 percent of the respondents agreed strongly with all the five positive perceptions about instructional media. Also, 47.3 percent of the respondents strongly disagreed with all the five negative perceptions about instructional media.

In the third category, it was revealed that on the average, 81.4 percent of the faculty members had no skills in instructional media use.

Research Question 4 showed that the general perceptions of faculty members was that the University was not providing the necessary instructional media-related support services to encourage instructional media use. However, as many as 31.5 percent of the respondents admitted that they were receiving some support from the Center for Educational Technology.

Research Question 5 showed that on the average, 58.1 percent of the faculty members did not receive information about instructional media.

Hypothesis 1 dealt with the relationship between the frequency of instructional media use and the grade levels of faculty members. The null hypothesis was accepted.

Hypothesis 2 dealt with the relationship between institutional constraints and the frequency with which faculty members use instructional media. The null hypothesis was rejected.

Hypothesis 3 dealt with the relationship between the positive and negative perceptions and the frequency of instructional media use. The null hypothesis was rejected.

Hypothesis 4 dealt with the relationship between the various categories of university support and the faculty members' frequency of instructional media use. The null hypothesis was rejected.

Hypothesis 5 dealt with the media related skills and the frequency of instructional media use by faculty members. The Null hypothesis was rejected.

Hypothesis 6 dealt with the number and frequency of media related information sources and the frequency with which faculty members use instructional media. The Null hypothesis was also rejected.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

INTRODUCTION:

The primary purpose of this study was to determine the individual and institutional factors which influence faculty members in the use of instructional media in Ahmadu Bello University, Zaria. To achieve this purpose, the following basic objectives were set for the study:

1. To determine the extent to which faculty members utilize instructional media.
2. To determine the extent to which individual faculty members' perceptions about instructional media, their job status, previous skills in the use of instructional media and the sources of information influence their utilization of instructional media.
3. To identify the ways in which institutional factors such as budgetary provisions, personnel reward mechanism and administrative policies influence faculty members' use of instructional media.

The ultimate aim was to draw conclusions and make recommendations to assist several people concerned with educational innovations involving instructional media in Ahmadu Bello University, Zaria in particular and higher education institutions in Nigeria in general.

The sample used in this study comprised 273 faculty members from nine academic faculties. The sample represented 73.8 percent of the faculty members who were sent questionnaires.

One common questionnaire was completed by the respondents. The questionnaire was used to collect personal data about the respondents and also to measure faculty members' frequency of instructional media use, perceptions about instructional media, types of skills and levels of training in instructional media use, the university's support for instructional media, constraints on instructional media use and the sources of information about instructional media.

The following research questions were examined:

1. To what extent are instructional media being used by faculty members?
2. Which grades of faculty members make the most use of instructional media?
3. (a) What constraints do faculty members face when using instructional media?
(b) What individual factors hinder or facilitate the use of instructional media by faculty members?

4. What specific support is provided by the university administration to encourage faculty members to use instructional media?
5. What are the sources from which faculty members obtain information about instructional media?

The following null hypotheses were tested:

1. There will be no significant relationship between the frequency of instructional media use and faculty members' grade levels.
2. There will be no significant relationship between the perceived constraints and the frequency of instructional media use by faculty members.
3. There will be no significant relationship between the frequency of use and faculty members' perceptions about instructional media.
4. There will be no significant relationship between faculty members' perceptions about the university's support and the frequency of instructional media use.
5. There will be no significant relationship between faculty members' frequency of use and the levels of training and skills in instructional media.
6. There will be no significant relationship between the frequency of use and the amount of information which faculty members receive about instructional media.

Summary of Findings:

The following are the summary results of the research questions and hypotheses:

1. Low Utilization of Instructional Media:

Among the available instructional media, the most frequently used were slides. This was followed by overhead transparencies which was in turn followed by audiotapes. The least used instructional media was television. Generally, there was a very low utilization of all the instructional media items.

2. Major Constraints:

Six major constraints on the use of instructional media were identified: non-availability of instructional media when needed; heavy teaching load; lack of information; lack of appropriate instructional media in some subject areas; lack of training and skills; and irregular electrical power supply.

3. Perceptions About Instructional Media:

On the average, 47.3 percent of the faculty members had strong positive perceptions about the role and contribution of instructional media in higher education.

4. Instructional Media Skills and Training:

On the average, 81.4 percent of the faculty members had no training and skills in instructional media.

5. University Support:

On the average, 51.6 percent of the faculty members felt that the University was not providing the necessary support services to encourage instructional media use.

6. Sources of Information:

On the average, 58.1 percent of the faculty members did not receive information about instructional media.

7. Faculty Members' Grade and Instructional Media Use:

There was no relationship between faculty members' grade levels and the frequency of instructional media use (Hypothesis 1).

8. Instructional Media Use and Perceived Constraints:

Faculty members who perceived less institutional constraints used instructional media more frequently (Hypothesis 2).

9. Instructional Media Use and Perceptions:

Instructional media items were used more frequently by those faculty members who had more positive perceptions about instructional media (Hypothesis 3).

10. Instructional Media Use and University Support:

Faculty members who received the most university support used instructional media most frequently (Hypothesis 4).

11. Instructional Media Use, Skills and Training Levels:

Faculty members who had more media-related skills and training utilized instructional media more frequently (Hypothesis 5).

12. Instructional Media Use and Sources of Information:

Faculty members who received information from more sources utilized instructional media more frequently (Hypothesis 6).

Discussion and Conclusions:

Educational innovations involving instructional media in higher education can be expensive. It is also possible for an institution of higher education to waste resources instead of benefiting from such innovations. Such could be the case when the administrative decisions underlining the innovations have ignored several institutional and individual factors.

One consequence of educational innovations based on such faulty administrative decisions has often been that expensive media equipment and materials are left unused. However, when properly defined, planned, administered and supported, instructional media programs could be used to meet some of the instructional needs of the adopting institutions.

Similarly, instructional media innovation can only reach its full potentials when the University administration

and the various academic units conscientiously integrate it into the University's entire instructional system. Instructional media utilization should not be the optional activity of a few faculty members. Therefore, the researcher feels that what is needed in Ahmadu Bello University, Zaria, is a well defined and carefully executed university-wide instructional media program to remedy the current situation where instructional media is seen by faculty members as an optional instructional activity. For example, several items of instructional media (equipment and materials) were available in the Center for Educational Technology and the 19 instructional media units in the University. However, in spite of the many positive perceptions which faculty members have about instructional media (Tables 4-6 and 4-7), there was low utilization of the equipment and materials because of a number of factors:

1. Institutional constraints (Tables 4-4 and 4-5).
2. Lack of instructional media training and skills (Table 4-8).
3. Inadequate university support for instructional media (Table 4-11).
4. Lack of information about instructional media (Table 4-17).

Recommendations:

In this study, some of the problems related to the utilization of instructional media in Ahmadu Bello University,

Zaria, have been identified. The following recommendations are offered to help solve or lessen the effects of the problems. The recommendations have been prioritized into two groups:

A. Priority Recommendations

B. Comprehensive Recommendations

A. Priority Recommendations: The findings showed that there was low utilization of instructional media because of a number of factors. One of the basic objectives of these recommendations is to increase the level of instructional media utilization through training, university support, adequate information and reduction in the number of institutional constraints:

1. Skills and Training: Inservice education or training programs should be instituted for faculty members.

These should include short courses, seminars and workshops with emphasis on:

- a. The operation of basic instructional media equipment such as slide, overhead, filmstrip and motion picture projectors and videotape monitors.
- b. The production of overhead transparencies, slides, filmstrips and videotapes.
- c. Basic photography
- d. The selection and evaluation of instructional media materials.

The inservice education or training programs recommended should be part of the University's formal instructional policies. A starting point for such

inservice education should be through a formal orientation for new faculty members. The Center for Educational Technology should be assigned by the University to develop and execute the inservice education or training in instructional media for faculty members.

