THE ROLE OF EDUCATIONAL TECHNOLOGY IN NATIONAL EDUCATIONAL OBJECTIVES IN SELECTED NIGERIAN UNIVERSITIES

BY

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E.A.S.

TABLE OF CONTENTS

Chapter		Page
I.	INTRODUCTION	1
	Statement of the Problem	10
	Research Questions	10
	Major Assumptions	11
	Definitions	11
	Methodology	12
	Procedure	14
	Justification of the Study	16
	Organization of the Study	17
II.	LITERATURE REVIEW	20
	National Educational Objectives	20
	Philosophy of Nigerian Education	22
	Objectives of Primary and Secondary Education	23
	Summary	35
III.	OPEN LEARNING/DISTANCE EDUCATION	37
IV.	CASE STUDIES OF EDUCATIONAL TECHNOLOGY IN SELECTED NIGERIAN UNIVERSITIES	54
	Introduction	54
	Procedure	54
	Findings	55
	Structural Organization	55
	The Nigerian University	56
	The Structure of Educational Technology	64
	Objectives	66
	University Enrollment	69
	Personnel	70
	Finance	76
	Space	78
	Equipment	80
	Summary	81

Table of Contents (Continued)

Chapter (IV continued)	Page
A Comparison of National Objectives and Programs in Educational Technology	82
Implication of Objectives for Educational Technology	86
Do Programs Assist in Implementing National Objectives?	88
Conclusion	90
V. FACTORS AFFECTING THE DEVELOPMENT AND USE OF EDUCATIONAL TECHNOLOGY IN NIGERIAN UNIVERSITIES	91
Organizational Structure	92
Infrastructural Constraints	95
Reward System	95
Personnel	99
Finance	101
Space	103
Instructional Resources	104
Professional Attitudes	105
University Enrollment	109
Government Policy	110
Summary	113
VI. THE ROLE OF EDUCATIONAL TECHNOLOGY IN ACHIEVING NATIONAL EDUCATIONAL OBJECTIVES IN NIGERIAN UNIVERSITIES	116
The New National Policy: A Re-Thinking and Restructuring of the Nigerian Educational System	121
An Educational Approach: Technology and the Implementation of National Objectives . . .	129
Open Learning/Distance Education	129
Features Relevant to Nigeran Education . .	133
Specific Features of the Approach Defined .	134
Educational Technology Strategies for Planned Change	146
Implications for Primary and Secondary Education	153
Summary	155

Table of Contents (Continued)

Chapter		Page
VII.	SUMMARY AND CONCLUSION	157
	Summary	157
	Conclusions	162
	Recommendations for Further Research	164
REFERENCE NOTES		166
REFERENCES		168
ADDITIONAL BIBLIOGRAPHY		172
APPENDIX		178
	Appendix A: Questionnaire and Coded Responses	179

LIST OF FIGURES

Figure		Page
1.	Nigerian University Structure	57
2.	Case Study 1--Ahmadu Bello University	58
3.	Case Study 2--University of Lagos	59
4.	Case Study 3--University of Nigeria (Nsukka) .	60
5.	Case Study 4--University of Benin	61
6.	Case Study 5--University of Ibadan	62
7.	Case Study 6--University of Ife	63
8.	Scope of Educational Technology Programs . . .	68
9.	Comparative Analysis of Enrollment Figures 1973/74 and 1978/79	71
10.	Mean Number of Employees According to Scope, Organization and Function	72
11.	Classification of Media Personnel	74
12.	Job Performance Analysis	75
13.	Financial Allocations 1977/78 and 1978/79 Academic Years	77
14.	Life Long Education	123
15.	National Regional Open Learning System	138
16.	The Structure of Educational Technology	140

CHAPTER I

INTRODUCTION

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University education in Nigeria as seen in the total context of education, has its beginnings in the British colonial administration of the 19th Century. The initiative for education in Nigeria, however, was begun by missionaries as a result of the slave trade in West Africa, long before the British colonized the country in 1861 (Fafunwa, 1971).

As late as 1926, mission activities were a dominant force in all levels of education. Although universities were to develop approximately twenty years later, Nigerians had begun receiving university education since the early 1800s in English universities. The Phelps-Stokes Survey (1925) of educational conditions in West Africa recommended a comprehensive educational system from primary to university. This was the first time that the need for education was expressed in writing.

The development of higher education in Nigeria provides a historical background to the development of university education. The opening of Yaba College (1934) in Lagos, mainly for technical education, was a significant factor in this development. In 1943, the Elliot and Asquith Commission, appointed to look into higher education in West Africa, recommended that a university college be established in Nigeria at Ibadan, and that it should be closely linked to

a British university. Providing this necessary link between the colonial university and the mother country was the Inter-University Council established in 1946.

This "linkage" policy became an accepted feature of universities in Africa. Eric Ashby (1964) put it succinctly:

> The Asquith Report was Britain's blueprint for the export of universities to her people overseas. In the eyes of those who have used the blueprint over the last twenty years, it has become more than a mere statement of government policy: it has been elevated to the dignity of a doctrine. Policy which should be a convenient working hypothesis, became hardened into dogma, resistant to criticism and change. People talked of the "Asquith Doctrine" and referred to university colleges in Africa as "Asquith Colleges." (p. 19)

There was never any question but that what was good for the Englishman was also good for the African. The University College of Ibadan was opened in 1948, with the same philosophy and curriculum as the universities in England. London University awarded degrees for this institution until 1962, when it became self-governing.

The wave of African nationalism that swept the continent in the 1950s resulted in a direct challenge concerning the purpose of university education in Africa. It was the expressed feeling of Africans that the university curriculum should reflect African culture and values (Okafor, 1971).

The Harlow and Thorp recommendations in 1949 resulted in the opening of three branches of the college of arts, science and technology in 1952, 1954, and 1955, respectively (Fafunwa, 1971). These later became the nuclei of the new

universities of Ahmadu Bello in the North, Ife in the West, and Nigeria in the East. These colleges were originally set up as institutes to provide the needed skills in industry and commerce.

Nnamidi Azikiwe defined the British tradition and founded the University of Nigeria at Nsukka in 1960. His ideas were influenced largely by the American educational system as well as by the need to make university education relevant to African society. The University of Nigeria, similar to the American land-grant college, emphasized agriculture, technical and commercial subjects, rather than theory and philosophy. Just as the first Morrill Act in 1862 represented a turning point in the development of American education, likewise Nsukka symbolized a radical break with the British tradition. Ike (1976) states:

> It [Nsukka] was the first of the "independence era" universities, conceived as a result of Nigerian initiative rather than a part of British colonial policy for her overseas territories. These "independence era" universities carried the imprint of independence. In keeping with the national foreign policy of non-alignment, these universities were free to shop for ideas and support from any corner of the globe, not only from the United Kingdom. American ideas which had, hitherto, been discredited in the country, penetrated nearly every facet of Nigerian education. (p. 16)

The Ashby Commission (officially called the Committee on Post-School Certificate and Higher Education) of 1960 was set up to look into the country's educational needs in post-secondary and higher education over a period of twenty

years. It was significant for several reasons: (a) Nigerians were involved in their own investigation on higher education for the first time, (b) a comprehensive review of higher education was conducted by a team of experts from various countries, and (c) high-level manpower needs were assessed in terms of the education required to meet these needs.

The Ashby Commission emphasized that "the education system should not be controlled by manpower requirement needs, but this should be given prominence in a developing country" (p. 64). The Commission further recommended the establishment of three new universities to help meet the educational and manpower needs of the country.

The universities were established in the following order: University of Nigeria, Nsukka (1960); Ahmadu Bello University, Zaria (1962); and the University of Ife, Ife (1962). Ife was not recommended by the Commission but was established by the Government of the Western Region as a regional university. The University of Lagos was established in 1962 at Lagos. A more recent university was established in Benin City, the University of Benin (1970).

The country's six universities, however, were not considered adequate to cope with the rapidly expanding student population and the urgent need for trained manpower in all sectors of the economy. Consequently, seven new universities have been created. These were immediately given the

status of university as opposed to the university college idea (now considered a relic of the colonial past). The new universities include those of Ilorin, Port Harcourt, Maiduguri, Sokoto, Jos, Calabar, and Kano. These new institutions became operative as universities as of September, 1977.

Three distinct groups, according to Fishel (1969), could be recognized in the Nigerian academic circle: the traditionalist, specialist, and generalist. Traditionalists "endorse the Oxbridge curricula with their theoretical and literary emphasis" (p. 22). The specialists, on the other hand, emphasize the role of the university in national development and nation building. The third group, the generalists, has taken neither side, but instead emphasizes the need for greater recognition of the social sciences and teacher education within the context of an African studies orientation.

The controversy over the role of the university in Nigeria continues today. A number of themes can be identified concerning this issue, namely, (a) relevance to the cultural and social mileu, (b) manpower training, (c) quality education, and (d) equality of education. These are problems which are not unique to Nigeria, but are, indeed, part of a world educational crisis. Coombs (1968) states:

> Because of certain local conditions, the crisis varies in form and severity from one country to the next. But its inner lines of force appear in all nations alike, whether they are old nations or new, rich or poor, whether they have stable institutions or are struggling to build them in defiance of the heavy odds. (p. 4)

Over the years this controversy has prompted the federal government, specialized organizations and individual academicians to try to establish a particular philosophy for education and to identify specific objectives for education as a whole and university education in particular. However, the very fact that these are separate undertakings aimed at achieving the same objectives indicates that there has been no consensus and nationally accepted statement to this effect. The new National Policy on Education (1977) comes closest to achieving this objective.

The National Policy on Education, a document published by the federal government, is the first national education policy to be issued. It outlines the philosophy and goals for the nation's educational system. The concern for a particular philosophy and specific objectives for education prompted the government to convene a seminar in 1973 of distinguished educational experts to consider the matter. Representatives from universities, external agencies, government ministries, organizations in the public and private sectors, religious groups, etc., met to formulate the basis of this new policy. The final product, though modified by the passage through government organs, largely represents the efforts of the above representative group. An Implementation Task Force has been set up, comprising similar representatives as those above, to draw up the necessary guidelines to assist institutions, organizations and agencies in the

implementation of the policy.

The various crises facing Nigerian universities, and indeed universities in all developing countries, has caused educators a great deal of concern. During the last five years enrollment has doubled in all universities, academic staff has not increased proportionally, and finances have been drastically cut. There is also a shortage of houses for both staff and students, and classrooms are too few and overcrowded. The Third National Development Plan, 1975-80 (1975), projected an enrollment figure for all universities by the end of the period of 53,000. This figure had already been reached as of 1977. The head of state had this to say:

> If projections of undergraduate enrollment followed the trend, the figures might rise to about 60,000 by the end of the current plan period . . . although the rise was impressive, it did not detract from other stark realities such as ever-increasing demands for university places, the need to re-examine entry requirements and the need to pay due attention to staff recruitments and the provision of adequate physical facilities. (Sunday Sketch, Note 1)

The increased enrollment is not, however, representative of the total number that apply to universities. For example, the University of Ife, out of 60,346 applicants for 1977 could afford to admit only 2,000 (Aboyade, Note 2). Departments have been requested to maintain the same staff strength as for last academic session. The vice chancellor was reported as saying that departments "should not employ any new staff except under special conditions" (Daily Times,

Note 3.) The University of Nigeria, Nsukka, had to reduce its intake by approximately 200 for the 1977-78 academic session, and cancel its program of student sponsorship altogether.

New Developments

In an attempt to solve some of the problems faced in universities emphasis has been increasingly placed on the use of technology. Aspects of educational technology employed by other countries have been studied and in many cases adapted to local conditions. International organizations such as UNESCO, USAID, CEDO, Carnegie Corporation, Inter-University Council, and various universities have played significant roles in fostering educational technology projects in Nigerian universities. Other innovations in audio-visual media and educational technology have been started by Nigerian universities themselves, after studying such applications abroad.

Such attempts have been aimed at improving the quality of instruction through the application of technology to the instructional process. A number of levels can be identified for the operation of instructional technology in universities. At the service or media production level, several innovations have been started usually on a campus-wide basis to provide instructional materials as requested for classroom use. The curriculum planning or instructional development

level is less developed with a few programs beginning to emerge which could have an impact on the design and development of curriculum, but at present are largely of a service nature (i.e., providing courses towards a general education degree but with little influence in the determination of the overall university curriculum). The planning of instructional systems, a third level, the need for which has been suggested in the National Policy on Education, offers a future possibility for a truly integrative approach to technology of education. Two examples can be cited which are utilizing an instructional systems approach. The development of open learning/distance education systems at the University of Lagos, and the National Teachers' Institute (NTI) in Kaduna, Nigeria, represent attempts to plan instructional system around specific needs. The University of Lagos has sought to expand higher education services to provide greater access in response to increasing demand. Its pilot program, still in operation, concentrates initially on selected subject areas with the possibility of later expansion. NTI focuses on in-service education by upgrading some of the country's badly needed primary teachers. Its instructional system of distance education is, therefore, designed to achieve this objective.

Statement of the Problem

The nature of university education in Nigeria has fostered the need for clearly defined educational objectives in the achievement of national goals. The development of educational technology within this perspective raises the question of its role in the achievement of such goals. This study, therefore, seeks to ascertain if existing programs in educational technology are being used to achieve national educational objectives.

Research Questions

The following research questions are posed for data collection and analysis of findings.

1. What are national objectives for university education?
2. What is the nature of existing programs of educational technology?
    a. Is there evidence of integration into the total university curriculum?
    b. How does the program fit within the overall structure of the university?
    c. What are the infra-structural supports (i.e., staff, space, equipment, and finance) for effective and successful implementation of programs?

d. What are the constraints to achieving success?

3. Do educational technology programs assist in implementing national objectives?
4. If programs do not assist in implementing objectives, how could they be used to foster such implementation?

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Major Assumptions

The following assumptions are made:

1. University education should be relevant to national needs;
2. Education alone cannot change the course of development;
3. Educational technology has the potential of assisting to achieve specified national objectives;
4. Adequate financial support will continue to be given to universities.

Definitions

The terms equal access and greater access have been used in this study in the discussion of open learning/ distance education. These terms may be defined in other works in a different manner, but for the purpose of this study their meaning should be limited to the following definitions.

Equal access. Refers to a deliberate attempt by education authorities to provide various groups within the society with an equal opportunity to take advantage of higher education. This kind of policy addresses itself to existing differences in educational, economic, and social backgrounds.

Greater access. Refers to making higher education available to a larger percentage of the population through such means as open learning/distance education, correspondence, and extra-mural studies. Those persons who would normally be unable to attend a university due to distance, employment, health, previous educational background or family status may be given access under this policy.

Methodology

The study was conducted using the case study method. The case study method is designed to systematize the evidence on the nature of educational technology programs and to provide insight to aid decision making. It is specifically used in this study to explore, describe and analyze those factors affecting the development and use of educational technology in universities, their organization and operation. This method involves a period of stay at the project, organization or institution under study and the collection of data through such means as documents, interviews, observations, and analysis. The major

characteristic of a case study is that it seeks to explain a decision or a set of decisions, examining why they were taken, how they were implemented, and with what results. Advantages of the case study include its ability to enter a situation after the fact and cover a large sweep of time, thus providing useful information on development and adding considerably to perspective. It also allows one to obtain a wholistic view rather than fragmented parts of the whole.