2. Technical Facilities and Services: The Center for Educational Technology should strive to improve its services and make good impressions on its current clients. The Center can do this by providing efficient technical services.

Since the effective use of instructional materials requires adequate physical facilities, a priority concern of the Technical Services unit of the Center should be the development of a campus-wide system for the circulation and maintenance of instructional media materials and equipment.

Currently, there is a need to redesign and equip a majority of the classrooms and auditoria in the university to make them suitable for instructional media utilization. In particular, many of the classrooms and auditoria need electrical outlets, projection screens and public address system.

In future, the Center for Educational Technology should be consulted by the University's Estate Department before classrooms and auditoria are built.

This will enable the Center to consult the relevant academic units and then advise the Estate Department about the technical facilities required for instructional media use in such buildings.

3. Availability of Instructional Materials: The problem of non-availability of relevant instructional materials when needed should be solved jointly by the Center for Educational Technology and the 19 instructional media units. First, the Center for Educational Technology should increase its production activities so as to be able to help the several academic units obtain instructional materials locally instead of waiting endlessly for imported or commercially produced ones. The Center should also make use of the resources of the Nigerian (National) Educational Technology Center in Kaduna for the professional production of instructional media materials.

Second, the Center for Educational Technology should assist faculty members to obtain the required instructional needs through an organized inter-institutional loans and exchange of instructional materials among institutions of higher education in Nigeria.

4. Sources of Information: There should be an effective communication system between the various departments, faculty members, the Center for Educational Technology and the 19 instructional media units. The system for information dissemination and exchange

about instructional media can be created through regular correspondence, newsletters, special press releases, effective use of campus newspapers, bulletin boards, official University gazette, open house meetings and exhibitions.

The effectiveness of words of mouth as a medium for disseminating information about instructional media among faculty members have been showed in the study. This should be encouraged through regular departmental or faculty seminars and luncheon talks.

In addition, the Center for Educational Technology and the 19 instructional media units should subscribe to instructional media journals and make instructional media textbooks available for faculty members' use.

5. Services of the Center for Educational Technology:

The administration should help to enhance the image and the role of the Center for Educational Technology in the instructional media programs of the University by:

- a. Giving priority to the construction of the Center's proposed permanent building with adequate spaces for staff offices and media laboratories.
- b. Allocating adequate funds for the Center's operations and services.

- c. Recruiting and retaining the services of competent and dedicated instructional media specialists for the Center.

The 19 instructional media units and the Center for Educational Technology should eliminate unnecessary delays in processing requests and in providing instructional media services to faculty members.

- 6. Major Constraints and University Support: Serious efforts should be made through University policies to remove many of the major constraints on instructional media use in the University. In particular:
 - a. The University should have its own source of regular electrical power supply independent of the public (National Electric Power Authority) electrical source.
 - b. In addition to making instructional media equipment and materials available, the Center for Educational Technology should also provide technical assistance such as set up and projectionists whenever requested by faculty members.

The sensitivity of faculty members toward instructional media use should be created and sustained through the formulation of definite university policies and programs for:

- a. Giving budgetary support for instructional media needs of faculty members at the departmental level.

- b. Accepting instructional media related activities as part of the University's criteria for the promotion of faculty members.
- c. Giving grants to faculty members to finance instructional development projects.
- d. Giving financial sponsorship to faculty members to participate in instructional media conventions.
- e. Giving special recognition to faculty members for instructional media. This could be monetary reward, commendation and distinguished-faculty awards.

B. Comprehensive Recommendations: In addition to the Priority recommendations, other far reaching university-wide actions are also necessary.

In view of the findings and conclusions of this study, the researcher feels that in order to introduce educational innovations involving instructional media successfully in the University, an Instructional Innovations Program (IIP) is needed. It would include (1) the systematic identification of individual and organizational factors which are crucial to the adoption of instructional innovation by faculty members; (2) activities performed within and supported by the University, for the ultimate purpose of improving instruction through curricular, faculty and organizational development.

The proposed Instructional Innovations Program is a model for developing institutional climate for change characterized by a commitment by the central administration. Many authors have stressed that any successful instructional innovation needs an institutional commitment. For example, Diamond supported the above when he wrote that:

...change will not occur without a serious commitment by the central administration. The commitment must be in action as well as in words and must be supported by a budget specially allocated for that purpose.¹

In a review of the experience of instructional innovations in Michigan State University, Davis listed three of the many expectations of an Educational Development Program based on an institutional commitment to instructional innovations when he said:

As originally conceived, the Educational Development Program was based on the premise that innovation in higher education requires expert consultation on the teaching and learning process, the use of advanced technology, and the availability of discretionary funds.²

Finally, the program is needed because educational innovations involving instructional media are currently being implemented in an uncoordinated fashion by several departments and the Center for Educational Technology. The argument against such a piecemeal approach to instructional improvement in higher education was made by Bergquist and Phillips when they said:

Since piecemeal efforts to improve college and university teaching have generally proven ineffective, we must turn to a comprehensive approach to faculty development, through which we can develop new methods of evaluation and

diagnosis, find viable ways of introducing new technology and curricula, and explore new approaches to instructional improvement.³

Components of The Proposed
Instructional Innovations Program:

Figure 5.1 represents the organizational structure of the Instructional Innovations Program being proposed.

A Deputy Vice-Chancellor should head the program. He would be responsible to the Vice-Chancellor and the Academic Senate for the co-ordination of the following components of the Instructional Innovations Program:

1. Learning Resources Centers (LRC) should be located in all the academic faculties. They should be instructional media units designed to encourage high standards of excellence in instruction and learning by providing a variety of opportunities for instructional media use by faculty members. The Learning Resources Centers should be used to fulfill the teaching and research goals of each academic faculty by acquiring and circulating resource materials; housing noncirculating resources; operating a reserve readings collection; providing facilities for producing and using self-instructional materials; providing equipment and facilities for producing simple instructional media materials such as overhead transparencies, graphics and audiotapes.
2. Center for Educational Technology (CET) should be a campus-wide media center designed to provide professional support for the design, development, production,

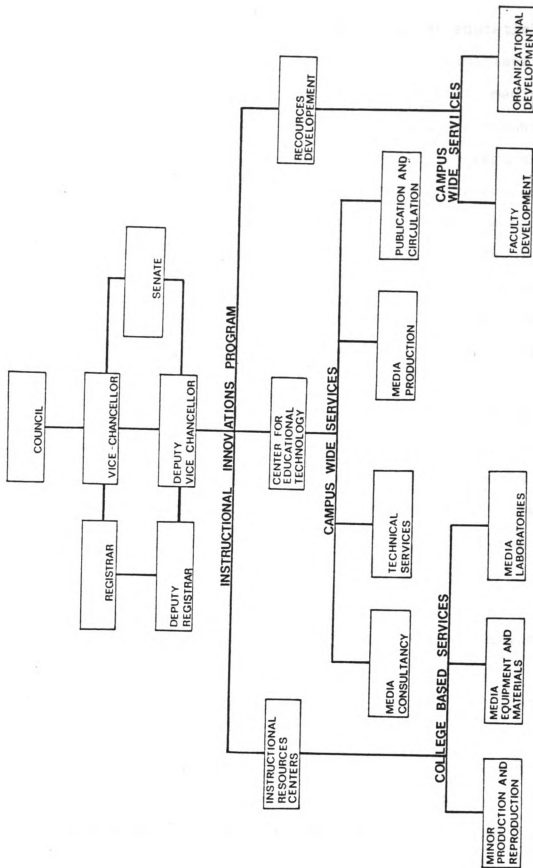


FIGURE 5-1: PROPOSED MODEL FOR INSTRUCTIONAL INNOVATIONS PROGRAM AT AHMADU BELLO UNIVERSITY, ZARIA.

utilization and evaluation of instructional media materials. It should also maintain an educational film library; provide public address, videotape and audio-tape services; provide instructional media duplication services; provide basic audio-visual equipment and projectionist services for regular courses. Details of the functions of the proposed Center for Educational Technology are in Appendix E.

3. Instructional Resources Development (IRD) should consult, disseminate information and render professional assistance to faculty members and administrative personnel on instructional strategies, program evaluation, curricular and faculty development.

The unit should also organize regular workshops and seminars for faculty members on academic counseling and evaluation of students, decision-making and problem-solving in teaching, evaluating instruction, classroom management, self-paced instruction, educational leadership and instructional media use.

Each of the three components should be under a Director who will be assisted by a team of competent, dedicated and specialized staff members.

The Directors of both the Center for Educational Technology and the Instructional Resources Development should be responsible directly to the Deputy Vice-Chancellor in charge of the proposed Instructional Innovations Program. However, the Directors of the media

units in the various academic faculties would be responsible to the Deputy Vice-Chancellor in charge of the Instructional Innovations Program through their respective academic deans. This is to ensure the active participation and commitment of the academic deans to instructional improvement through the utilization of instructional media.

The proposed model has its own merits because of the situations in Ahmadu Bello University, Zaria in particular and in Nigerian universities in general.

For example, the strategy of having a Deputy Vice-Chancellor as the Director of the program has many advantages:

1. He is an officer high up in both the academic and administrative hierarchies of the university.
2. He is a highly respected officer with wide range of powers and influence in the university community.
3. He is a member of the University Council, which is the highest policy-making and governing body of the university.
4. He is a member of the Academic Senate which is the manager of all educational affairs of the university.
5. He is a member of key committees such as The University Development Committee, The University Board on Research, Committee of Deans and Directors (Appendix M), Finance and General Purposes Committee and The Academic Planning Committee.

The assumption is that these advantages will ensure the commitment of the central administration for the program. Such a commitment will be beneficial to instructional media innovations in the university.

Implications For Future Research:

The findings of this study can be generalized beyond the sample that was studied to the entire population of faculty members at Ahmadu Bello University, Zaria. Also, the findings can be generalized to the other Nigerian universities.

It would be a major contribution to the development of instructional media in Nigerian higher education, if this study is replicated in other Nigerian universities. It will be necessary to repeat this study even at Ahmadu Bello University, Zaria in the future to determine how far the recommendations and other measures have been effected to encourage instructional media use by faculty members.

The following specific areas of future research have been generated by this study:

1. A study to determine the general attitudes of students to instructional media and especially to find out how they learn from such media.
2. A study to determine the effects of faculty members' cultural traits on their utilization of instructional media.
3. A study to evaluate the services of the current instructional media units in the different academic faculties in the University.

4. A study to determine the cost-effectiveness of instructional media programs.

Reflections:

The primary objective of the proposed Instructional Innovations Program is to encourage faculty members to utilize instructional media in their instructional functions. It is hoped that a full implementation of the proposal will eventually remove the impression that the emphasis is only on the use of technology in instruction. A combination of the components of the proposed program will lead to the integration of instructional media into the University's instructional system through long-time and large-scale Faculty, Instructional and Organizational Development efforts. The proposed program is in essence an Educational Development Program with emphasis on:

1. The use of machines in education.
2. A technology of instruction
3. Curriculum development
4. Management of education

However, much as the proposed program is desirable, the implementation may be difficult because of the following limitations:

1. The proposal has implications for a re-organization of the university administration. For example, it may be unfair to assign the Deputy Vice-Chancellor to head the program in a situation where there is only one such officer in

the university. The proposal therefore implies the appointment of more Deputy Vice-Chancellors to handle other university matters. It is not going to be easy to carry out such administrative re-organization in the university until there are changes in the current **statutes** of the university.

2. The unpredictability of university funds may prevent the success of such an expensive educational innovation. The fact is that the university's internal revenues are meager. Public and corporate donations are also meager. The major source of funds is the Federal Nigerian Government. However, the amount of funds made available annually to the National Universities Commission for allocation to the 13 universities is often dictated more by the political disposition of the Federal Minister (Commissioner) of Education and his advisers than by the actual needs of the universities.
3. The present 4-year or 7-year tenureship of Vice-Chancellors in Nigerian universities may not be favorable to the proposed Instructional Innovations Program. The tenureship is not only too short but also creates room for instability in university leadership. Such instability is often accompanied by shifts in policies and priorities.

which may hurt the program. Moreover, it may not be possible to have a Vice-Chancellor who will always be well disposed towards instructional media programs already initiated by a predecessor.

4. The attitude of faculty members to educational innovations leaves room for concern. Not only are many faculty members very unwilling to search for new ideas on their own but they appear too indifferent to try the resources in the university's media units. The faculty members should take responsibility for the utilization of instructional media. There may be need to ensure these responsibilities through persuasive efforts by the University.

FOOTNOTES FOR CHAPTER V

¹Robert M. Diamond, "Academic Redesign in Higher Education: A Matter of Survival" in Audiovisual Instruction, Vol. 19, Number 10, December 1974, p.14.

²Robert H. Davis, et. al., Commitment to Excellence: A Case Study of Educational Innovation (Michigan State University: Educational Development Program, 1976), p.ix

³William H. Bergquist and Steven R. Phillips, "Components of an Effective Faculty Development Program" in The Journal of Higher Education, Vol. 46, Number 2, March/April, 1975, p.177.

APPENDICES

APPENDIX A

STATISTICS OF APPLICATIONS AND OFFERS OF
ADMISSION TO NIGERIAN UNIVERSITIES.

STATISTICS OF APPLICATIONS AND OFFERS OF
ADMISSION TO NIGERIAN UNIVERSITIES

States of Nigeria	1978/79 Academic Year			
	No. of Appli- cations by State of Origins	Percen- tage of Appli- cations (%)	Total No. of Admis- sions (N)	Percen- tage of Total Admis- sions (%)
Anambra	15020	13.273	1762	10.29
Bauchi	771	.68	392	2.29
Bendel	17136	15.14	2160	12.61
Benue	3728	3.29	664	3.88
Borno	800	.7	550	3.21
Cross River	6037	5.33	1052	6.14
Gongola	1238	1.09	510	3.00
Imo	19702	17.41	2126	12.41
Kaduna	1431	1.26	562	3.28
Kano	814	.72	509	2.97
Kwara	4958	4.38	978	5.7
Lagos	2099	1.85	304	1.77
Niger	746	.66	210	1.23
Ogun	8247	7.29	1116	6.51
Ondo	10223	9.03	1285	7.50
Oyo	13358	11.00	1702	9.94
Plateau	1356	1.2	355	2.07
Rivers	5033	4.45	697	4.08
Sokoto	465	.41	198	1.16
Total	113162	100.00	17132	15.16

Adapted: M.S. Angulu (Registrar, Joint Admissions and Matriculation Board) statement captioned, "Admissions into Universities 1978/79 Session: JAMB* Speaks Out", in New Nigerian Newspaper March 12, 1979, p.4.

*JAMB stands for Joint Admissions and Matriculation Board of all Nigerian universities.

APPENDIX B

PRIORITY GIVEN TO EDUCATION
IN THE THIRD NATIONAL
DEVELOPMENT PLAN, 1975-80.