Six universities were chosen as case studies based on the following criteria: (a) an academic program or courses offered in educational technology, (b) some facility for the design, production and distribution of instructional resources, (c) program, courses and services should have been established for three or more years, and (d) a student population of 3,000 or more. Criterial statements (a) and (b) have been developed based on a definition of educational technology as advanced by Derek Rowntree (1974), Henri Dieuzeide (1971), and Sidney Tickton (1970). These authors emphasize the instructional problem-solving view of educational technology which focuses on designing instructional systems, curriculum development, and resource production. Statement (c) gives consideration for the amount of time required for an institution to have matriculated and graduated a group of students. The last criterial statement derives from an analysis of cost-benefit studies as reviewed by E. Caffarella (1974), indicating a relationship between

audience size and cost. In addition, federal government statistics indicate a substantial increase in financial allocation for those institutions with a student population of 3,000 and over. Universities fulfilling the stated criteria include the Universities of Ahmadu Bello, Benin, Ibadan, Ife, Lagos and Nsukka.

Procedure

Ten to fourteen days were spent at each institution employing the case study participant-observer technique. Observation criteria were developed from the stated operational definition of educational technology and the guidelines of Johnson (Note 4) and George (Note 5). Johnson's draft directory provided information on what should constitute an academic program in educational technology through its compilation of 32 university programs in the United States. Guidelines on the design of media facilities (i.e., what should be available given the objectives and audience size) were obtained from George's worksheet. These documents were used as broad general criteria in observing existing programs. Observation centered on elements of infrastructural support and actual functions. Criteria for infrastructural support included (a) the number of personnel in relation to the scope of the program and the actual work to be done, (b) the adequacy of space in relation to functions carried

out, and (c) the nature and amount of equipment to facilitate program operations. Functions were observed by indicating those things which actually occurred during the course of the visit in specific areas of teaching, media production, consultation and on-going research as evidenced through proposals or reports.

Sixty-one interviews were conducted with administrative, production, technical and academic personnel involved in educational technology. A questionnaire (see Appendix A for instrument and coded responses) was used as the basis of interview covering the areas of media production, curriculum design and development, and instructional systems planning. The instrument was validated using a sample of 10 people from the University of Ife. A fixed procedure was used for each interview. Each interviewee was asked to read the entire instrument before attempting to answer questions. Items on the questionnaire were read aloud by the interviewer to which the interviewee responded in writing. Additional questions related to those on the instrument were also posed to the interviewee to gain further insight into areas of operation and organization. Relevant documents were also collected from each university and analyzed concerning student admission and enrollment, academic and professional staffing, information on the operation of educational technology programs, budget information, objectives and structural organization. National objectives were used as the

basis for comparative analysis of national goals and the actual functions of educational technology programs. National objectives have specific implications for the use of educational technology. These implications were the guiding principles in making the necessary comparisons.

Data from case studies are presented in a comparative nature to obtain an overall wholistic view of educational technology and to ascertain relationships rather than fragmented descriptions of each institution.

The study therefore:

1. Identifies and assesses national objectives for university education;
2. Ascertains the nature of existing programs in educational technology at selected universities;
3. Compares national objectives and programs in educational technology using objectives and functions as a means of comparison;
4. Suggests means of harmonizing educational technology with national objectives.

Justification of the Study

The study:

1. Attempts to contribute to the development of a body of literature in the field of Educational Technology in Nigeria and about Nigeria abroad;

2. Aims at providing information concerning existing programs of educational technology which should be useful in future planning for Nigerian universities.

Organization of the Study

The study is organized into seven chapters. Chapter I provides a background to and statement of the problem. It discusses the development of university education in Nigeria and the various crises precipitated therein. It also analyzes the issues concerning the role of the university in Nigerian society indicating the need for clearly defined objectives. The application of technology to education is discussed looking at the various levels of operation.

Chapter II reviews the literature on the various sources on national educational objectives emphasizing the need for relevance, analyzing the obstacles to the development of objectives, and relating the specific focus and contribution of each source. National objectives are specified using the National Policy on Education as the criterion for assessment. Possible means of achieving national goals through the application of an open learning approach incorporating educational technology are surveyed.

Chapter III presents a discussion on open learning/distance education. Various examples from different parts of the world are analyzed in terms of their organization and the

objectives which they are designed to achieve. Characteristics of open learning are identified.

Chapter IV is presented in two parts. Part one presents the findings from case studies in educational technology which are classified as follows: (1) the organizational and administrative procedure for the implementation of educational technology, (2) program objectives, indicating the specific function and scope, (3) university enrollment as it affects the development of educational technology programs, and (4) those infrastructural factors such as personnel, finance, space, equipment in terms of their adequacy towards the support of educational technology operations. Part two is a discussion comparing objectives and educational technology programs indicating the degree of harmonization.

Chapter V analyzes those factors responsible for the development and present status of educational technology in universities. The structure of the Nigerian university, together with its inherent infrastructure, poses an overall threat to such development. In addition, the influence of professional attitudes, university enrollment and government policies are assessed.

Chapter VI discusses a role for educational technology as an integral part of university education. Such a role is designed to facilitate the achievement of national goals. The importance of planning and implementing a change strategy is emphasized with due consideration to possible social,

environmental and psychological barriers to change. Implications for primary and secondary education are analyzed.

Chapter VII summarizes the major findings of the study and draws conclusions which are significant to the development of an integrated use of educational technology. Recommendations are made based on thesis findings and suggestions for further research are given.

CHAPTER II

LITERATURE REVIEW

National Educational Objectives

The question of the relevance of Nigerian universities is a long standing issue. According to Fafunwa (1971), "by 1952, the Nigerian press was extremely vocal on the question of relating higher education to the needs of the Nigerian society and a number of educators were also pressing for change" (p. 271). After independence in 1960, the London University degree which was being awarded at Ibadan and the curriculum of the same came under direct scrutiny and criticism. A new era was beginning and the period of direct "transplantation" was over. Ike (1976) explains that "by the time Nigeria attained independence in 1960, it was no longer expedient, for political and other reasons, to transplant university models from England to Nigeria. Political freedom also conferred on Nigeria the freedom to develop the Nigerian university rather than the English university located in Nigeria" (p. 22). Most African universities are considered "monuments to independence."

The concept of defining educational objectives is indeed relatively new. Several attempts were made in the 1960s to formulate a consensus among African countries as to what an African university should be, as well as to foster cooperation

between countries on issues relating to higher education. A conference was organized in Khartoum, Sudan, in December, 1960, by the Economic Commission for Africa (ECA) to encourage cooperation between African states in higher education. The UNESCO conference of 1962, on the development of higher education in Africa, held in Tananarive has perhaps had the greatest single impact on the development of higher education in African countries. This conference focused on the type of higher education curriculum suitable "to the specific conditions of African life and development." In addition, it also dealt with problems of organization, administration and finance within the context of a national policy (UNESCO, 1963, p. 4).

A number of obstacles to the development of objectives can be cited. The policy of "special relationship" and later "sponsorship" of African universities was a definite barrier to this development, since the objectives of the African university in the case of "special relationship" would be those of the colonizing country. The "special relationship" policy corresponds to the period of "direct transplantation" of British universities in Nigeria and other countries. Ibadan is the only university in Nigeria to have developed in this manner. However, new universities created in the 1960s were not totally free from these ties. "Sponsorship," recommended by the Ashby Commission, replaced the "special relationship" policy. The new universities, developed as a

result of the Commission's recommendations were, therefore, encouraged to choose one of the older, more established universities to act as their sponsors. The benefits accruing to new universities from this arrangement would include (a) ease of attracting foreign staff and (b) international recognition of the university and its degrees. As Ike states very emphatically:

> The emphasis of the Commission appeared to have been more on the benefits to be derived from apprenticeship to an overseas university of prestige than in the definition of the objectives of a Nigerian university and the development of appropriate curriculum. (pp. 24-25)

The first attempt to define objectives as well as the overall philosophy for education in Nigeria came in 1969. This National Curriculum Conference should represent a milestone in Nigeria's educational history. The conference objectives were to identify national goals for all levels of education that would reflect the needs, values and aspirations of the society as well as to provide guidelines on the type of curriculum considered appropriate.

Recommendations emanating from the conference included those on the philosophy and objectives of education which are summarized below:

Philosophy of Nigerian Education

The consensus reflected the belief that education should (a) emphasize the worth and development of the individual,

(b) provide to all children equality of opportunity, and (c) be functional and geared toward progress.

Objectives of Primary and Secondary Education

The dual objectives of primary and secondary education can be attributed to two factors. Such education is often terminal for many children and its content should, therefore, reflect this phenomenon. Secondly, it is also geared toward preparation for the next level of education. The objectives for primary education are thus stated: (a) prepare children for life and (b) give those with the necessary background the opportunity to proceed to secondary school.

The educational objectives for secondary education are thus stated: (a) preparation for life and (b) preparation for higher education.

Reflected in the above statements concerning primary and secondary education is the value placed on university education. The system is geared toward the university (i.e., providing university gradutes).

The objectives of university education are stated:

1. Participate in national development through its various faculties;
2. Develop and transmit the cultural heritage within the context of world culture;
3. Provide intellectual leadership;
4. Develop national consciousness;

5. Encourage an enlightened and informed public opinion;
6. Uphold national values;
7. Coordinate research;
8. Act as a catalyst for change;
9. Promote national and community service;
10. Encourage and develop the Nigerian human potential;
11. Foster critical and analytical thinking;
12. Promote and encourage a continuous interest in learning and the use of knowledge;
13. Foster international relations through scholarship;
14. Pursue the goal of free inquiry after truth; and
15. Disseminate knowledge. (Adaralegbe, 1972)

The recommendations of the National Curriculum Conference, while representing national thinking, could not be considered national policy. The clarion call was made in 1969. Yet years later, for lack of implementation, this call was still being made. Fafunwa (1971) emphasizes the African or national character of the university. He points to the need for universities to redefine their objectives with a view to making them more relevant to the Nigerian society. Quoting the UNESCO conference of 1962 as expressing his views, he states that university education should have the following objectives:

> Forge unity by assuming an African character; raise the intellectual standard of the population; provide training to meet the country's needs; provide opportunities for continuing education.

In addition the university should:

> Place an emphasis on world academic standards; the unification of Africa; appreciation of African culture; manpower needs and nation-building. (pp. 276-77)

In 1972, as a direct follow-up to the Tananarive Conference, a workshop of African universities was held in Accra, Ghana. The theme for this conference was "Creating the African University: Emerging Issues of the 1970's." Yesufu (1973), summarizing the conference, speaks to the issue of redefining objectives for university education. He points out that the African university must have a "new working definition" which would reflect a pursuit of knowledge for the elimination of adverse conditions of the common man rather than knowledge for knowledge's sake (p. 40). He further states:

> The problem of making the university institutions relevant to Africa, therefore, goes beyond the need for mere tinkering with forms and institutions--a fundamentally different conceptualization of the university idea was continually called for by the workshop participants. A truly African university, it was submitted, must be one which, while acknowledging the need to transform Africa into the twentieth century, must yet realize that it can best achieve this result by completely identifying itself with the realities of a predominantly rural "sixteenth century" setting, and the aspirations of an unsophisticated, but highly expectant people. (p. 41)

In addition to its function of teaching, research and dissemination of knowledge the "new African university" is being challenged to take an active part in the social and economic modernization of the country by focusing on the total human resources of the nation.

The workshop participants identified six major objectives which universities should be concerned with:

1. Pursuit, promotion and dissemination of practical knowledge;
2. Research--priority given to local problems;
3. Provision of intellectual leadership;
4. Manpower development--emphasis on training middle manpower. A shift in emphasis from the purely academic to the professional and practical;
5. Promoting social and economic modernization;
6. Promoting intercontinental unity and international understanding.

National policy on educational objectives has been guided largely by the aforementioned contributions. Each national development plan, while allocating a substantial amount to education, has paid little attention to defining specific objectives for which such sums would be spent. The Third National Development Plan 1975-80 (1975), however, represents the first real attempt to specify objectives for all levels of education. These objectives serve as a guide toward the implementation of educational programs and projects during the period. An anlysis of the objectives would suggest that previous calls for a definition of national educational objectives were not in vain. It, in fact, appears to represent a consensus of earlier efforts.

National objectives are defined by the plan as follows:

1. Expand facilities for education aimed at equalizing individual access to education throughout the country;
2. Reform the content of general education to make it more responsive to the socio-economic needs of the country;
3. Consolidate and develop the nation's system of higher education in response to the economy's manpower needs;
4. Streamline and strengthen the machinery for educational development in the country;
5. Rationalize the financing of education with a view to making the educational system more adequate and efficient; and
6. Make an impact in the area of technological education so as to meet the growing needs of the economy.

The objectives represent the federal government's plan for a five year period and, indeed, have important policy considerations. For example, the emphasis on expanding facilities has the associated objective to "create the capacity for training the much needed high-level personnel for all sectors of the economy" (p. 248). Enrollment is expected to increase by more than 50 percent; a 60/40 science/humanities ratio is being pursued; and more students are being encouraged to find off-campus accommodations. This

shift in emphasis has definite implications for national objectives. The implications, in fact, are (a) greater access to university education, (b) increased emphasis on science and technology, and (c) community involvement.

Prior to more recent efforts at defining objectives, universities, and indeed all levels of education, had no guidelines as to what their focus or orientation should be. Consequently, vague statements appeared in university catalogs. According to Ike (1976):

> Although all the universities were Government-owned and financed, no serious effort appears to have been made to provide them with statements of objectives, to enable them to know what was expected of them so that they could plan their curricula accordingly. One had to fish these objectives out in bits and pieces from pronouncements made by the Prime Minister, Regional Premiers and other government functionaries on different occasions. (p. 31)

Three objectives emerge from Ike's discussion on university education: (a) development of high-level manpower; (b) citizenship training, and (c) training of the mind. Objectives as defined by Ike appear more in harmony with those of the Third National Development Plan, both emphasizing manpower training. This trend reflects the amount of government involvement in the universities. It was in 1975, that the federal government assumed control of all Nigerian universities. This meant that the government was totally responsible for the major part of univesity finances. It was also during this time that objectives were specified at the national level emphasizing development manpower needs.

Each attempt at defining educational objectives has been faced with the problem of implementation at each level. The problem abounds as to how to translate the objectives into relevant curricula and practices. The National Policy on Education (Note 6) emanating from a national educational policy seminar in 1973, of educational experts, anticipated this problem and has made provision for the development of implementation guidelines.

The philosophy of education as stated by the National Policy, emphasizes the effective participation of the individual in Nigerian society and equal educational opportunities for all citizens. This seems to be an effort to redress some of the ills of the past when education was geared not towards the Nigerian society, but abroad. Given the gap in educational development among various parts of the country (particularly North and South), the equal opportunity emphasis is appropriate.

Five broad objectives emanate from this philosophy which are to be used by all educational institutions as guidelines in determining the type of curriculum to be offered as well as how it is to be offered. The objectives for all levels of education as stated by the National Policy are:

1. Inculcation of national consciousness and national unity;
2. Inculcation of the right type of values and attitudes for the survival of the individual and the

Nigerian society;

4. Training of the mind in the understanding of the world around; and
5. Acquisition of appropriate skills, abilities and competencies both mental and physical as equipment for the individual to live in and contribute to the development of his society. (p. 4)

In addition to providing measures for implementation, a National Educational Policy Implementation Task Force has been set up. This group will have the responsibility of translating the policy into a

> workable blueprint that will guide the bodies whose duty it is to implement educational policy, and will also develop a monitoring system on the progress of planned educational evolution to ensure that infrastructures are prepared and bottlenecks removed in time to facilitate the effective, smooth implementation. (p. 3)

University education is considered to play a crucial role in national development and in fostering national consciousness. Particular attention is, therefore, being given to the type of teaching and research carried out in these institutions.