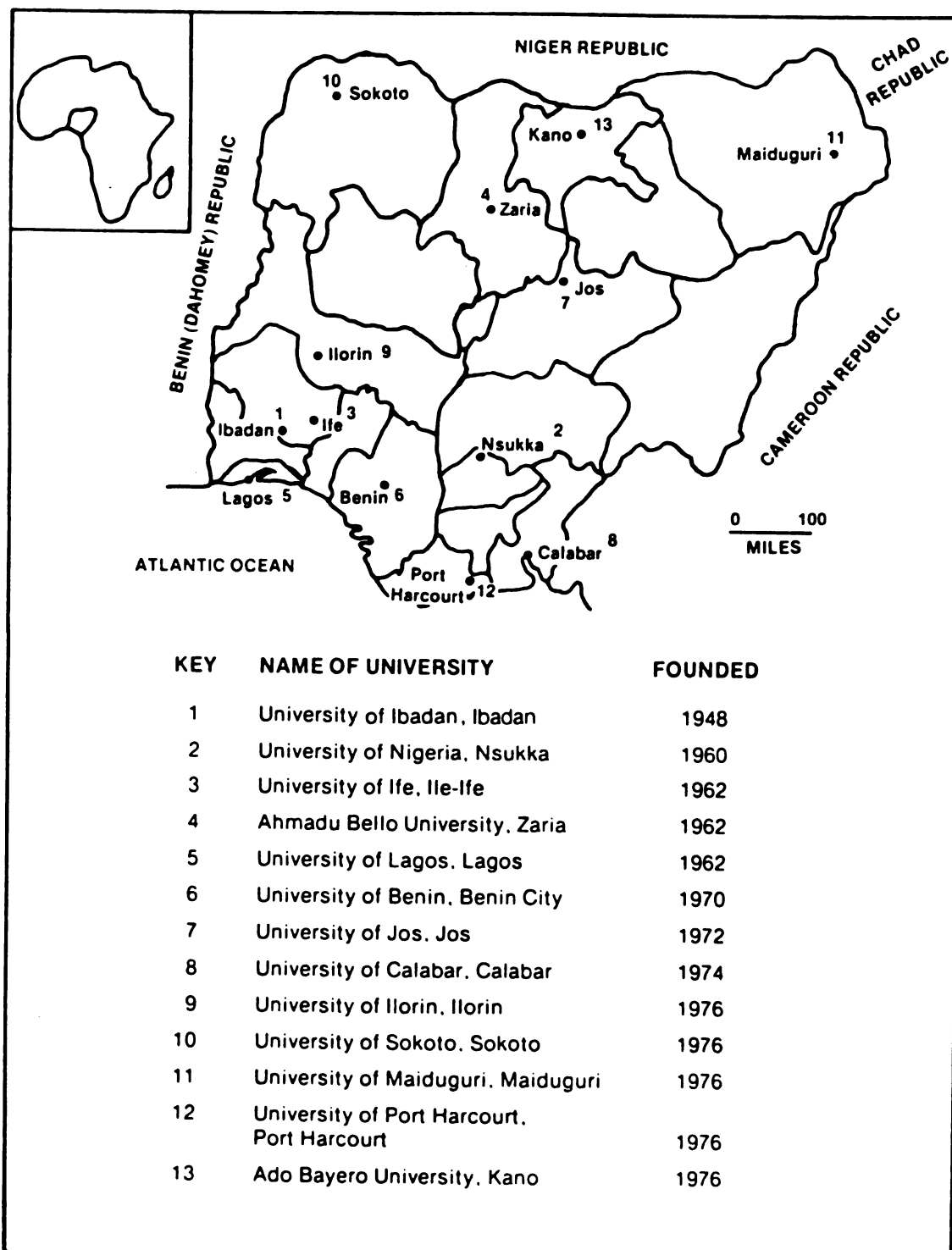
PRIORITY GIVEN TO EDUCATION IN THE THIRD NATIONAL DEVELOPMENT
PLAN, 1975-80.

SECTOR	TOTAL INVESTMENT	
	Federal Government %	All States Government %
A. <u>ECONOMIC</u>		
1. Agriculture	2.9	13.4
2. Livestock	0.7	2.6
3. Forestry	0.1	1.2
4. Fishery	0.2	0.6
5. Mining and Quarrying	10.2	--
6. Manufacturing and Craft	18.8	6.1
7. Power	3.6	2.1
8. Commerce and Finance	1.2	3.5
9. Transport	24.0	15.4
10. Communications	5.1	--
B. <u>SOCIAL</u>		
*11. Education	6.3	12.0
12. Health	1.2	6.8
13. Information	0.9	2.2
14. Labour and Sports	0.2	--
15. Social Welfare	0.1	1.7

Adapted: Federal Republic of Nigeria, Third National Development Plan, 1975-80, Vol. I, 1975, p. 349.

APPENDIX C
UNIVERSITIES IN NIGERIA (1948-79)

UNIVERSITIES IN NIGERIA (1948-79)



APPENDIX D

BRIEF DESCRIPTION OF ACADEMIC POSITIONS IN NIGERIAN UNIVERSITIES

BRIEF DESCRIPTION OF ACADEMIC
POSITIONS IN NIGERIAN UNIVERSITIES

1. Professors:

Distinguished scholars who have made at least 10 years post-doctoral contribution to knowledge through research and scholarly publications and who have had adequate university teaching experience including the supervision of graduate research. Salary Grade Level 16.

2. Readers:

Academic staff members with at least seven years post doctoral university teaching and research experience in addition to scholarly publications. Salary Grade Level 15.

3. Senior Lecturers:

Academic staff members with at least five years university teaching and research experience and some scholarly publications. Salary Grade Level 13.

4. Lecturers:

Grade I - Academic staff members with at least three years post doctoral university teaching and research experience and scholarly publications. Salary Grade Level 12.

Grade II - Academic staff members with a fresh doctorate degree or less than three years post doctoral university teaching and research. Salary Grade Level 10.

5. Assistant Lecturers:

Academic staff members with Masters degrees and/or professional qualifications. Salary Grade Level 9.

Faculty Members' Salaries in Nigerian Universities

Faculty Member	Grade Level	Salary Per Annum*	
		Entry Point	Terminal Point
Professor	16	₦11,568	₦12,720
Reader	15	₦10,296	₦11,328
Senior Lecturer	13	₦ 8,064	₦ 9,024
Lecturer 1	12	₦ 7,404	₦ 8,052
Lecturer 2	10	₦ 5,760	₦ 6,732
Assistant Lecturer	9	₦ 4,668	₦ 5,640

*₦1.00 = \$1.65 (United States Dollar)

Appointments to the above positions may be either on fixed term (normally two years contract renewable by mutual agreement for non-Nigerians) or on permanent basis till the retiring age of sixty.

Appointees are entitled to economy-class transport fare for themselves, wife and up to five children on appointment, (on home leave every other two years for non-Nigerian staff only) and on retirement or termination of appointment. Fringe benefits include car loan and a monthly car basic allowance, a pension scheme similar in all Nigerian Universities and the Public Service of Nigeria. Local travelling allowances are paid for official assignments. Other fringe benefits include free medical care and partly furnished accommodations.

APPENDIX E

SUMMARY OF THE FUNCTIONS OF
INSTRUCTIONAL MEDIA
CENTERS IN HIGHER EDUCATION

1. Participation in (but not full responsibility for) the design of instructional systems, a process involving the comprehensive analysis of human and non-human factors and their interrelations in teaching and learning.
2. Circulation of printed materials, involving the use of modern information storage and retrieval systems.
3. Circulation of motion pictures and other audiovisual materials and equipment for on-campus purposes.
4. Off-campus circulation of educational materials through extension services and/or by means of cooperative "service area" programs.
5. Customized production of instructional materials such as motion pictures, graphics, and photographic materials.
6. Provision of facilities and coaching for faculty members and students to prepare their own inexpensive instructional materials, such as overhead transparencies, slides, and charts.
7. Provision of services and facilities for large-group instruction, including open- and closed-circuit television and special classrooms designed for use by groups of varying sizes and equipped for the use of various media or for multimedia presentations.
8. Television and radio broadcasting for regional and community education (in the broad sense) and for off-campus instruction of enrolled students.
9. Provision of language laboratories and other electronic teaching or learning facilities for independent study and automated instruction.
10. Monitoring of programmed instruction, including the use of teaching machines.
11. Technical services such as the design, installation, maintenance, and operation of instructional equipment of all kinds, including television and radio transmitters, electronic components for language laboratories, classroom communication and student-response systems, projectors, magnetic recorders.

12. Assistance in planning and designing new buildings and instructional facilities to promote efficient use of educational media.
13. Inservice education and dissemination of information regarding instructional media developments, techniques and research findings.
14. Experimental development and trial of instructional devices, techniques and materials.
15. Professional education of specialists and generalists qualified to assume positions to leadership in planning and directing educational media programs and research in this area.

Source: James W. Brown, et al, Administering Educational Media (New York: McGraw-Hill, Inc., 1972) p.102-103

APPENDIX F

ACADEMIC UNITS IN AHMADU
BELLO UNIVERSITY, ZARIA

ACADEMIC UNITS IN AHMADU BELLO UNIVERSITY, ZARIA¹

1. Faculty of Agriculture
2. Faculty of Arts and Social Sciences
3. Faculty of Education
4. Faculty of Engineering
5. Faculty of Environmental Design
- a 6. Faculty of Law
7. Faculty of Human Medicine
8. Faculty of Pharmaceutical Sciences
9. Faculty of Science
10. Faculty of Veterinary Medicine
- b 11. Institute for Agricultural Research and Special Services
- a 12. Institute of Administration
- b 13. Institute of Health
14. Institute of Education
- ab 15. National Animal Production Research Institute, Shika
- b 16. Agricultural Extension and Research Liaison Services
- ab 17. Institute of Agricultural Research, Mokwa
- b 18. Institute of Agricultural Research, Kano
- a 19. College of Agriculture, Kabba
- a 20. College of Agriculture, Samaru
- b 21. Center for Islamic Legal Studies
- b 22. Center for Nigerian Cultural Studies
- b 23. Center for Social and Economic Studies

¹Compiled from the official Calendar and Staff Directory 1978/79, Ahmadu Bello University, Zaria, Pages 13-16: 33-123

- a 24. College of Agriculture and Animal Sciences, Mando-Kaduna
- a 25. College of Agriculture, Bakura
- b 26. Center for Adult Education and Extension Services
- 27. Center for Educational Technology
- a 28. Advanced Teachers College, Zaria
- a 29. Advanced Teachers College, Kano

^aExcluded from the sample because it is far away from Samaru main campus of the university.

^bExcluded from the sample because it is mainly a research-oriented unit.

APPENDIX G

QUESTIONNAIRE USED IN COLLECTING DATA

QUESTIONNAIRE USED IN COLLECTING DATA

SECTION A: PERSONAL DATA

Please, supply the following information about your professional status, etc. in this university. Mark (x) against the correct options in Nos. 1-4 and fill in No. 5. No name is required and all information will be held in confidence

1. NATIONALITY:

☐ Nigerian☐ Expatriate

2. SEX

☐ Male☐ Female

3. CURRENT ACADEMIC GRADE

☐ Professor☐ Reader☐ Senior Lecturer☐ Lecturer☐ Assistant Lecturer

4. ADMINISTRATIVE/ACADEMIC RELATED POSITIONS:

☐ Dean of Faculty☐ Head of Department/Division☐ Others _____ (specify)

5. COMPLETE THE FOLLOWING BY FILLING IN:

Faculty _____

Department _____

SECTION B: FREQUENCY OF USE OF INSTRUCTIONAL MEDIA

Mark (x) to indicate the average number of times you use each of the following instructional media in your major teaching subject a 10 week term. It is assumed that your class meets once each week, and that sometimes extra class-meetings take place.

INSTRUCTIONAL MEDIA	NUMBER OF TIMES USED IN A TERM				
	10+	7-9	4-6	1-3	0
1. Slides	_____	_____	_____	_____	_____
2. Film Strips	_____	_____	_____	_____	_____
3. Motion Pictures/films	_____	_____	_____	_____	_____
4. Overhead Transparencies	_____	_____	_____	_____	_____
5. Radios	_____	_____	_____	_____	_____
6. Television/videotapes	_____	_____	_____	_____	_____
7. Audio-tape recording	_____	_____	_____	_____	_____

SECTION C: PERCEPTIONS ABOUT INSTRUCTIONAL MEDIA

The following statements represent various perceptions about instructional media. Indicate by marking (x), the degree to which you agree or disagree with each of the statement.

Positive Perceptions	Strongly Agree	Undecided	Disagree	Strongly Disagree
----------------------	----------------	-----------	----------	-------------------

Instructional media can be used by the teacher:

- | | | | | |
|--|-------|-------|-------|-------|
| 1. To motivate students in the learning process and bring additional details into his teaching. | _____ | _____ | _____ | _____ |
| 2. To reach a greater number of students equally at the same time. | _____ | _____ | _____ | _____ |
| 3. To provide for individual student's learning needs. | _____ | _____ | _____ | _____ |
| 4. To grow professionally by having access to quality instructional materials prepared by other experienced teachers and subject specialists | _____ | _____ | _____ | _____ |
| 5. To reduce his time in lecturing and note-giving | _____ | _____ | _____ | _____ |

Negative Perceptions	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
6. The cost of most instructional media is out of proportion to their educational value.	—	—	—	—	—
7. The personal relationship between the teacher and the student is lost when instructional media are used.	—	—	—	—	—
8. The increased use of instructional media will downgrade the teacher's role in instruction and put him out of work eventually.	—	—	—	—	—
9. Instructional media is not conducive to learning/teaching in most subjects.	—	—	—	—	—
10. The Center for Educational Technology has little or nothing to contribute to instructional improvement in this University.	—	—	—	—	—

SECTION D. PREVIOUS TRAINING IN INSTRUCTIONAL MEDIA

Indicate (x) the level in which you have ever had any previous training and acquired the following skills in instructional media.

Key: GD - Postgraduate degree in Instructional Media
 GC - Postgraduate courses in Instructional Media
 UD - Undergraduate degree in Instructional Media
 UC - Undergraduate courses in Instructional Media
 CC - No previous training at any level.

Skills Acquired During Training	GD	GC	UD	UC	CC
1. Operation of instructional media equipment.	—	—	—	—	—
2. Production of instructional packages	—	—	—	—	—
3. Selection of instructional materials	—	—	—	—	—
4. Management of instructional media	—	—	—	—	—
5. Evaluation of instructional packages.	—	—	—	—	—

SECTION E: UNIVERSITY SUPPORT FOR INSTRUCTIONAL MEDIA

Indicate (x) the frequency of each of the following support which you feel the university is providing to encourage university lecturers to use instructional media in teaching.

Type of Support	Do				
	Very Often	Some- times	not know	Seldom	Never
1. Short courses in instructional media for lecturers	___	___	___	___	___
2. Instructional media-related workshop/seminars for lecturers	___	___	___	___	___
3. Services for the Center for Educational Technology	___	___	___	___	___
4. Grants to individual university lecturers to finance instructional development projects.	___	___	___	___	___
5. Financial sponsorship to university lecturers to participate in instructional media conventions and meetings	___	___	___	___	___
6. Special recognition and reward for lecturers' instructional media creativity.	___	___	___	___	___
7. Departmental Budgetary support for instructional media needs of individual lecturers.	___	___	___	___	___
8. Instructional media related activities accepted as part of the university's criteria for the promotion of lecturers.	___	___	___	___	___

SECTION F: PERCEIVED CONSTRAINTS ON INSTRUCTIONAL MEDIA USE

The following statements represent some of the general constraints or barriers to instructional media use. Instructional media in this case refers to both materials and equipment. Indicate (x) the degree at which you perceive each of the constraints.