Higher educational institutions should pursue national objectives through (a) teaching, (b) research, (c) dissemination of existing and new information, (d) service to the community, and (e) being a storehouse of knowledge (p. 14).

The policy makes many statements on national objectives, some of which have been indicated by earlier reports. Using its statements as broad criteria and surveying the data on objectives, the following specific objectives can be stated for university education in Nigeria. University education should endeavor to provide:

1. High-level manpower within the context of the needs of the economy;
2. Practical knowledge and skills through a scientific orientation;
3. Equal access--a fairer spread of higher education activities;
4. Greater access--such access to be through universities or correspondence courses; or open universities; or part-time and work-study programs;
5. Community service through extramural and extension services.

National objectives as outlined according to the new national policy represent a shift in emphasis from previous practices. As a way of solving specific problems faced in universities, direct emphasis is placed on the application of an open learning approach. (See Chapter III for a detailed explanation of this approach). This approach is suggested in response to the need and demand for greater access to university education as evidenced by the tremendous increases in enrollment each year, leaving institutions

overburdened. Providing greater access is one of the cardinal objectives of the educational policy, implying some form of open learning activity. The emphasis on equal access implies a diversified curriculum designed to cater to a wide variety of students from diverse academic, social, and economic backgrounds.

Two experiments on open learning already in existence in the country were set up to meet specific national development needs. The UNESCO proposal establishing the University of Lagos also provided for the "establishment of facilities for part-time studies and to this end should make use of correspondence and mass media teaching techniques" (COSU, Note 7). During the 1973-74 academic session the Correspondence and Open Studies Unit (COSU) at the University of Lagos was established. COSU became operative with the following objectives:

1. Open courses and facilities to a much wider public than is possible through the traditional face to face method.
2. Use expansion possibilities toward breaking some of the more urgent national development bottlenecks.
3. Concern itself primarily with those educational problems which, as part of a university, it is uniquely equipped to tackle.
4. Experiment with new ways of teaching and learning; and new approaches to education; and through careful

> scientific research and evaluation to record and report on its experiments (p. 1).

The second development in open learning is the National Teachers' Institute (NTI) at Kaduna in Northern Nigeria. The NTI represents a non-university example of open learning, but one which has implications for universities since its work is carried out on a cooperative basis with these institutions. In 1974, the federal military government established the institute as part of an overall national effort to upgrade the primary teaching force in the country in preparation for the introduction of universal primary education. The specific objectives of NTI are to:

1. Assist in the upgrading of sub-grade II teachers to grade II level;
2. Assist in the upgrading of grade II teachers and WASC holders to NCE level;
3. Provide post graduate qualifications in education for graduate tutors who lack this qualification;
4. Offer diplomas, certificates and testimonials in various areas for serving teachers and others;
5. Foster research in those areas relevant to the long term needs of education generally. (NTI, Note 8)

While expanding educational opportunities is given priority in national goals, the means of planning and implementing such expansion has need for consideration. In this regard, national goals place increasing emphasis on the use

of technology of education to achieve such developments. Crucial to the success of proposed ventures is the planning and organization of instructional strategies and the development of techniques of mass dissemination. Educational technology would appear to be a central focus of such a new learning approach.

Educational technology has been a part of university education for several decades with a primary focus on improving the quality of instruction. Notable among the early attempts is the USAID established audiovisual campus service at Ahmadu Bello University in 1963. Assisting in this project were Indiana University and the University of Southern California. For the first time, Nigerian personnel were sent abroad for training in educational technology and highly qualified staff were recruited to help develop the program which aimed at training, research and service (Stevens, n.d.).

Also in 1963, USAID provided a grant to the Federal Advanced Teachers' College, later to become the Faculty of Education, University of Lagos, to develop an audiovisual program. In cooperation with UNESCO and UCLA staff, resources were provided to the college. The purpose of the program was to "improve instruction through the best utilization of a wide variety of instructional materials" (University of Lagos, Note 9).

UNESCO was instrumental in establishing the media service at the University of Ibadan in 1968, although a UNESCO audiovisual specialist had been employed in the institution since 1959. A closed-circuit television unit with support facilities was set up to be used specifically in adult education. This focus later became broader to maximally use the facility.

Later developments include the Curriculum Development and Instructional Materials Center (CUDIMAC) at the University of Nigeria, Nsukka, founded in 1971, through a grant from the Carnegie Corporation. Its purpose was to "assist in the task of making education more relevant, realistic and functional" (CUDIMAC, Note 10).

The Audiovisual Center, now Department of Educational Technology, at the University of Ife developed in cooperation with the University of Leeds. It opened in 1974, as a "central teaching and research support service" (Audiovisual Center, Note 11).

Audiovisual services at the University of Benin developed in 1975 as a service to the Faculty of Education to support its teaching program.

Summary

The new national policy, the first comprehensive policy statement on educational objectives, is far from being suitable for implementation in its present form. The task force

set up to streamline the policy is an indication of this fact. However, it does serve as a useful guide in decision-making, and assessing existing endeavors. Objectives emphasize: (a) development of manpower, (b) practical skills with a scientific orientation, (c) equal access, (d) greater access, and (e) community service. The implications of objectives have far reaching effects on the educational system as a whole. It indeed represents a radical change in its structure and emphasis. Their implementation calls into being new approaches and techniques as suggested in the development of open learning systems designed to meet specific development needs and the greater emphasis placed on technology of education. Extending education has the accompanying need for mass dissemination and the planning and organization of instructional strategies to accommodate such learners. Educational technology offers possibilities toward the achievement of such objectives.

CHAPTER III

OPEN LEARNING/DISTANCE EDUCATION

Developing countries during the last two decades have undergone rapid change at a pace unparalleled in the history of world economies. The pressure to expand and modernize every sector of the society is felt by governments in power. Education, particularly university education, is increasingly seen as the key to development through the production of the much needed high level manpower. As expressed by Williams (1971), this belief should be viewed with caution:

> The heavy weighting attached to "high-level" manpower training follows earlier work in which Harbison and Meyers participated, which has emphasized the role of elites in the process of industrialization, and, moreover, reflects a judgement held by many development experts. It is not, however, a judgement which should be accepted without question. (p. 48)

With the gap between developed and developing countries becoming wider as indicated by Faure (1972), a number of pressures operate on these societies to expand educational facilities. Four major factors are given as being responsible for such pressures. Demographic factors affect the number of pupils to be enrolled in school. The rapid increase in population and the consequent demand for education has meant the expansion of facilities at all levels. The manpower needs for economic development are another source of pressure. If economies are to grow, a large number of skilled workers will be required. This places a responsibility

on the educational system to produce such workers. Governments are also guided by political considerations. Mass education is often considered an important factor in creating national unity and speeding up decolonization. Pressure may also be put on government by the people. The desire for increased status often prompts parents and pupils alike to clamor for increased educational opportunities.

There is increased awareness of the potential for technology in education. Educators the world over are applying aspects of technology to solve specific educational problems. Ashby (1974) states:

> In many countries there is a grave shortage of teachers, especially in universities and colleges of technology, and the demand for post-secondary education outruns finances, accommodation and equipment. In some places it assumes the dimensions of an intellectual famine. It is not surprising that nations are beginning to pay attention to the technology of education and to ask where the application of scientific analysis to educational systems is likely to be rewarding, and where it could be irrelevant or damaging. (pp. 34-35)

Many innovative uses have been made of technology of education at the university level around the world. Such uses have normally been in response to particular educational problems faced on a national or regional scale. MacKenzie (1975) describes open learning as a new institutional concept and practice which is being applied in various countries to expand educational facilities and to cater to a greater variety of people. Open learning is a system of education designed to provide greater access to higher

education by creating opportunities for study for those debarred from it for whatever reason, be it lack of formal educational training, academic vacancies, poverty, remoteness, employment, or domestic necessities. Such opportunities may be provided to learners through an organized system of distance education. Distance education is a system of teaching conducted largely through print, mechanical or electronic devices due to the physical separation of learners and teachers (Holmberg, p. 9). Thus open learning is the overall system of education which normally utilizes distance education methodology.

Open learning is a unique yet flexible concept. The literature would suggest that fixed criteria for openness do not exist, since most institutions have specific features which are determined by the social, economic and political environment in which they are developed. However, a number of characteristics are normally associated with this approach and may be present in varying forms and degrees in a particular system. It is first of all not a variant of traditional education, but the opposite of it. According to MacKenzie unique features of the instructional system consist of:

1. Identifying, interpreting and analyzing curriculum goals at the beginning of the student's program, and throughout the period during which there is involvement with the instructional program.

2. Formulating objectives in such a way that they are useful in designing and evaluating instruction.
3. Encouraging learner participation by providing a reward system relevant to student needs.
4. Utilizing flexible teaching methods such as those employing mediated alternatives like television, audio tapes, programmed materials, etc., to meet individual needs.
5. Assessing the achievement of curricula and learning objectives through a competency-based approach.
6. Accommodating distance between the instructional staff, resources and the learner as a positive element toward the development of learner independence.

In an open learning system traditional requirements (academic qualifications for admission, age, pursuit of an academic degree or certification) are not imposed. Local study centers are a regular feature which provide many of the resources needed by leaners, as well as serve as a meeting place for discussion and interchange of ideas. MacKenzie also states that learners who remain in the program develop a kind of self-discipline and independence which are necessary and positive elements in utilizing this type of approach to learning.

In addition to the above mentioned characteristics, a number of other features characterize the organization of

open learning institutions. These, however, may vary with the objectives and unique environmental features of the system. Students are normally permitted to discontinue their studies with a view to resuming when conditions permit. This ability to drop out between courses provides an extra degree of flexibility often essential to the distance learner. Such institutions, according to MacKenzie, also tend to be autonomous, yet depend heavily on external agencies such as:

1. Publishers, for guaranteeing the availability of set books;
2. Booksellers, for stocking them;
3. Universities, for providing summer school facilities;
4. Local education authorities, for providing study center facilities and financial support to students;
5. Public libraries and similar facilities, for background reading materials;
6. Post office, for postal services;
7. Broadcasting corporation for the production and transmission of television and radio programs;
8. Commercial printers, for printing of course materials and handbooks;
9. Full-time staff of other institutions whose members may be employed on a part-time basis. (p. 358)

Open learning was pioneered in the United States during the early 1960s. The major charitable foundations encouraged, through financial grants, experimentation on non-

traditional post-secondary education. The Articulated Instructional Media (AIM) experiment funded by the Carnegie Corporation in 1964, was the first attempt at non-traditional mediated higher education (Wedemeyer, 1969). The British, stimulated by the AIM experiment, in 1969 proposed their own non-traditional approach as the Open University, which became operative in 1971. Canada also carried out research and developed a number of non-traditional approaches. Since this time, other institutions with various organizational patterns and objectives have emerged in developed and developing countries. These applications are perhaps best understood with reference to their structural organization and the specific educational objectives they are designed to achieve.

According to the literature open learning institutions developed primarily as alternatives to traditional education, and tend to be predominantly separate facilities. A growing number, however, have also been incorporated into existing institutions as an integral part of university education. Several examples can be cited that fall into the former category. Upon analysis, few of these are truly alternatives, rather variants.

The British Open University (OU) is often hailed as a successful example of open learning. Its model has been studied and adapted to educational systems around the world. It was the first university established solely to teach adults at a distance (Lewis, 1971). While its instructional

format follows largely that for open institutions, its curriculum still follows that of traditional institutions. From inception, the need for acceptance by other institutions was judged crucial in order to ensure credibility. This became an important issue in the recruitment of staff. To prevent OU graduates from being discriminated against and considered "second class," alignment with existing institutions in terms of curriculum had to be made. Initial course offerings, therefore, were for degree courses only, thus catering to a particular socio-economic level. Its objective as a "second chance" institution was somewhat hampered by this decision. The degree to which the OU could experiment is also reflected in its organizational structure which is modeled predominantly after existing institutions. Such concessions have been made, however, because of political and professional realities of the institution's environment.

The Broadcasting University of Japan is unique among others in its use of the broadcast media as the primary medium of instruction. This has been part of an overall effort to reform and redesign higher education in that country. Although it is a separate institution its curriculum is the same as other universities and is in fact designed by the same Ministry of Education.

In the United States during the 1960s there was experimentation with and development of a number of alternative educational approaches. The University of Mid-America (UMA)/State

University of Nebraska originated from this background. This regional open learning approach, expected to be fully operative by 1980, is perhaps the largest cooperative effort in the world, initially combining five large American universities with the possibility that more will be added as the experiment develops. UMA serves as a "central course development and evaluation agency which makes courses available to individual state institutions for delivery as those states determine" (MacKenzie, 1975, p. 455). It serves as a coordinating agency for state delivery systems. The uniqueness of UMA resides in its ability to combine state, regional and federal resources into one system. Course production would appear to be cost-effective given the large number of students using the same materials. This type of organization has presented problems dealing with agreement and approval among states on matters of finance, curriculum, employment, etc. The structure and function of UMA (as a development and coordinating agency) precludes its having its own student body and granting its own degrees. These functions are handled by individual state institutions. UMA represents a cooperative effort by state institutions to provide an alternative education.

The Iranian Free University was established to provide skilled manpower to help develop the non-urban sectors of the country and to meet the increasing demand for higher education. The University's initial orientation is away from a subject-discipline approach and toward pre-service

and in-service training and education of professionals in the areas of teacher education and health services. The German Funkklogg is a national effort designed to provide greater access to university education and in addition in-service education for professionals. Except for its use of the broadcast media, it is largely structured along traditional lines.

Everyman's University in Israel, patterned after the British Open University, and still in an experimental stage, is designed specifically as a "second chance" institution. It has attempted to gear curriculum to the student's capacity. Priority is given to teacher training in specified areas. Television and other audiovisual methods play a limited role in instruction. The institution has an uncertain financial status since it was established through an external grant. This will probably affect its future development.

A novel approach which appears to have merit is the "learning contract." Three institutions in the United States (Empire State College, New York; Minnesota Metropolitan State College, Minneapolis; and Community College of Vermont) have pioneered and developed this approach which focuses primarily on individual need. It is more appropriately described as a "style of teaching and learning rather than an institution" (MacKenzie, p. 365). Several assumptions are implicit in the learning contract: (a) a program which is relevant to

the personal needs and capacities is worked out with each student; (b) a project-based mode of learning is applied, giving the student a broad range of resources; (c) a competency-based approach to learning--with assessment based on achievement of specified knowledge and skills is used; and (d) students' competencies are verified by the sponsoring institutions to ensure compatibility with conventional institutions. Merits of the system include its flexibility in admission, curriculum design and assessment as well as structure. Each of the three institutions, although separate facilities, are part of state university or college systems which exercise some degree of control over administration and finance.

Problems faced by all such alternative approaches would appear to be the question of how to provide greater access and still maintain academic standards compatible to those of traditional universities, and how to serve individual needs as well as those of the society. It is contradictions like these that make truly alternative approaches rare. Each of the approaches described above has some innovative feature yet does not depart radically from the traditional system. Given the social, economic, and political realities, the question can be raised as to whether it is possible to have a truly alternative model. Present examples would suggest that there are indeed none. Can open learning objectives be achieved without necessarily having an alternative system?

The number of open learning examples that have been incorporated into existing structures are few, since according to MacKenzie, they have been mainly designed as separate institutions to prevent interference with established programs. However, several advantages may exist for this type of development. For example, a delicate political or social climate might hinder the development of a separate system. This was the situation in France, where education authorities resolved this issue through the establishment of distance learning centers in various parts of the country, but associated these with established universities. Learning centers developed in France out of the need to upgrade the secondary school teaching force. Another reason for incorporation might be the size of the audience (in the case of specialized audiences) to be catered to. If the potential numbers are not large enough to warrant the expense of a separate institution, incorporation might be the best alternative. The Memorial University of Newfoundland (Canada) designed a specialized instructional strategy (using television, videotape, two-way audio-cassette and telephones) to provide full credit courses to improve the skills of remote teachers, a small yet significant group. Australia and the Soviet Union have long histories of correspondence education and, therefore, found it cost-effective to modify some of the existing programs. Australia is a pioneer in extramural studies dating back to 1909, while the Soviet Union has a history

of over 50 years. All 61 universities in the U.S.S.R. offer some form of correspondence education. A final reason for integration is the lack of resources to launch a separate instructional program. A number of developing countries fall into this category. Notable examples include the Correspondence Course Unit in Kenya; the UNRWA/UNESCO Institute, Beirut, Lebanon; and the Correspondence and Open Studies Unit in Lagos, Nigeria. In each of these cases correspondence/open studies units utilizing broadcast media are incorporated into established universities, thereby utilizing academic staff, administrative machinery and other existing facilities.

The Correspondence and Open Studies Unit at the University of Lagos in Nigeria has its own administrative machinery, yet degrees are awarded by the universities. By sitting the same examination as internal students, compatibility is ensured. Existing staff are paid stipends for their roles in the preparation of course materials. University facilities are utilized for residential school while study centers throughout the country make use of local agency services and facilities. This kind of cooperative effort reduces cost and makes maximum use of facilities. Open learning systems incorporated into existing institutions have often been referred to as "semi-open" or "sort-of-open" universities.

A number of educators have suggested that open learning should be considered on the basis of the objectives to be achieved rather than the structure of the system itself. From a survey of the objectives of open learning applications several categories appear evident: (a) in-service training; (b) expanding higher education--greater access and equal access; (c) skilled manpower; (d) personal growth and development; and (e) broad general objectives.

Institutions such as those in Kenya, Australia, Canada, U.S.S.R., France, Beirut and Nigeria provide in-service training by upgrading the professional skills of specialized groups (e.g., teachers and doctors). They are primarily national efforts aimed at providing adequately trained personnel in specialized areas. Programs are developed specifically for the particular needs and inadequacies as assessed by professional groups. The National Teachers' Institute in Nigeria at Kaduna developed in response to the introduction of universal primary education. Its responsibility was the upgrading of 65,000 primary school teachers now in the system and the training of an additional 235,000 required by 1980.

Although most open learning institutions have the objective of expanding higher education, some tend to be more flexible than others. The "second chance" universities are examples of such flexibility. These institutions usually eliminate admission requirements and develop curriculum to

suit such non-traditional learners as adults, school-leavers of all ages, the educationally deprived, etc. Japan, Israel, and Germany have developed systems which reflect such objectives

Open learning approaches that have the objective of providing skilled manpower have direct implications for national development. The curriculum in this instance reflects development needs and is closely geared to these areas. Such institutions try to provide manpower in those priority areas as specified by the national government. The Iranian Free University and the Television Agricultural High School in Poland are relevant examples.

The three learning contract institutions seek to provide personal growth and development. The personal growth of the individual and one's satisfaction with one's own performance are critical elements. The ability to function well in society by developing the necessary professional and social skills is also given special attention. One's past experiences may be assessed as credit in these institutions.

The British Open University and the University of Mid-America combine many of the objectives discussed above and can, therefore, be classified as broad in scope. Both institutions are primarily set up to offer wider opportunities than the traditional system by providing courses of both a vocational and non-vocational nature.

There are several possible advantages in the application of the open learning approach in developing countries

where crowded institutions, staff shortages and other resource problems exist. Open learning utilizing distance education can relieve the burden on traditional systems by providing greater access and for a wider variety of people. Second, it can be cost-effective by using existing facilities to the maximum. The wide range of students which can be catered to prevents the expensive venture of developing separate institutions for specialized groups. The greater number of students also has the potential of reducing the overall cost per student. Although cost-effectiveness alone should not be the sole criterion for implementing open learning approaches, it is an important element in resource considerations. Third, it can help foster development efforts by allowing personnel to remain in their geographical areas, rather than leaving them to pursue studies in urban centers and perhaps never return. The "rural/urban drift," through this approach, could possible be checked. Fourth, professions are encouraged through in-service education.

Implications exist for the traditional educational system where the open learning approach is integrated. Perhaps the overall implication if properly implemented is that of change, social change, by relaxing restrictions and permitting those previously barred to enter. Teaching methods would need to be changed, using modern communication to overcome the problems of distance and to satisfy various learning styles. The overall instructional role and strategy

would be altered. Traditional educational assumptions would need to be changed depending upon the type of curriculum and the nature of student learning and assessment-assumptions dealing with the length of courses and their content, teaching techniques, formal examination procedures determining entry into higher education, and the award of degrees and other qualifications.

Summary

The various open learning approaches in higher education have been designed to solve specific educational problems on national, regional, or state bases, such specific problems as those dealing with population increase, skilled manpower, and a desire for further education. It is, however, unlikely that an innovative approach alone will solve such problems. A concomitant change in the social system is also required.

Open learning systems do not appear to be alternatives to traditional education but variations of it. A survey of the literature suggests that a truly alternative system does not exist, since most institutions find it expedient to simply vary traditional forms. However, open learning systems do share certain features in common not found in traditional models and it is perhaps these features which indicate the uniqueness of the approach. Those unique innovations found only in particular institutions have developed out of

needs arising in the environment concerned. It is the flexibility in the design according to need of open systems which deserves major consideration.

CHAPTER IV

CASE STUDIES OF EDUCATIONAL TECHNOLOGY IN SELECTED NIGERIAN UNIVERSITIES

Introduction

As part of the objectives of this thesis, six case studies were conducted on educational technology programs at the Universities of Ahmadu Bello, Benin, Ibadan, Ife, Lagos, and Nsukka. The study sought to find out if existing programs in educational technology were being used to achieve national educational objectives. Several questions were posed, one dealing with the nature of existing facilities, for which a number of secondary questions are also posed: (a) Is there evidence of integration into the total university curriculum? (b) How does the program fit within the overall structure of the university? (c) What are the infrastructural supports (i.e., staff, space, equipment, and finance) for effective and successful implementation of programs? (d) What are the constraints to achieving success? The findings on these questions are reported in the text of this chapter.

Procedure

Each institution serving as a case study was visited for a period of ten to fourteen days to collect data, conduct

interviews, and make on-site observations. Documents were collected and analyzed on student admission and enrollment, academic and professional staffing, budget information, educational technology program objectives, and structural organization. Sixty-one interviews were conducted with administrative, technical, production, and academic personnel involved in educational technology. A nine item questionnaire was used as the basis of and guide for each interview (see Appendix A). Each question was discussed with the interviewee prior to a response being given. Additional questions related to those on the instrument were also posed to the interviewee to gain further insight into areas of operation and organization. Observations centered on elements of infrastructural support such as personnel, equipment, space and actual functions performed. Day-to-day functions were observed in-progress during the course of the visit by attending various sections of educational technology programs. Discussions were also held with respective employees during the course of such observations. The data are presented in a comparative form to obtain an overall view and to ascertain relationships.

Kashim Ibrahim Library,
Ahmadu Bello University,
Zaria, Nigeria.

Findings

Structural Organization

One of the objectives of this study was to determine the organization of educational technology within the overall

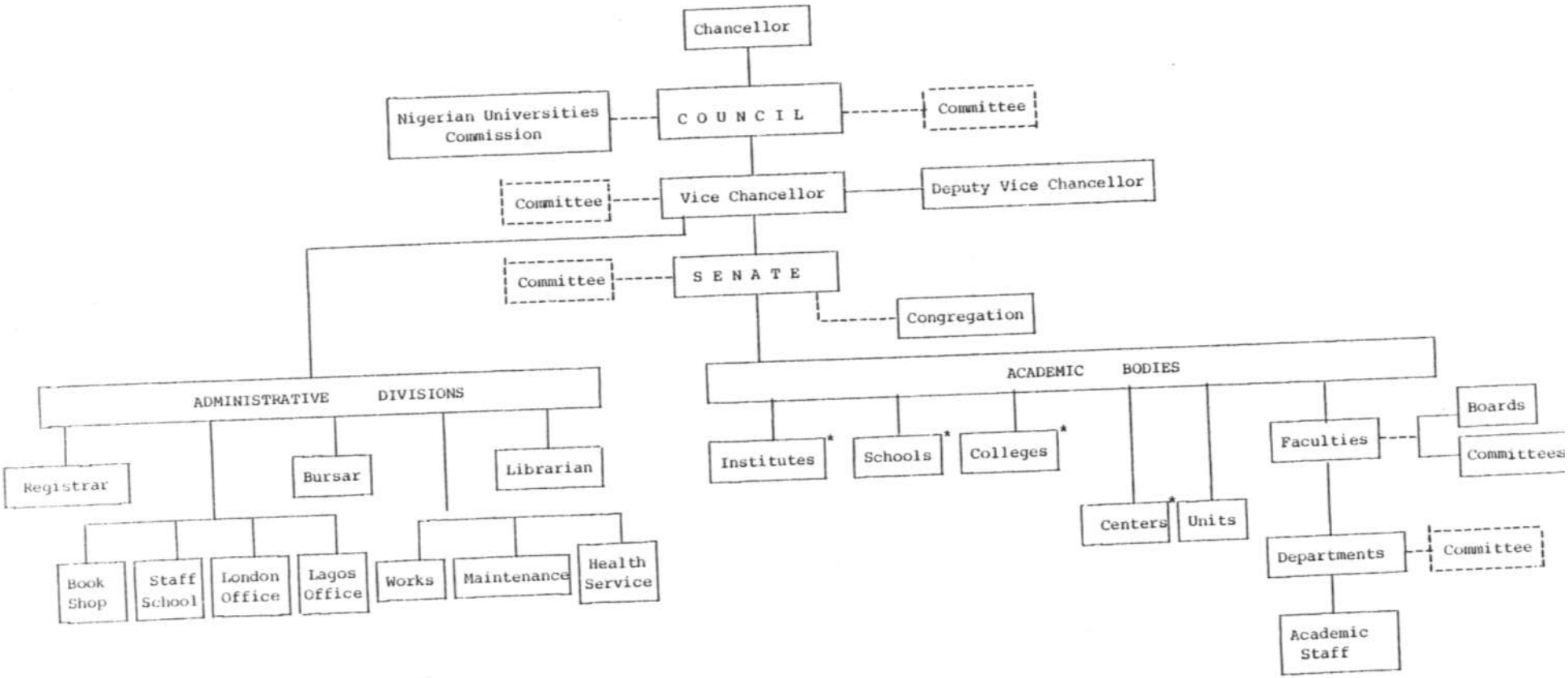
university structure. Figure 1 is a graphic representation of the Nigerian University structure. Figures 2-7 represent the organization of educational technology within this structure. The data on structural organization were obtained from documents and discussions held during interviews.

The Nigeran University

The university structure in Nigeria is relatively standardized. An understanding of the broad outlines of its organization and administration is significant to understanding the present organization and operation of educational technology. The Nigerian university is an adaptation of the British university model, where the council and senate (Figure 1) are the main governing bodies. The council as the "supreme governing organ has control in particular over the financial, property affairs and staffing of the university" (Udoji, Note 12). The membership of councils may range from 11 to 38. The majority of these members (called "lay members") are appointed from outside the university and a minority, composed of members of the academic staff, including the vice chancellor, from inside the university. Senate has control of academic affairs. Its membership is composed entirely of academic staff who are ex-officio or elected. The vice chancellor is the chairman of the senate. Faculties (schools in the American system), the next level of organization below senate, are composed of several departments. Their responsibility is

Figure 1.

NIGERIAN UNIVERSITY STRUCTURE



------- An Advisory of Supportive Role.

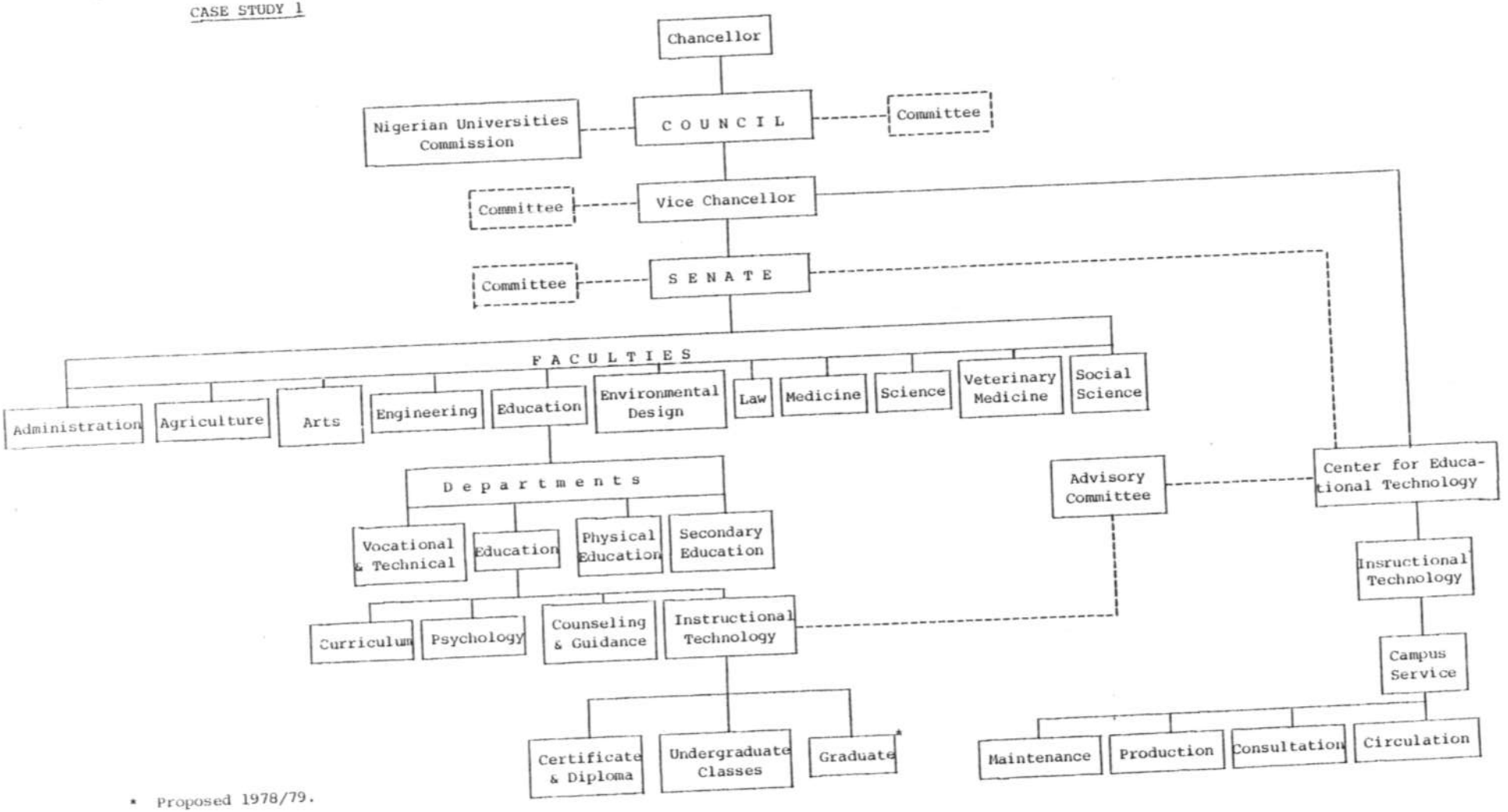
——— Direct Authority or Responsibility.