Perceived Constraints	Degree of Constraints				
	Major	Moderate	Unde- cided	Minor	None
1. Instructional media are not often available when needed.	—	—	—	—	—
2. Teaching load does not allow enough time to plan to use instructional media.	—	—	—	—	—
3. It takes too much time to select and preview instructional media.	—	—	—	—	—
4. Lack of information about available instructional media.	—	—	—	—	—
5. Lack of instructional media in my subject area	—	—	—	—	—
6. Classrooms are not suitable for instructional media.	—	—	—	—	—
7. Too much red-tape involved in obtaining instructional materials or equipment.	—	—	—	—	—
8. Lack of technical assistance when using instructional media	—	—	—	—	—
9. Lack of training in the use of instructional media.	—	—	—	—	—

SECTION F: PERCEIVED CONSTRAINTS ON INSTRUCTIONAL MEDIA USE

(cont)

Perceived Constraints	Degree of Constraints				
	Major	Moderate	Unde- cided	Minor	None
10. Lack of departmental support to the use of instructional media.	—	—	—	—	—
11. Lack of regular electricity power supply.	—	—	—	—	—

SECTION G: SOURCES OF INFORMATION ABOUT AVAILABLE INSTRUCTIONAL MEDIA.

Indicate (x) the frequencies with which you obtain information about instructional media from the following sources.

Source of Information	<u>Frequency</u>				
	Very Often	Some- times	Do Not Know	Seldom	Never
1. Educational Technology Center Newsletter and other publications.	_____	_____	_____	_____	_____
2. Information supplied by manufacturers or distributors of audio-visual aids.	_____	_____	_____	_____	_____
3. Educational Technology Center's Special Correspondence to faculty members.	_____	_____	_____	_____	_____
4. Correspondence from your Departmental Head or Dean of the Faculty.	_____	_____	_____	_____	_____
5. By talking to your colleagues in the faculty or of similar interest.	_____	_____	_____	_____	_____
6. By talking to other faculty members outside your faculty but who have similar teaching concerns with you.	_____	_____	_____	_____	_____
7. By reading instructional media/technology journals or magazines.	_____	_____	_____	_____	_____
8. By reading Professional Journals in Education	_____	_____	_____	_____	_____

APPENDIX H

LETTER TO THE DIRECTOR,
CENTER FOR EDUCATIONAL TECHNOLOGY,
AHMADU BELLO UNIVERSITY, ZARIA

Division of Instructional
Development and Technology
College of Education
Michigan State University
East Lansing, Michigan 48824

May 22, 1978

The Director
Center for Educational Technology
Faculty of Education
Ahmadu Bello University
Samaru - Zaria
Nigeria

Dear Sir:

I am a faculty member in the Faculty of Education, University of Benin, Benin City, Nigeria. I am currently enrolled in a Doctoral Program in Instructional Development and Technology in Michigan State University, East Lansing, Michigan.

As part of the requirements for completing the Doctoral Degree, I am expected to conduct an original field study and report its findings to Michigan State University in the form of a dissertation.

Since I have been teaching in a Nigerian university, my Doctoral Committee is encouraging me to use my previous experience and potentials to do a study which would be of value to Nigeria's educational development.

Consequently, I have developed and my Doctoral Committee has approved a proposal titled:

"Instructional Media Use by Faculty Members in Ahmadu Bello University, Zaria: A Study of Factors Related to Educational Innovations in a Nigerian University."

I plan to come home to collect the data through questionnaire and interviews. I realize that your university will be closing for the summer vacation at the end of June 1979. Therefore, I plan to be in your campus by June 11, 1979 in order to conduct the survey on faculty members.

I shall count on your co-operation during the period of this study in your campus.

Thank you.

Yours sincerely,


Abraham Inanwa Imogie

APPENDIX I

LETTER TO THE CO-ORDINATOR
(CAMPUS SERVICES) CENTER FOR EDUCATIONAL
TECHNOLOGY, AHMADU BELLO UNIVERSITY, ZARIA

Division of Instructional
Development and Technology
College of Education
Michigan State University
East Lansing, Michigan 48824

May 22, 1978

Alberta Gale Mayberry
Co-ordinator, Campus Services
Center for Educational Technology
Ahmadu Bello University
Samaru - Zaria
Nigeria

Dear Alberta:

I am a faculty member in the Faculty of Education, University of Benin, Benin City, Nigeria. I am currently enrolled in a Doctoral Program in Instructional Development and Technology in Michigan State University, East Lansing.

I have developed and my Doctoral Committee has approved a proposal titled:

"Instructional Media Use by Faculty Members in Ahmadu Bello University, Zaria: A Study of Factors Related to Educational Innovations in a Nigerian University."

You may recall that my cousin, Mr. Saibu Afegbua, of the Ahmadu Bello University Library, (Bindery Division) talked to you about the study sometime ago.

I shall be in your campus in June 1979 to conduct interviews and execute questionnaires in connection with the study. I hope to be there before the university closes for the summer vacation.

I look forward to your co-operation.

Thank you.

Yours sincerely,



Abraham Inanoya Imogie

APPENDIX J
RESEARCHER'S LETTER TO RESPONDENTS

Division of Instructional
Development and Technology
College of Education
Michigan State University
East Lansing, Michigan 48824

June 3, 1979

Dear _____

DOCTORAL DISSERTATION QUESTIONNAIRE

You have been randomly selected to complete the following questionnaire which is designed to collect data for my doctoral dissertation entitled:

Instructional Media Use By Faculty Members in
Ahmadu Bello University, Zaria: A Study of
Factors Related to Educational Innovations in
a Nigerian University

The study is aimed at assessing the extent to which the available instructional media and services provided by the Educational Technology Center, are being utilized by faculty members (lecturers of all grades) at Ahmadu Bello University, Zaria.

The questionnaire will also help us in determining some of the factors influencing faculty members' use of Instructional Media in this university. The findings of the study will provide basis for recommendations for improvements.

By Instructional Media, it is meant both materials and equipment other than the conventional printed materials, chalkboard, photographs, models and objects that can be used in teaching.

Please, kindly complete the questionnaire as independently, objectively, and completely as possible.

Thank you for your co-operation.

Yours faithfully,


Abraham Inanog Imogie

APPENDIX K

LETTER OF INTRODUCTION
FROM DR. BRUCE MILES

MICHIGAN STATE UNIVERSITY

COLLEGE OF OSTEOPATHIC MEDICINE
OFFICE OF THE DEAN - EAST FEE HALL

EAST LANSING • MICHIGAN • 48824

June 5, 1979

TO WHOM IT MAY CONCERN:

This is to certify that Abraham Inanoya Imogie is currently enrolled in the Doctoral Program in Instructional Development and Technology, College of Education, Michigan State University. He came to the United States in June 1977, completed a M.A. degree, applied for and was immediately accepted in the Doctoral Program. I served as his M.A. advisor and continue as Chairman of his Doctoral Committee.

As part of Mr. Imogie's requirement for completing his Ph.D. he must conduct an original field study, report his findings to Michigan State University in the form of a dissertation and defend his research in an oral examination. In view of his experience and status as an educator in Nigeria, it was considered desirable for him to conduct a study in and for the ultimate benefit of his country.

Consequently, Mr. Imogie will soon leave for Nigeria where, during the month of June, he will collect data to be used in his approved field study, "Instructional Media Use By Faculty Members In Ahmadu Bello University, Zaria: A Study of Factors Related To Educational Innovations In A Nigerian University Context."

Following completion of his studies, Mr. Imogie will return to Nigeria. I have been most impressed with his scholarly performance in our program and I am equally confident that he will be an outstanding educator and a credit to this University.