* These have been abolished in Case Study 6.

Figure 2.

CASE STUDY 1

AHMADU BELLO UNIVERSITY



* Proposed 1978/79.

Figure 3.

CASE STUDY 2

UNIVERSITY OF LAGOS

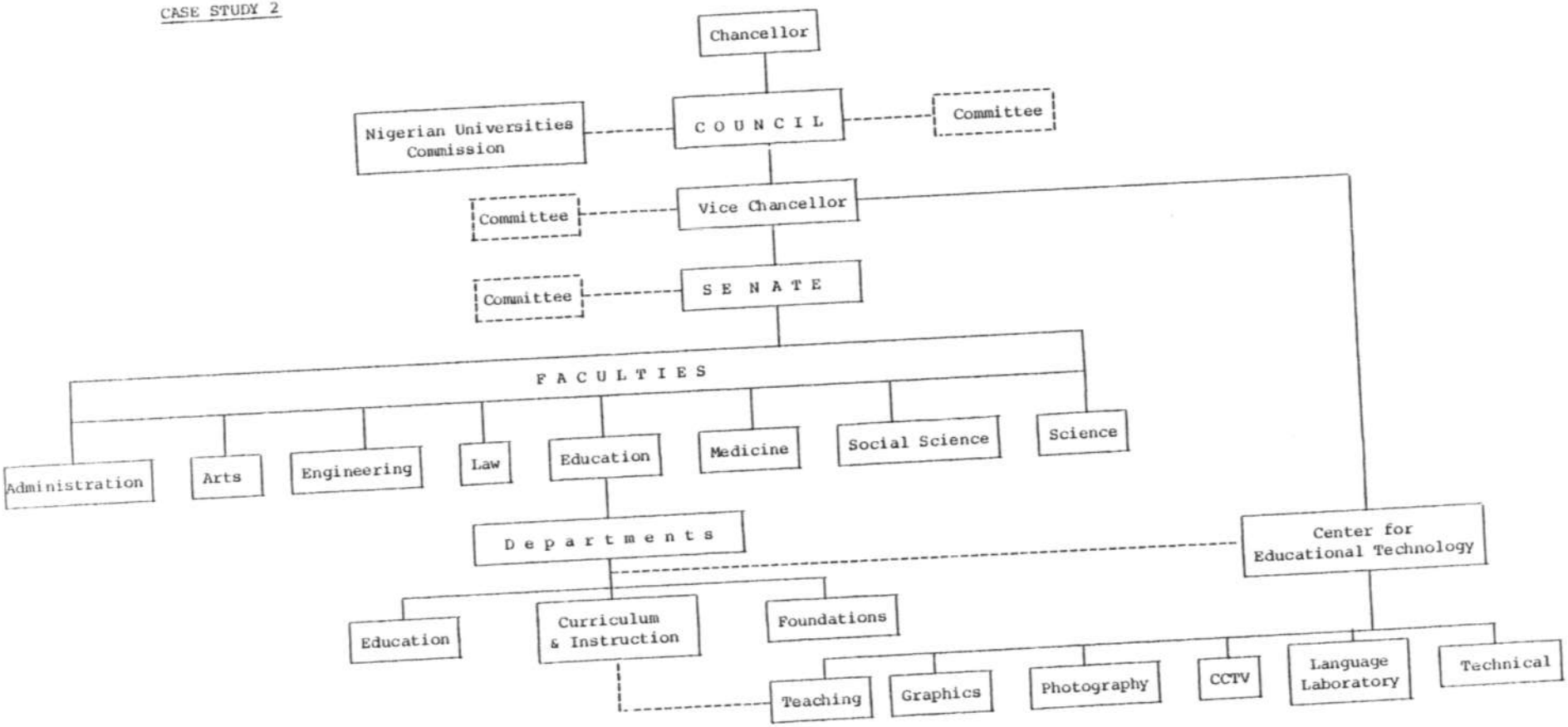


Figure 4.

CASE STUDY 3

UNIVERSITY OF NIGERIA (NSUKKA)

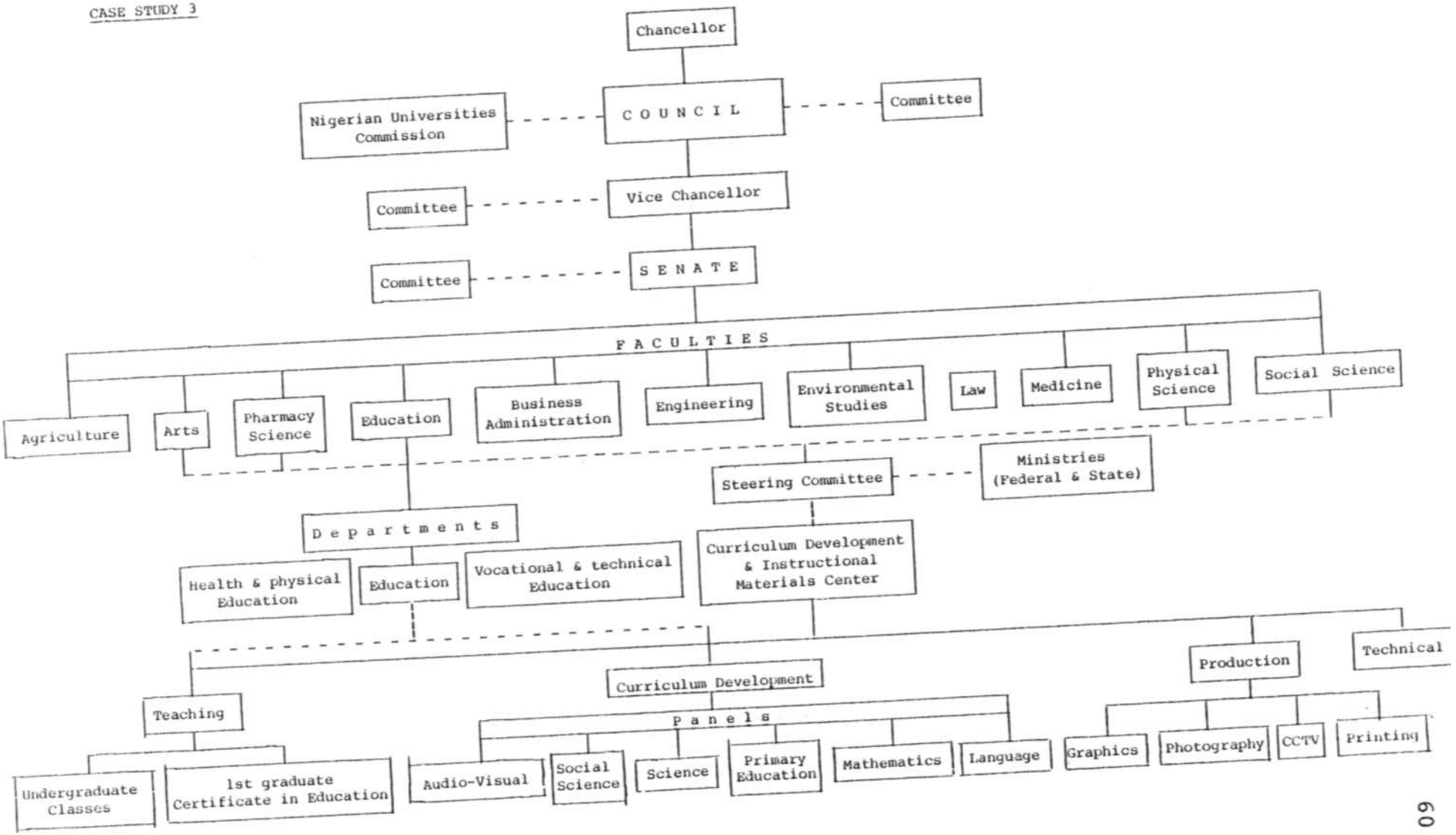


Figure 5.

CASE STUDY 4

UNIVERSITY OF BENIN

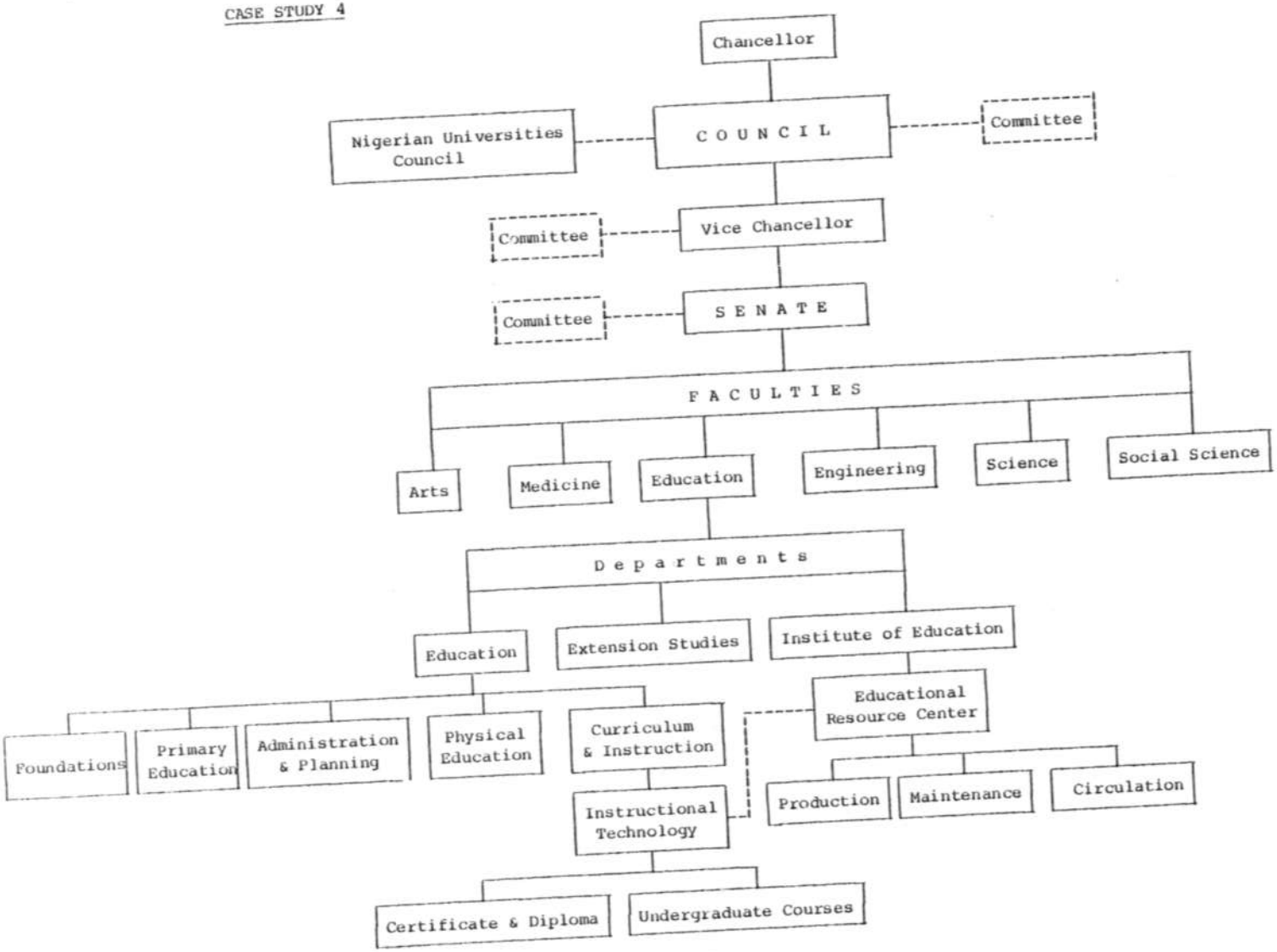


Figure 6.

CASE STUDY 5

UNIVERSITY OF IBADAN

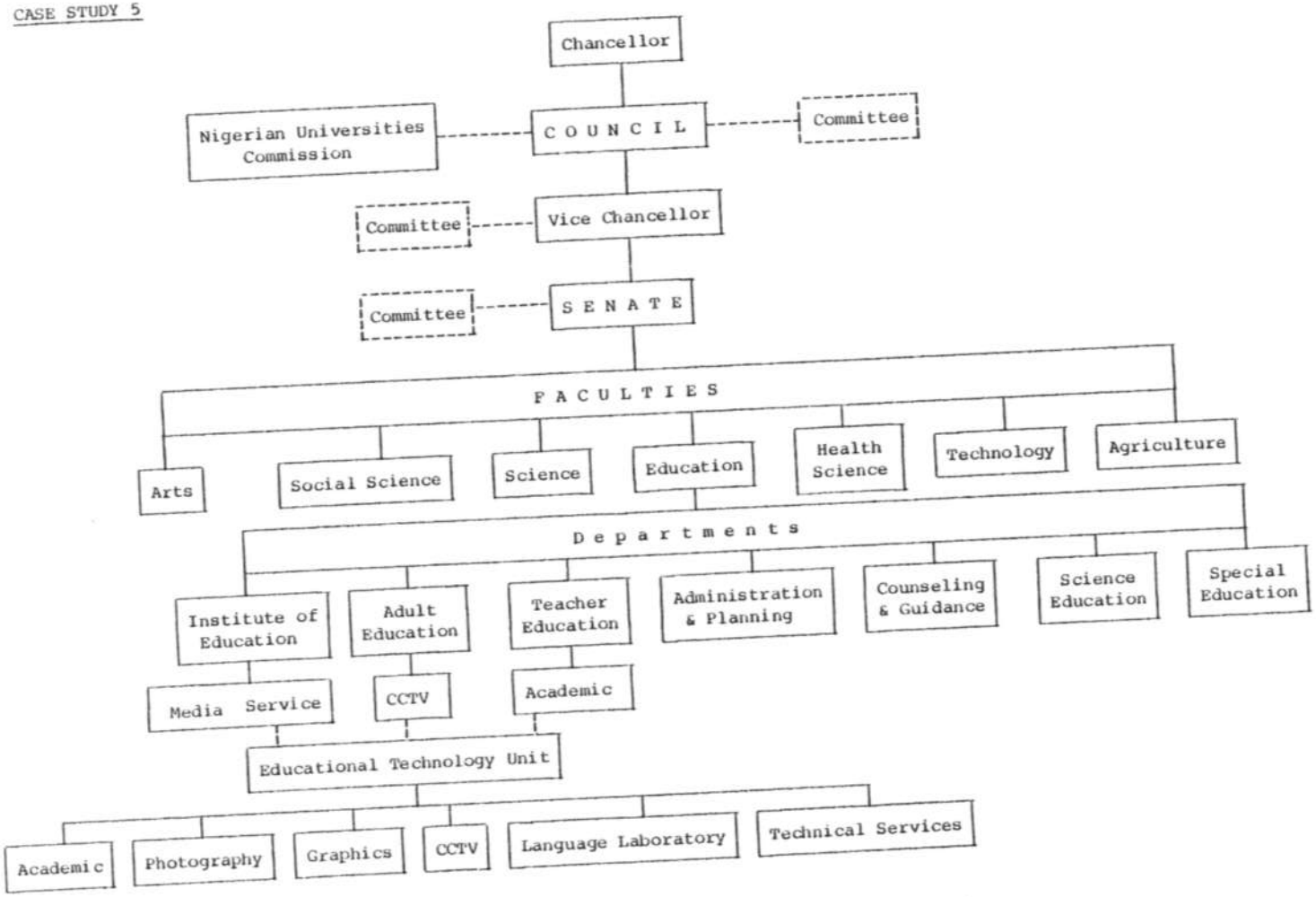
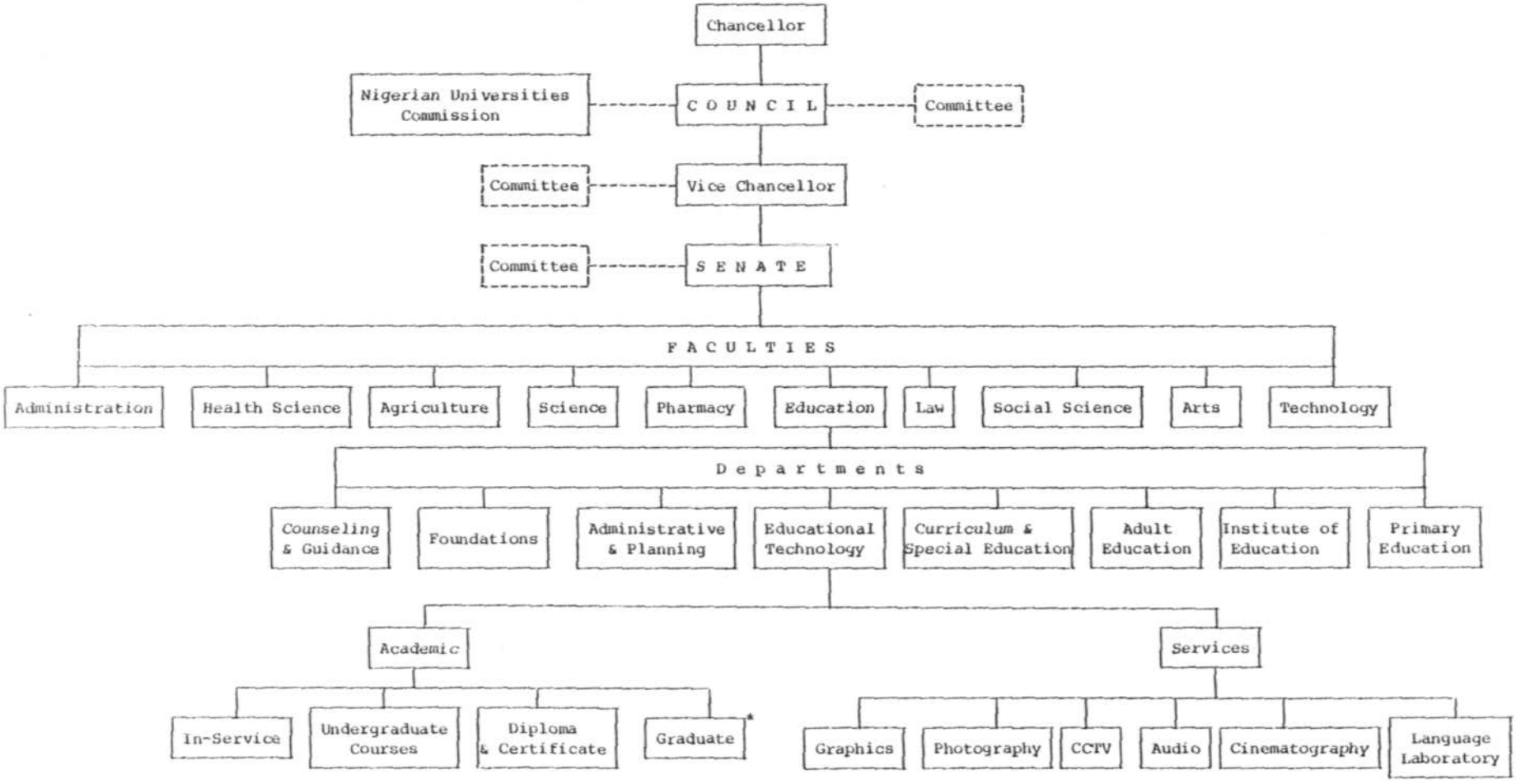


Figure 7.

CASE STUDY 6

UNIVERSITY OF IFE



* Proposed 1978/1979

the coordination of teaching, research and other activities. Institutes, schools, and colleges have a similar status to faculties and may be organized in the same manner. It is the faculty which is the predominant mode of organization at this level. Centers and units are autonomous bodies with status between that of the faculty and department. Such bodies when fully developed could be granted faculty status. Departments constitute the next level. This is the basic academic unit in the university. It consists of teachers and sometimes research fellows in a particular subject.

The administration of the university is a complex system. Each organizational level described has its associated committees which assume much of this responsibility. The vice chancellor is the administrative and academic head of the university. He is in charge of the central university administration and in this capacity supervises the various administrative departments or divisions.

The Structure of Educational Technology

Educational technology in each institution has a unique structural organization as can be seen in Figures 2-7. An analysis of these structures reveals certain similarities or patterns. Half of the sample (case studies 1-3) are autonomous centers and half are organized within the Faculty of Education (case studies 4-6) as either a department,

center or unit (centers and units within faculties are divisions of a department and should not be confused with autonomous centers and units which have a status between that of the faculty and department. See Figure 1). Certain features were found to be characteristic of each organizational pattern which affects its ability to influence the overall university curriculum.

Autonomous centers have a large degree of freedom in determining their own activities within the broad guidelines provided by the university for their operation. They are directly responsible to the central administration (usually the vice chancellor). This direct administrative link makes it easy to get policy matters of a non-academic nature dealt with and implemented. Case study 3 (Figure 5) does not have this direct administrative link but its policy is not determined by the university authorities. In this particular instance policy and procedures are determined by a steering committee with external and internal representation. The internal representation comes from representatives of various faculties and the external representation from federal and state ministries, primary and secondary schools, and other agencies. This direct line to the policy making body shortens the decision-making and implementation process. The direct senate representation of autonomous centers makes it possible to meet with all academic bodies or faculties in the institution. This avenue provides the opportunity for influencing

the total university curriculum on a policy level since it is in senate that all academic matters are decided.

Faculty based programs varied in their organization within the faculty. Among these programs there was one department (CS 6), one center (CS 4), and one unit (CS 5). Only departments have direct representation at the faculty and senate levels. Units and centers are sub-divisions of departments and are therefore directly responsible to it. This chain of authority affects the type and degree of influence these programs can make on university curriculum. For example, the department can influence curriculum at the faculty level through its direct representation, but units and centers could not have this same degree of influence due to their sub-departmental status. The unit-department-faculty chain of authority reduces its impact at the faculty level unless programs or proposals are strongly supported first at the departmental level. In all faculty based programs, there is no direct influence on curriculum outside of the faculty. Faculty interest and objectives are placed above all else thus ruling out university-wide appeal. The hierarchical chain of authority (department-faculty-senate) also lengthens the decision-making process for the implementation of programs.

Objectives

Data for objectives were obtained from case study interviews and documents collected on program operation. The

results indicated that specific objectives have been stated for each program in educational technology, but through further discussion it was evident that these are not always known or understood by those implementing the program. In addition, practical guidelines for implementing such objectives have not been devised.

The organization of educational technology in each institution appears to influence its objectives, scope, and actual function. Autonomous centers have predominantly a service objective and function (Figure 8). Service is defined as the design, production and maintenance of instructional materials upon request. This is the basic media production level. Educational technology in this context is used as an aid or supplement to the process of instruction. The scope of these programs is university or state-wide. The autonomous status gives these programs more flexibility in dealing with all faculties in the university of state-wide institutions where this is applicable. Case Study 3 indicated a state-wide scope of operation through its preparation of curriculum materials for all levels of educational institutions.

Faculty based programs have dual objectives of teaching and service (i.e., the service and teaching functions are combined under one program). Observation and discussion reveal that in most instances greater emphasis is placed on teaching rather than the service function, perhaps because

Figure 8.

Scope of Educational Technology Programs

Organizational Structure	Case Study	Institution	Scope
Autonomous	1	Ahmadu Bello University	University
	2	University of Lagos	University
	3	University of Nigeria (Nsukka)	State
Faculty Based	4	University of Benin	Faculty
	5	University of Ibadan	Faculty
	6	University of Ife	University

this is the main objective for faculty existence. The scope of these programs is predominantly faculty wide. Case Study 6, however, has a university-wide scope of operation.

How are objectives defined and who defines them? Through interview discussions it was revealed that the faculty, together with the respective department, determines the role of educational technology in faculty based programs. Autonomous centers have their objectives and scope determined by the vice chancellor, in cooperation with interested academicians and/or administrators. In considering a future role for educational technology this decision-making factor will be an important one to consider.

Educational technology's influence on university curriculum is at the media production level in all cases. Even at this level, however, it is through individually generated requests that such services are rendered rather than through a predetermined process of curriculum development. Autonomous centers provide a wider scope of service than faculty based programs and therefore have the potential for greater influence.

University Enrollment

A significant factor in the development of educational technology has been the size of the university in terms of actual student numbers. The rapid increase over the last five years has caused a strain on existing resources in all

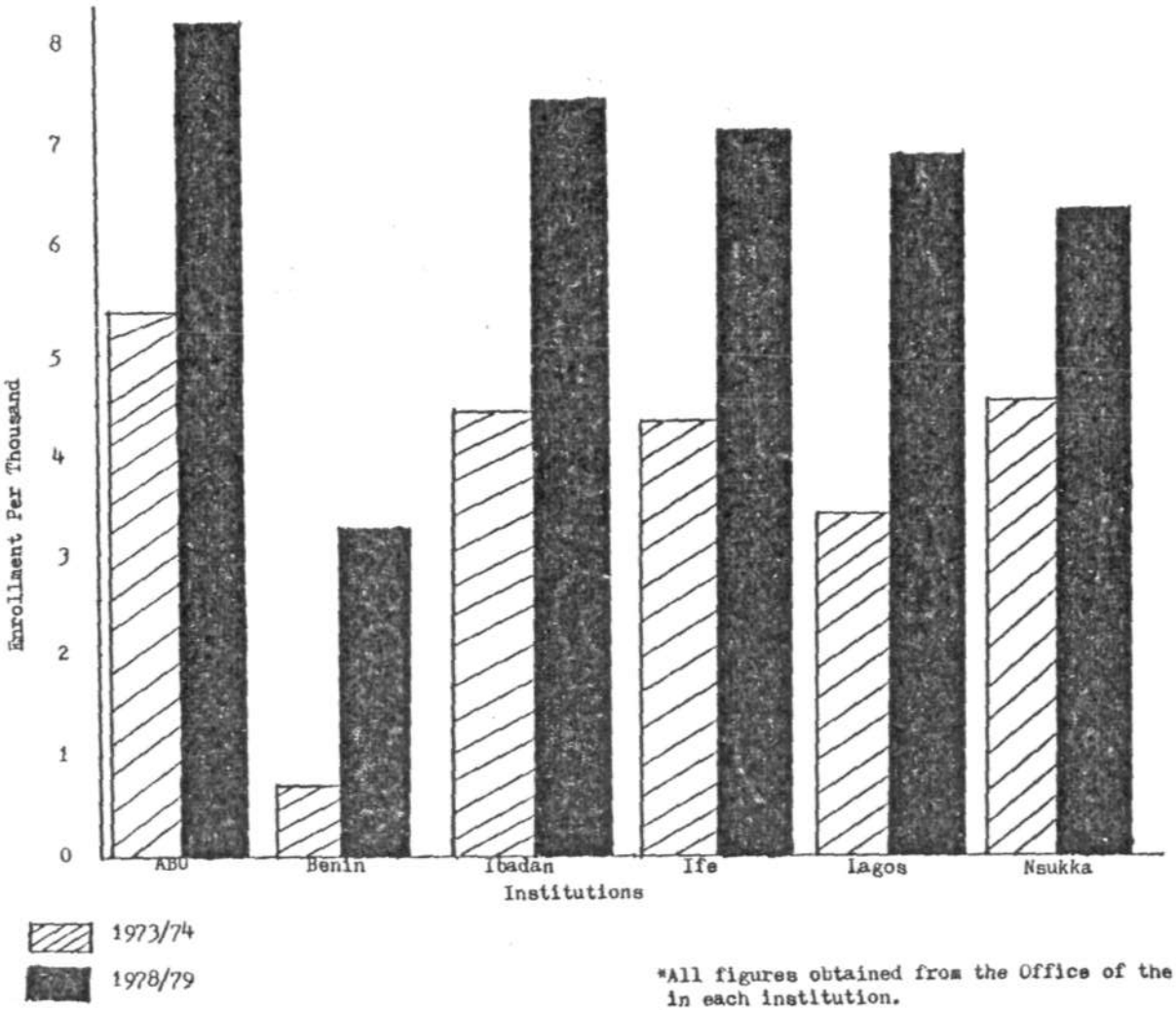
Nigerian universities of crisis proportion. Figure 9 gives a comparative analysis of enrollment for the academic years 1973-74 and 1978-79, to further elucidate the point. Enrollment increased during this period by the following percentages: Ahmadu Bello (ABU) 34 percent, Benin 77 percent, Ibadan 43.6 percent, Ife 43 percent, Lagos 51.8 percent, and Nsukka 31.7 percent. Such rapid increases placed a strain on educational technology resources in the service area. Areas of production such as graphics, videotape, and audio recordings are heavily used in all institutions. Those programs which combine a teaching and service function find that their facilities for this purpose are particularly over burdened. With large classes becoming a regular feature in all universities it would appear that instructional changes should be devised. Instructional closed-circuit television is already being utilized in some institutions to handle such classes. The overall instructional methodology, however, has not changed. An examination of alternative methods might be the more significant approach.

Personnel

The type and nature of infrastructural support in each institution varies according to its size of operation, organizational structure and function (see figure 9). An analysis of questionnaire data indicates that university-wide programs employ a larger number of personnel (19.3)

Figure 9.

COMPARATIVE ANALYSIS OF ENROLLMENT FIGURES
1973/74 AND 1978/79 *



*All figures obtained from the Office of the Registrar in each institution.

Figure 10.