Sincerely,



Bruce L. Miles, Ph.D.
Acting Assistant Dean
College of Osteopathic Medicine

Associate Professor
College of Education

APPENDIX L

DEPARTMENTS AND ACADEMIC FACULTIES
FROM WHICH SAMPLE WAS DRAWN

DEPARTMENTS AND ACADEMIC FACULTIES FROM WHICH SAMPLE
WAS DRAWN

<u>Academic Faculty</u>	<u>Departments/Divisions</u>
1. AGRICULTURE	1. Agronomy 2. Agricultural Economics 3. Rural Sociology 4. Animal Science 5. Crop Protection 6. Entomology 7. Plant Pathology 8. Plant Science 9. Soil Science
2. ARTS AND SOCIAL SCIENCES	1. Economics 2. English 3. French 4. Geography 5. History 6. Nigerian and African Languages 7. Political Science 8. Sociology
3. EDUCATION	1. Education 2. Library Science 3. Physical and Health Education 4. Vocational and Technical Education Center for Educational Technology.
4. ENGINEERING	1. Agricultural Engineering 2. Chemical Engineering 3. Civil Engineering 4. Mechanical Engineering 5. Surveying Engineering
5. ENVIRONMENTAL DESIGN	1. Architecture 2. Building 3. Fine Art 4. Industrial Design 5. Urban and Regional Planning
6. HUMAN MEDICINE	1. Anaesthesia 2. Human Anatomy 3. Chemical Pathology 4. Community Medicine 5. Medicine 6. Haematology 7. Obstetrics and Gynaecology 8. Ophthalmology

Academic FacultyDepartments/Divisions

- | | |
|----------------------------|---|
| | 9. Pediatrics |
| | 10. Pathology |
| | 11. Physiology |
| | 12. Radiology |
| | 13. Surgery |
| 7. PHARMACEUTICAL SCIENCES | 1. Pharmaceutics |
| | 2. Pharmacognosy |
| | 3. Pharmacology |
| | 4. Pharmaceutical Chemistry |
| 8. SCIENCE | 1. Biochemistry |
| | 2. Biological Sciences |
| | 3. Chemistry |
| | 4. Geograophy |
| | 5. Geology |
| | 6. Mathematics |
| | 7. Microbiology |
| | 8. Physics |
| 9. VETERINARY MEDICINE | 1. .Veterinary Anatomy |
| | 2. Parasitology and Entomology |
| | 3. Veterinary Pathology and Microbiology |
| | 4. Veterinary Physiology and Pharmacology |
| | 5. Veterinary Surgery and Medicine |
| | 6. Public Health and Preventive Medicine |

APPENDIX M
COMMITTEE OF DEANS AND DIRECTORS

COMMITTEE OF DEANS AND DIRECTORS
Constituted by the Vice-Chancellor

Terms of reference:

To advise and assist the Vice-Chancellor on all matters affecting the administration of the University, and in particular on:

- a. The application of the regulations governing the condition of services of senior staff;
- b. the appointment of temporary staff;
- c. recommendations to be made to Senate concerning the grant of study leave;
- d. the grant of study leave;
- e. the award of post-graduate scholarships;
- f. the attendance of University staff at conferences; and
- g. to formulate recommendations to be submitted to Council, Senate or other University Committees, and to consider any matters referred to it by such bodies.

Composition:

Ex-officio members: Vice-Chancellor
: Deputy Vice-Chancellor
: Provost for Agriculture and Veterinary Medicine.

Deans of Faculties (as of October, 1978)
: Administration
: Agriculture
: Arts and Social Sciences
: Education
: Engineering
: Environmental Design
: Law
: Medicine
: Pharmaceutical Sciences
: Science
: Veterinary Medicine

Directors of Institutes (as of October, 1978)

- : Administration
- : Division of Agricultural Colleges
- : Agricultural Research
- : Education
- : Health
- : National Animal Production Research
Institute
- : Agricultural Extension and Research
Liaison Service
- : Adult Education and Extension Services
- : Educational Technology Center
- : Center for Islamic Legal Studies
- : Principal, School of Basic Studies

Source: Calendar and Staff Director 1978/79, Ahmadu Bello
University, Zaria, p. 141

BIBLIOGRAPHY

BIBLIOGRAPHY

- Abedor, Allen J. and Sacks, Stephen G. "The Relationship Between Faculty Development (FD), Organizational Development (OD) and Instructional Development (ID): Readiness for Instructional Innovation in Higher Education", Instructional Development: The State of the Art (ed.) Ronald K. Bass, et.al. (Columbus, Ohio: Collegiate Publishing, Inc., 1978).
- Ahmadu Bello University, Zaria. Centre for Educational Technology: Annual Report 1977/78, May, 1978.
- Ahmadu Bello University, Zaria. Calendar and Staff Directory 1978/79, (Zaria: Ahmadu Bello University Press, Ltd, 1979).
- Akpata, Tayo. "Take-Over of Schools," Take-Over of Schools In Mid-Western Nigeria (Benin City: A Midwestern Nigerian Government Publication, 1973).
- Anderson, Robert H. "Organizational and Administrative Changes Needed in Schools and Colleges in Order for New Techniques to Effectively Improve Instruction," Sidney G. Tickton (ed.), To Improve Learning, Volume II, (New York and London: R.R. Bowker Company, 1971).
- Angulu, M.S., "Admissions Into Nigerian Universities 1978/79 Session: JAMB Speak Out", New Nigerian (Newspaper), Monday, March 12, 1979.
- Armsey, James W. and Dahl, Norman C. (eds.), An Inquiry into the Uses of Instruction Technology (New York: A Ford Foundation Report, 1973).
- Atwood, M.S., "Small-scale Administrative Change: Resistance to the Introduction of a High School Guidance Program", Innovation In Education, (ed.) by Matthew B. Miles (New York: Teachers College, Columbia, University, 1964).
- Association for Educational Communications and Technology (AECT), Audiovisual Processes in Education: Selected Readings from AV Communication Review (New York: Johnson Reprint Corporation, 1971).

- Association for Educational Communications and Technology (AECT), Educational Technology: Definition and Glossary of Terms, Vol. I (Washington, D.C.: AECT Task Force on Definition and Terminology, 1977).
- Barson, John. A Procedural and Cost Analysis Study of Media in Instructional Systems Development, Parts A and B., U.S. Department of Health, Education and Welfare Report, 1965.
- Bergquist, William H. and Phillips, Steven R., "Components of an Effective Faculty Development Program," The Journal of Higher Education, Vol. XLVI, Number 2, (April, 1975).
- Berkman, Dave. "The Learning Industry and ITV," Educational Broadcasting Review, Volume V, Number 3, June, 1971.
- Brown, James W. and Thornton, Jr., James W., New Media In Higher Education (Washington, D.C.: Association for Higher Education and Department of Audiovisual Instruction, NEA, 1963).
- Carnegie Commission on Higher Education Report and Recommendations, The Fourth Revolution: Instructional Technology in Higher Education (New York: McGraw Hill, 1972).
- Carpenter, C.R., "A Commentary on Television Research, 1948-1960", Newer Educational Media (University Park: Pennsylvania State University, 1961).
- Carpenter, C.R. and Greenhill, L.P., "Providing the Conditions for Learning: The New Media," Higher Education (ed) Samuel Baskin (New York: McGraw-Hill, 1965).
- Chu, Godwin C. and Schramm, Wilbur. Learning from Television: What the Research Says, Revised in 1975 with Introduction by Monty Stanford (Washington, D.C.: National Society of Professionals in Education, 1967).
- Committee on Utilization of College Teaching Resources, Better Utilization of College Teaching Resources (New York: Fund for the Advancement of Education, 1959).
- Commission on Instructional Technology, To Improve Learning: A Report to the President and the Congress of the United States, (Washington, D.C.: United States Government Printing Office, 1970).
- Dale, E. Audio-Visual Methods in Teaching, Revised Edition (New York: The Dryden Press, 1954).