Mean Number of Employees
According to Scope, Organization & Function

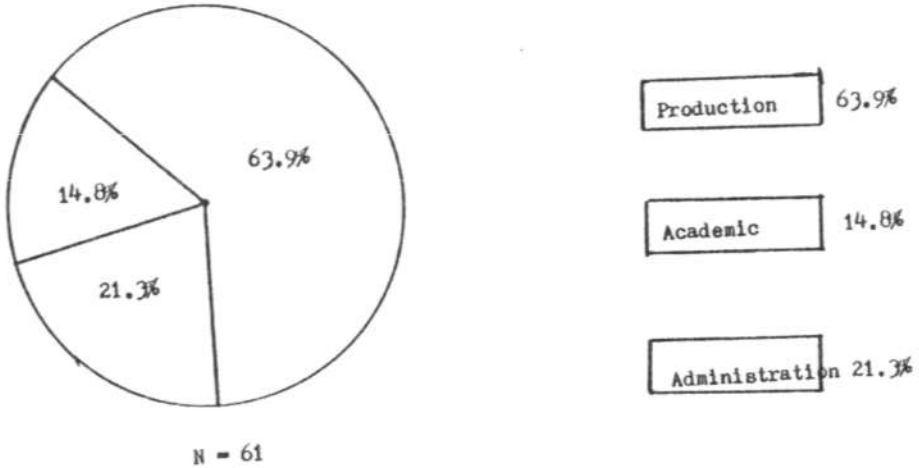
Description	Mean Number
Scope	
University-wide	19.3
Faculty	8
Organization	
Autonomous	18.3
Faculty based	12.6
Function	
Service	13.3
Teaching/Service	17.6

than faculty based programs (8). Autonomous centers employ more personnel (18.3) than faculty based programs (12.6). University-wide operations also tend to be autonomous centers. Dual objective programs employ more personnel (17.6) than single objective programs (13.3). A classification of personnel (Figure 11) reveals that of the 61 participants in the sample, 39 or 63.9 percent are in the area of production, 9 or 14.8 percent perform academic work, and 13 or 21.3 percent are in administrative positions. This could also be significant in the level of influence of educational technology in the university. Production personnel would operate mainly at the media production level. A further analysis on job performance indicates the degree of flexibility of such persons within their respective work environment (Figure 12).

Academic personnel tend to be the most rigid in terms of job performance. This, of course, could reflect the university regulations governing the appointment of academic personnel which specifies an academic role to the exclusion of others unless specifically stated in the terms of appointment. Few administrators perform solely administrative work. They are expected to combine this responsibility with some other function. This would seem sensible in light of staff shortages and the need for flexibility among all personnel. The data also suggest that technical and production personnel learn each other's jobs. The technician, for

Figure 11.

CLASSIFICATION OF MEDIA PERSONNEL



N = 61

Figure 12.

JOB PERFORMANCE ANALYSIS

A. Production Personnel



N = 39

Tech./Prod.	48.7%
Prod. Only	28.2%
Prod./Academic	15.4%
Tech. Only	5.1%
Adm./Prod.	2.6%

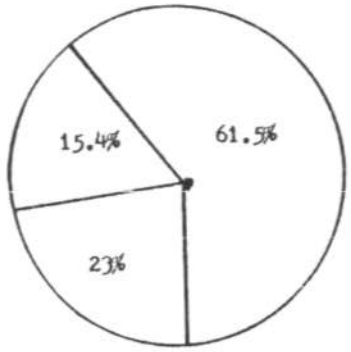
B. Academic Personnel



N = 9

Academic Only	66.7%
Acad./Admin.	22.2%
Acad./Prod.	11.1%

C. Administrative Personnel



N = 13

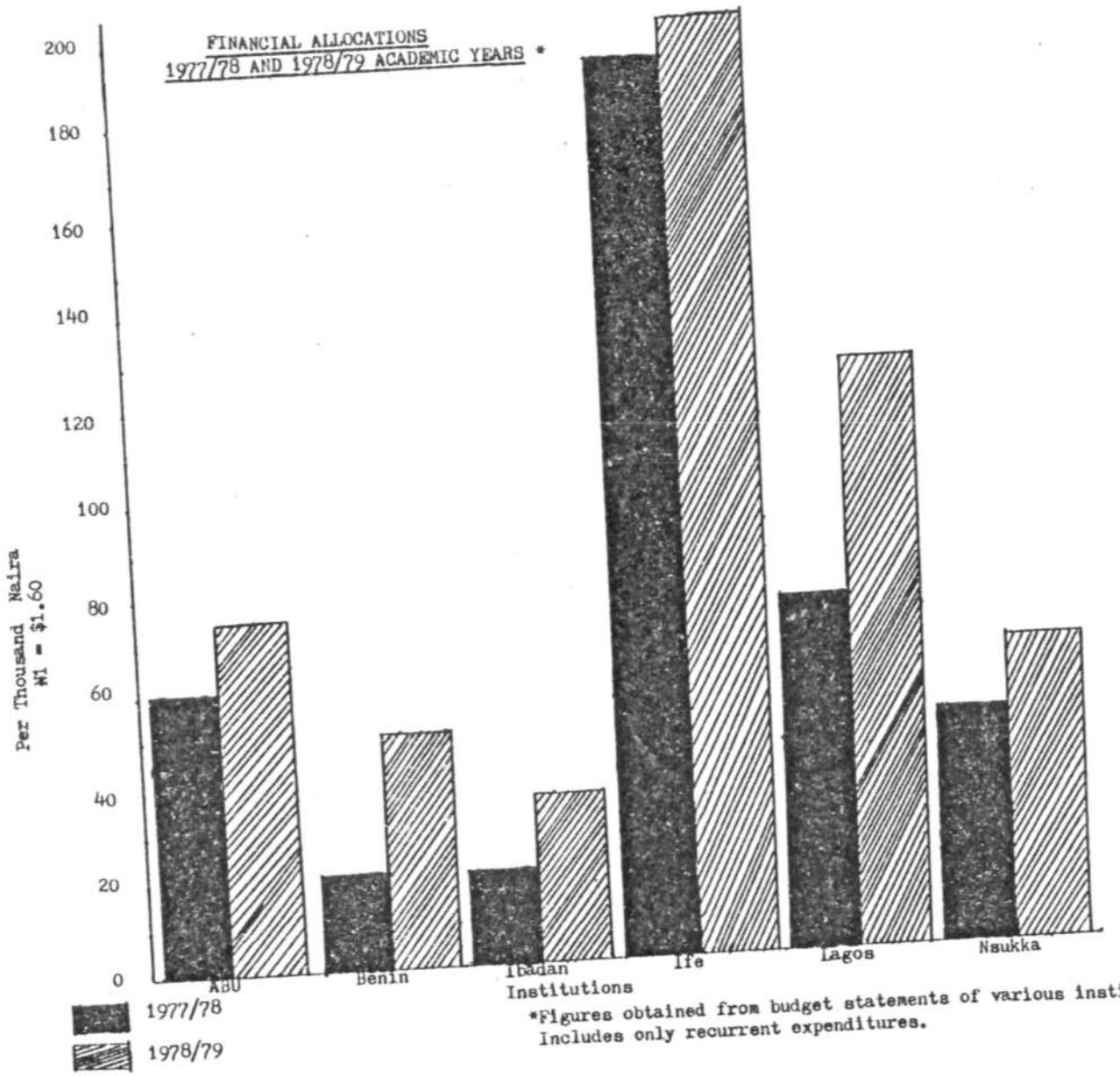
Admin./Academic	61.5%
Admin./prod.	23%
Admin. Only	15.4%

example, might also do audio production and the graphic artist might serve as cameraman in a CCTV production. This type of flexibility is crucial to the proper functioning of an operation where skilled staff are in very short supply.

Finance

Educational technology programs are very much affected by the cut in funds to the university by the federal government for the academic year 1977-78. Half of the sample (3 case studies) identified their financial allocations as inadequate. Since some programs are more established than others, this could have serious implications for future development. Figure 13 gives a comparative view of finances for the academic years 1977-78 and 1978-79. These figures include only recurrent expenditures, since capital project proposals are submitted separately. An analysis of comparative figures shows that autonomous centers receive larger financial allocations than faculty based programs. Case Study 6 (the University of Ife) is an exception in this instance. Its superior financial position as a faculty based program could result from its previous autonomous status (it was converted from an audiovisual center to a department in 1976) by virtue of which it was granted a substantial sum each year. This amount has since continued to be increased each year but on a smaller percentage basis.

Figure 13.



*Figures obtained from budget statements of various institutions.
Includes only recurrent expenditures.

Faculty based programs must share a total faculty grant with several other departments, each competing for funds for its own program. Finances are allocated based upon justifiable needs. The size and nature of departmental programs are significant factors in the amount allocated. Where educational technology programs are sub-units of a department, this departmental grant is further divided based on the same criterion. The status of autonomous centers is an important factor in the amount of money received (i.e., centers and units normally receive more than departments). It would appear that faculty based programs are at a disadvantage in terms of financial allocations due to their departmental or sub-departmental status.

The procedure for submitting budget requests is different for the two organizational structures. Autonomous centers submit proposals direct to the university Budget and Planning Committee. Faculty based programs submit proposals first at the departmental level (in the case of units or centers) and then at faculty and senate levels. At each stage justifications must be given for requests further reducing the possibility that original requests will be granted.

Space

The space related features of the educational technology program were concerned with such things as classrooms, lecture theaters, teaching centers, resource centers, and

production areas which are considered major space facilities. The concept of a teaching center is rapidly being accepted in universities. Such centers are able to hold approximately 300 to 500 students and may be equipped with varying media facilities (overhead projectors, microphones, slide projectors and audio facilities). Half of the sample had such centers in their institutions. Lecture theaters were found in all case studies in varying quantities and were used for large basic courses and oversized classes. These were usually equipped with microphones, chalkboard and in some cases television monitors for closed-circuit television replays. Media resource centers, sometimes called instructional resource or educational resource centers, were found in Case Studies 2, 4 and 6, although in varying stages of development. These provided supplementary curriculum materials in various subject areas, a limited range of equipment, and small media production areas. The above resources, where they existed, are far too few to accommodate the rising student enrollment. Space for general media production was inadequate in all institutions, although only 83 percent of the population identified it as inadequate. None of the facilities were designed for educational technology but were either improvised or renovated for this purpose. This makeshift approach to the use of space prevents a systematic development of educational technology.

Equipment

This study was also concerned with ascertaining major media resources that had the capacity for mass distribution or could be used with large audiences. Case Studies 2, 3, 4, 5, and 6 had closed-circuit television facilities. However, only Case Study 6 had developed a distribution network (providing delayed replays) that included several faculties other than education. These units were equipped with the latest media, purchased at very high costs. Local film production is a rarity. One case study (6) produces some of its needs in 16mm films. Its facilities are highly developed for production but not for development, which is done overseas, usually in England. Development equipment for 16mm film is extremely costly and requires specialized maintenance, which probably indicates why it has not been acquired. Facilities for large scale audio production exist in three institutions (Cast Studies 2, 5 and 6). Soundproofed areas and the necessary recording equipment are available for the production of reel-to-reel and cassette tapes. Graphic production is the most common in all institutions, perhaps because of its popularity in teaching over other forms of media. Equipment for large scale production is not available. This function is carried out by a person, usually a graphic artist with some training in the preparation of graphics for instructional purposes. The shortage of skilled graphic artists, however, often means that quality

work is not always produced. Offset printing facilities have been acquired by Case Studies 3, 4 and 5. These are presently used to print such things as certificates, graduation announcements, bulletins, specialized graphics, programs, pamphlets, simply designed books, and other curriculum materials. Case Studies 4 and 5, although the most developed in this area, are prepared to handle only small scale productions.

The resource crisis which universities are facing (shortage of staff and space, in particular) has encouraged the consideration of campus radio stations for instructional purposes. This type of capital investment, a major undertaking, would necessitate a firm university and perhaps government commitment on financial grounds. Proposals for radio stations are being considered by Case Studies 5 and 6. The Mass Communication Department at the University of Lagos (Case Study 2) already transmits "signals to the campus," and has two large commercially equipped radio studios. The development of radio facilities could possibly relieve the burden on existing space and staff.

Summary

The overall findings on the nature of educational technology in universities indicate its use only at the media production level as largely supplemental to the instructional process. The structure of educational technology

within the overall system of education has affected the nature of its contribution. Faculty based programs by virtue of their location, assume faculty interest and therefore do not have university-wide appeal or involvement. Autonomous centers have university-wide contact but only at the service level. They are not structured in such a way that they could, for example, influence curriculum decisions concerning the design of materials. An examination of this organizational factor and others that affect the integrated use of educational technology are discussed in Chapter V.

A Comparison of National Objectives and Programs in Educational Technology

National objectives as assessed according to the new national policy on education emphasize the importance of the following in educational development: (a) manpower training, (b) practical knowledge based on a scientific orientation, (c) equal access, (d) greater access and (e) community service.

Manpower training. The university's role in the development of manpower for the country is considered to be very crucial, yet in the past universities have only been able to make a minuscule contribution in this direction considering the overall manpower needs. The manpower training emphasis has been more pronounced during the last three years. A radical transformation of the society is the focus of the

Third National Development Plan which spearheads this new emphasis. It specifically states that it shall ". . . consolidate and develop the nation's system of higher education in response to the economy's manpower needs" (p. 245). In expanding university facilities, the government is seeking to utilize these and, indeed, all such facilities for its stated objective. The concomitant increase in student enrollment and the selective deployment of students indicate the seriousness of the federal government in this matter. It further states,

> Greater attention will be paid to the distribution of students into the major disciplines so as to give greater emphasis to the study of medicine, pure science and technology. A 60:40 science/humanities ratio will be deliberately pursued. (p. 248)

To assist universities in the identification of manpower needs, a representative from the National Manpower Board is represented on the National Universities Commission, a liaison body between the federal government and the universities.

Practical knowledge/scientific orientation. The emphasis on science and technology expresses the federal government's concern for a more practical approach to education, rooted in the needs of the country. In the areas of engineering and agriculture, working committees were set up to advise universities on the restructuring of curriculum to make it more relevant to the needs of the economy. A closer link between the world of work (including business and industry) and universities is being forged in an attempt to provide

relevant work experience for potential professionals. Universities are also being encouraged to keep abreast of the latest developments and professional techniques and to make these available to their students. At all levels of education, the scientific orientation is encouraged to be emphasized through financial remuneration in the desired areas. Professor Iya Abubakar (Note 13) echoes this science and technology emphasis, yet warns that to receive its fullest benefits, implies a change in the social system.

Equal access. Historical and religious factors have largely been responsible for the unequal rate of educational development in Nigeria. This problem has continued to be a vicious circle with the more highly educated being favored in university admission procedures. Equal access implies a loosening of previous restrictions to accommodate those less favored (either because of lower academic qualifications or for financial reasons). The national policy specifically states:

> Maximum effort will be made to enable those who can benefit (who have the necessary capability) from higher education to be given access to it. Such access may be through universities, or correspondence courses, or open universities, or part-time and work-study programmes, etc.

Further removing the access barrier, financial support will continue to be provided in the form of scholarships and loans, until such time as tuition-free education becomes a reality. To ensure a fair geographical spread of students

in all institutions, a Joint Matriculation Board has been established, whose responsibility it is to conduct selection exercises and oversee final admission to all universities.

Greater access. Nigeria's seven new universities were meant to offer more opportunities for higher education. In conjunction with this, scholarships are still provided for overseas study, keeping open alternative avenues, to the still crowded universities in the country. Equipment acquisition and infrastructural changes which favor greater access without necessarily raising costs are, in theory, being supported.