- Davis, Robert H., "A Behavioral Change Model With Implications For Faculty Development," The International Journal of Higher Education and Education Planning, Vol. 8, Number 2, March, 1979 (Amsterdam: Elsevier Scientific Publishing Company).
- Davis, Robert H. et al, Commitment to Excellence: A Case Study of Educational Innovation (Michigan State University: Educational Development Program, 1976).
- Diamond, Robert M. "Academic Redesign In Higher Education: A Matter of Survival", Audiovisual Instruction, Vol. 19, Number 10, (December, 1974).
- Diamond, Robert M. et al, Instructional Development for Individualized Learning in Higher Education (Englewood Cliffs, N.J.: Educational Technology Publications, Inc., 1975).
- Dietrich, John E and Johnson, F. Craig. "A Catalytic Agent for Innovation in Higher Education," Educational Record Vol. 48, (Summer, 1967).
- DuMolin, James R. "Instructional Television Utilization in the United States," Memorandum No. 71-6, St. Louis, Washington University, October, 1971.
- Erickson, Calton W.H., Administering Instructional Media Programs (New York: Macmillan Publishing Company, Inc., 1968).
- Evans, Richard I. The University Faculty and Education Television: Hostility, Resistance and Change, (Title VII Report, Grant No. 741015, University of Houston, 1962).
- Evans, Richard I. Resistance to Innovation in Higher Education (San Francisco: Jossey-Bass Publishers, Inc., 1970).
- Fafunwa, A. Babs. A History of Nigerian Higher Education (Lagos: Macmillan and Company (Nigeria) Ltd, 1971).
- Federal Republic of Nigeria. National Policy on Education (Lagos: Federal Ministry of Information, Printing Division, 1977).
- Federal Republic of Nigeria. Third National Development Plan 1975-80, Vol. 1 (Lagos: The Central Planning Office, Federal Ministry of Economic Development, 1975).
- Gaff, Jerry G., Toward Faculty Renewal: Advances in Faculty, Instructional and Organizational Development (San Francisco: Josey-Bass, Inc., Publishers, 1975).

- Gallaher, Jr., Art. "The Role of the Advocate and Directed Change," Media and Educational Innovation, (ed.) Wesley C. Meierhenry (Lincoln, Nebraska: The University of Nebraska Extension Division and the University of Nebraska Press, 1964).
- Good, Carter V. (ed.) Dictionary of Education, prepared under the auspices of Phi Delta Kappa (New York: McGraw-Hill Book Company, Inc., 1959).
- Havelock, Ronald G., The Change Agent's Guide to Innovation in Education (Englewood Cliffs, N.J.: Educational Technology Publications, Inc., 1973).
- Hoban, Charles F., et al, Instructional Film Research 1918-1950, Technical Report (New York: Special Devices Center, 1950).
- Hoban, Charles F., "Dial "T" Tryst", Media and Educational Innovation, (ed.) Wesley C. Meierhenry (The University of Nebraska: The University of Nebraska Extension Division and the University of Nebraska Press, 1964).
- Hubbard, Richard D., A Study of the Reasons Given for the Limited Use of Certain Audio-Visual Materials at Syracuse University, Unpublished Doctoral Dissertation (Syracuse, New York: Syracuse University, 1960).
- International Council for Educational Development. "Instructional Broadcasting: A Design for the Future", A Paper prepared for the Corporation for Public Broadcasting, January, 1971.
- Johnson, Jenny K. and Agun, Ibitayo. "Educational Technology in Nigeria", Selected Monographs from International Window: Audiovisual Instruction 1978-79 (New Orleans: 1979 AECT Convention)
- Knowlton, D.C. and Tilton, J.W. Motion Pictures in History Teaching, (New Haven: Yale University Press, 1929).
- Macomber, F.G., et al, Experimental Study in Instructional Procedures, Report No. 2 (Oxford, Ohio: Miami University, 1957).
- Mayhew, Lewis B. "A Summing Up", New Media in Higher Education, (ed.) James W. Brown and James W. Thornton, Jr. (Washington, D.C.: Association for Higher Education and the Division of Audiovisual Instructional Service of the National Education Association, 1963).

- McIntyre, Kenneth M. A Study to Determine Specific Sources of Resistance to the Use of Audiovisual Materials by College and University Teachers and the Development of Procedures for Overcoming the Barriers to Optimum Use, Title VII (A) Final Report, Grant No. 731052. (University of North Carolina, 1963). Chapel Hill.
- McKeachie, Wilbert J. "Higher Education", Peter H. Rossi and Bruce J. Biddle, (eds.) The New Media and Education (New York: Doubleday and Company, Inc., 1967).
- Michael, Donald. "Inhibitors and Facilitors to the Acceptance of Educational Innovations", Inventing Education for the Future (ed.) Warner Z. Hirsh (San Francisco: Chandler Publishing Co., 1967).
- Michigan State University, "Observations and Recommendations on the Development and Use of Learning Resources at Michigan State University," A Report of the Provost Prepared by the Learning Resources Advisory Panel (March, 1962).
- Miles, Matthew B., "Educational Innovation: Some Generalizations", Media and Educational Innovation (ed.) Wesley C. Meierhenry (The University of Nebraska: The University of Nebraska Extension Division and the University of Nebraska Press, 1964).
- Miles, Matthew B. (ed.) Innovation in Education (New York: Bureau of Publications, Teachers College, Columbia University, 1964).
- Miller, N.E., "Graphic Communication and The Crisis In Education," in Audio Visual Communication Review, Vol. 3, No. 2, (December, 1957).
- National Special Media Institutes. Instructional Development Institute Glossary (Washington, D.C.: 1972).
- Norberg, Kenneth D., "Some Implications Drawn from Papers Read at the Symposium", Media and Educational Innovation (ed.) Wesley C. Meierhenry (Lincoln, Nebraska: The University of Nebraska Extension Division and the University of Nebraska Press, 1964).
- Overseas Liaison Committee. Future Nigerian-U.S. Linkages in Higher Education (Washington, D.C.: American Council on Education, 1977).

- Owuna, Sunday. The Development of Educational Technology at Ahmadu Bello University, Zaria (A Dissertation submitted in partial fulfillment of the Master of Education (M.Ed.) degree in the Department of Education, University College, University of Wales, Cardiff, 1977).
- Page, G. Terry, et al (eds) International Dictionary of Education (London: Kogan Page Publishing Company, 1977).
- Rogers, Everett M., Diffusion of Innovations (New York: The Free Press, 1962).
- Rogers, Everett M. and Eichholz, Gerhard. "Resistance to the Adoption of Audiovisual Aids by Elementary School Teachers: Contrasts and Similarities to Agricultural Innovations," in Innovation in Education ed by Matthew B. Miles (New York: Teachers College, Columbia University, 1964).
- Seibert, Ivan N. et al (eds.) Educational Technology: A Handbook of Standard Terminology and a Guide for Recording and Reporting Information About Educational Technology (Handbook X) (Washington, D.C.: U.S. Department of Health, Education and Welfare, 1975).
- Silis, David L. (ed.) International Encyclopedia of the Social Sciences, Vol. 1 and 3 (USA: The Macmillan Company and The Free Press, 1968).
- Travers, Robert M.W. (ed.) Research and Theory Related To Audiovisual Information Transmission, University of Utah, Bureau of Educational Research, Interim Report, July, 1964.
- Twyford, Loran C. Jr., "Educational Communications Media," in Encyclopedia of Educational Research, 4th Edition (Toronto, Ontario: Collier-Macmillan Canada, Ltd., 1969.).
- UNESCO, The Development of Higher Education in Africa, A Report of the Conference on the Development of Higher Education in Africa, Tananarive, September 3-12, 1962 (Paris, UNESCO, 1963).
- United States Statutes at Large, Vol. 72. National Defense Education Act of 1958 (Washington, D.C.: U.S. Government Printing Office, 1959).
- United States Statutes at Large, Vol. 79. Higher Education Act of 1965 (Washington, D.C.: U.S. Government Printing Office, 1966).

Walker, W.G. et al, (eds.) A Glossary of Educational Terms: Usage In Five English Speaking Countries (Queensland, Australia: University of Queensland Press, 1973).

Zaltman, Gerald and Duncan, Robert. Strategies for Planned Change (New York: A Wiley Interscience Publication, 1977).

Zander, Alvin. "Resistance to Change--Its Analysis and Prevention," Planning of Change. (ed.) Warren G. Bennis, Kenneth D. Benne and Robert Chinn (New York: Holt, Rinehart and Winston, 1961).

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