Community service. The university is expected to involve itself in the life of the community surrounding it, through extramural classes and extension services or rural development work. Each department is expected to offer some aspect of extension service and, where possible, coordinate such activities with other departments to avoid duplication and to provide a more interdisciplinary approach. Community service is seen as a way of fostering community spirit and national cohesion. The National Youth Corps Service scheme introduced by the federal government provides an opportunity for university graduates to render service to the community and nation and also to help foster national unity. Under the scheme, each university graduate (and now graduates from other higher institutions), male or female,

old or young, must spend one year in an area of the country, other than his own, gaining practical experience (and rendering service) in his chosen profession.

Implication of Objectives for Educational Technology

The new objectives represent a radical shift in educational policy and have several significant implications for educational technology. If stated objectives are to be successfully achieved, educational technology must be an integral part of university education as is evidenced by the shift in educational policy.

Educational objectives have significant implications for the use of educational technology at three levels: instructional systems planning, instructional design and development, and media production. Educational technology could be applied in the planning of an instructional system to accommodate the traditional and non-traditional learner. The planning of flexible instructional methods that meet the needs of various ability groups could be possible. This systems planning approach would require a change in the traditional organizational structure to permit the integration of non-traditional methods. Traditional instructional roles would also come under scrutiny with a view to maximizing resources and creating greater flexibility and efficiency.

Educational technology can also be useful toward a systematic approach to the planning and design of curriculum

in order to provide a flexible yet accountable system. Carefully stated objectives allow for continuous assessment as emphasized in the new policy. Such a system accommodates curriculum changes as necessitated by the changing needs of society. The present shift in curriculum emphasis in favor of the sciences (60:40 ratio) is a notable example. Universities have not employed a systematic approach to curriculum design and will, therefore, find such a shift in emphasis cumbersome. Alternative instructional methodologies can be designed. The traditional or conventional lecture/tutorial method alone will not be sufficient to accommodate the varying student needs and abilities and the sheer numbers, inevitable under the new system. Planning for large group instruction is necessary and the use of electronic media capable of large group dissemination such as radio and television are alternative methods which could be employed. Other techniques could be developed employing the use of film, audio tapes and other projected materials. Audio tutorial methods offer possibilities for small groups and individualized instruction. Instructional development methods would take into consideration the whole range of learning styles.

Media resource planning and production is another level at which educational technology can be employed. The production of instructional materials determined by curriculum needs would mean greater relevance to the social and cultural

environment. The present service nature of media production indicates that instructional materials are being produced by media specialists without their knowledge of curriculum content. The service only role can be eliminated through the involvement of instructional technologists at the curriculum level. This would also ensure an integrated role for instructional materials in the instructional process rather than their use as supplements.

Educational objectives lend themselves to a comprehensive and integrated use of technology as suggested by the three levels of application above. Each of these levels is complementary to the other and are all vital features in a comprehensive policy. Given the implications for educational technology, what is its present role in helping to achieve national goals?

Do Programs Assist in Implementing National Objectives?

A functional analysis of educational technology in universities suggests that operation is restricted largely to a service function and performed at one level of application, and as such is not capable of playing an instrumental role in the overall system of education. This service function places educational technology in a supplementary role rather than integrating it into curriculum design. More specifically, this service role is exemplified in the various functions performed.

The opportunity to design curriculum could only be realized if educational technology were an integral part of curriculum planning. Given the structure of the university in Nigeria, it is only an autonomous body that could possibly play such a role. Faculty based programs exhibit faculty interest first and are structurally impeded in implementing university-wide objectives. Autonomous centers although potentially influential, lack the proper organization to affect various levels of curriculum. A total integrative approach to curriculum does not therefore exist.

Further evidence concerning the service nature of the development of educational technology is its use in emergency situations such as that caused by the present enrollment crisis. Some teachers overwhelmed by large classes use television programs, films or other graphic materials as expedient measures without regard to curriculum plans. Such instructional strategies only seem to temporarily patch-up the problem. The question can be raised as to whether there is sufficient awareness concerning educational technology and its use to do otherwise.

While the data provide no evidence suggesting resource planning, resource production is very much a part of the service function. This "cart-before-the-horse" approach leads to a resource collection not determined by curriculum needs, but by individual wants--indeed, a costly approach in the long run. Resource planning would involve making

decisions concerning the use of resources at the curriculum design and development level. Decisions made at this level are then implemented at the media production level. This systematic approach to the production of instructional materials combining resource planning and production eliminates a service only function.

The contribution which educational technology could make toward the achievement of national objectives is very much constrained by a number of forces. Its role, therefore, as primarily supplementary renders it ineffective in the total curriculum process. Recommendations concerning a more integrative role are given in Chapter VI.

Conclusion

National objectives indicate a prominent role for educational technology in the development of university education. However, the implications for educational technology represent a focus which does not presently exist in any institution. The ability to assist in achieving national goals are constrained by several factors: (a) insufficient institutional guidelines for the implementation of national goals, (b) the lack of awareness of educational technology as a methodological tool for designing instructional systems, and (c) the organizational structure of the university which perpetuates a traditional approach to curriculum and instructional design, thereby restricting the integration of educational technology. Hence, programs are reduced to a purely service function in support of the existing system.

CHAPTER V

FACTORS AFFECTING THE DEVELOPMENT AND USE OF EDUCATIONAL TECHNOLOGY IN NIGERIAN UNIVERSITIES

A number of factors can be cited as being instrumental in the present state of development of educational technology and the application which is made thereof. As was concluded in Chapter IV, educational technology is primarily service oriented and, therefore, is not an integral part of university education. This chapter examines those factors which mitigate against integration and discusses the influence of forces demanding change, thereby suggesting a new role for educational technology.

An analysis of case study data reveals that five major factors have contributed to the present status of educational technology in universities. These are classified as: (a) organizational structure, (b) infrastructural constraints, (c) professional attitudes, (d) university enrollment, and (e) government policy. While these factors have played largely negative roles, the latter two have also been instrumental towards the realization of a new concept of educational technology.

Organizational Structure

The institutional structure (described in Chapter IV) has had the effect of reinforcing traditional authority patterns, thus preventing the integration of educational technology into the overall system of university education. Roles at each level in the hierarchy tend to be rigidly defined and performed. Positions are jealously guarded from infringement or invasion by innovative methods such as those which educational technology employs. The bureaucratic nature of the institution reinforces and supports this rigid authority pattern. According to the vice chancellor at the University of Ife, "The university system has become increasingly bureaucratized; and bureaucracy does not readily tolerate exceptions to the rule. Indeed the essence of bureaucracy is the rule and adherence to it" (Aboyade, Note 14).

The crises facing universities (i.e., increased enrollment and resource shortages) have posed a challenge to the existing system which was not set up to handle such situations. Tickton and Carlisle (1970) summarize it thus:

> With enrollment growing, school systems have ballooned . . . but with little change in organization, method, or orientation. Curriculum? Mainly the same as always. Classroom instruction? Traditional techniques. The clientele may be bigger, but elitist, colonial-era methods persist. (p. 33)

They go further to quote a school administrator who was against minor adaptations and suggest that until such time when "a new organizational and administrative structure is

created, there will be small prospect for success in gaining the full potential of recent advances in science and technology to dramatically improve learning." In developing countries the need for a new organizational structure is even more acute, since the rapid pace of development, the "race against time," places far greater demands on the existing structure. Dieuzeide (1971) laments:

> There seems to be a risk that most of the developing countries which seem willing to skip the stages of the slow educational development of the countries which were industrialized in the nineteenth century, will insist on repeating an historical process that will end in a general crisis. It should be considered whether the introduction of new technologies in education would not enable developing countries to free their schools (including universities), while there is still time, from the educational models which belong to the past of the developed countries of which they imitate, not merely the structure, but also the implicit or explicit objectives. (p. 170)

Educational technology has developed within this traditional model, suited neither to the existing needs of the country nor to the changing needs of the future. Little wonder, then, that the audiovisual aids concept still persists, with educational technology being used purely as a stop gap measure. The specific constraint placed on educational technology by the present system is in terms of its bureaucratic nature, resulting in rigidly defined roles at all levels.

Looking at education as a system as educational technology seeks to do, would indeed be a radical change from the present context. However, this is precisely what the

new national policy on education suggests. "Government is considering various proposals for further liberalizing and democratizing access to higher education" (Note 15). Such aims cannot be achieved without a change in organization. This dynamic role being pursued by government is further elucidated in the following statements.

> Education in Nigeria is no longer a private enterprise, but a huge Government venture that has witnessed a progressive evolution of Government's complete and dynamic intervention and active participation. The Federal Government of Nigeria has adopted education as an instrument par excellence for effecting national development. (p. 3)

In order to develop an instructional systems approach, which could be flexible, accountable and most of all adaptable to changing needs, requires a new organization. Faure (1972) summarizes it as follows:

> The answer is not merely to modernize education from the outside (although this is often what people try to do), "simply solving equipment problems, preparing programmes for using that equipment and inserting them into traditional pedagogic activities, but to make systematic use of available resources to develop a scientific awareness in the individual of methods of acquiring and using knowledge. The aim is to avoid economic and financial wastage by co-ordinating the educational techniques which are at present available to us, as completely as possible." Educational technology is not just apparatus to be clamped on to a traditional system, adding or multiplying traditional procedures. It can only be of value if it is integrated into the entire system and if it leads us to rethink and renovate it. (p. 131)

National policy has, indeed, implied a new role for educational technology, a challenge to Nigerian educators. The transformation of such into reality, calls into question,

not just motivation, but a number of other equally important factors. The administrative structure has to be geared to support such an innovative climate.

Infrastructural Constraints

While the overall university structure has mitigated against the integrated development of educational technology, a number of infrastructural constraints also combined to further reduce its impact on the existing system.

Reward System

An important criterion in the acceptance of change is the motivational factor involved. In this regard, it is important to examine the reward system as a motivational factor or incentive towards the acceptance and use of educational technology. In Nigerian universities, as in most around the world, the primary emphasis is placed on teaching (the transmission of knowledge) yet the criterion for reward (promotion or achievement) is evidence of research, usually in the form of publications. This contradictory practice has led to a number of problems, not the least of which has been a lack of interest and concern with the teaching process. Great emphasis is placed on the content to be taught, rather than the process of teaching and learning.

Under the present reward system, those who do research and can show evidence thereof, obtain the prescribed merit. There is no comparable system with reference to teaching. The only reward (non-material) is the good will of the students and their gratitude and success. This kind of reward is perhaps adequate for that small group who seek no material gains but, instead, the personal satisfaction of having made a significant contribution to the development of mankind. In addition, there is perhaps the added psychological satisfaction of being in control of a class, in control of people. The classroom, then, becomes a symbol of one's authority or domain rather than a place for learning. For the vast majority, this personal satisfaction, while important, is inadequate in and of itself. Hence, energies tend to be exerted where the greatest reward is to be found, in research and publications. While it is realized that research is a significant part of development and progress, it is pointed out here as an anomaly in the university's priorities, given its goals.

Vargas (1976) argues that the university is organized around content, and that the basic premise in teaching is that knowledge of content is most important. The process of teaching and learning is taken for granted. As long as the information is presented by the professor (regardless of nature or form), the student will learn. This is a basic assumption. He further states:

> Little has been known about it (teaching) that was not mere art form. "Teaching," it is implicitly argued, might as well be done by experts who could do it as well as anyone. Since teaching was equated with talking, the content expert should have authority over teaching. He at least would have something to say! (p. 309)

University dons, therefore, may be highly skilled in their subject fields, but may have no expertise whatsoever in transmitting this knowledge to others. This emphasis on the product, rather than the process further changes the nature of the reward.

The reward system has direct implications for the acceptance and development of educational technology which aims at an effective instructional process. Since the system places little value on the quality of instruction, the application of educational technology methodology is not considered significant. Its use as a prop to the existing system is, therefore, more readily understood. To make an impact, this system (and hence a reordering of priorities and thus rewards) would have to change. The reward system has to be geared to rewarding innovative behavior rather than punishing it. Those teachers who dare to be innovative in their teaching simply find an increased work load and soon relinquish the idea. In this instance, static attitudes and practices have been reinforced. Finally, educational technology is, perhaps, in direct opposition to the basic university thesis, with reference to teaching. It is process oriented, concerned with all elements in the teaching and

learning process, rather than being product oriented (a concern for only what is taught). One can take this argument a bit further and say that learning, also, is secondary since no attempt is made to foster this process through improved methodologies and techniques. Fraley (1975) has suggested that a new tradition should be started in education which bases reward on the learning outcome. This according to him would force greater concentration on the teaching process.

A change in the reward structure is a necessity if universities are to maintain quality education. McMillan (1975) recommends that universities conduct teacher evaluations based on specially designed instruments to test the quality of teaching. He further suggests that such results should be the criterion for promotion. If academic staff are to be encouraged to do quality teaching they must be given credit for innovative work. Gaff (1975) states that those members of staff who work on instructional development projects are not allowed to claim any credit toward promotion. This would not be the same situation with the publication of a book. He also emphasizes the importance of institutional policies which support instructional development work as a crucial factor in bringing about a change in reward structure.

In looking at ways to foster a change in the reward structure, Diamond (1973) also emphasizes the significance of an institutional commitment:

> Major change will not happen by chance, and it will not be easy. For example, changes in program and in the reallocation of resources are often directly in conflict with both tradition and the existing campus power structure. (p. 7)

He further states:

> 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 specifically allocated for the purpose. (p. 7)

If institutions are serious about the quality of instruction and therefore learning, academics will be encouraged to do quality teaching and have the appropriate reward attached to it. Learning is after all the primary objective of the institution. Bass (1978) states that:

> The institutional structure must reward faculty for quality teaching and innovation in instruction. Rewards such as campus recognition, faculty teaching awards, and the like are a step in the right direction, but they are not enough. The most effective rewards are in the nature of official recognition by the institution in terms of promotion, tenure, salary, and other marks of status. (p. 135)

Personnel

Crucial to the development of educational technology is the availability of adequately trained personnel. Educational technology as a discipline has existed in Nigeria for approximately five years. However, various audiovisual aids and their use date back as far as the early 1950s. The lack of adequate personnel could partly be due to the lack of awareness concerning the field of educational technology. Technicians and production personnel have been more readily available than persons academically trained, and yet it is the latter that

could provide the necessary theoretical framework and expertise for the development of the area. Case studies data indicate that of the total sample in universities 14.8 percent were academic staff, while 63.9 percent were production. These figures indicate the service nature of educational technology as presently exist in all institutions. However, if the focus of educational technology changes to a more comprehensive one, this ratio could also be altered. More personnel should be trained in the area of instructional development. Another important insight from the data is that academic personnel tend to be highly inflexible in their job performance, indicating perhaps an adherence to the internal organization of the university. It would appear that although such persons are trained in educational technology their roles are structured along largely traditional lines. This is not the case, however, with production staff, who because of their non-academic status and roles, can have considerable leverage in the performance of their tasks. Hence, they can perform all functions within the scope of a particular program including academic. Another important factor in the rigidity of performance of academic personnel is perhaps the traditional attitude associated with the role (i.e., an abhorrence of manual labor).

The shortage of personnel, together with the inflexibility of academic personnel are significant factors affecting the development of educational technology. The need for trained staff has been ascertained, and a number of

avenues are being pursued to alleviate this shortage. The federal government now provides scholarships in educational technology for overseas training. Such persons would eventually be employed by universities, federal and state ministries, and local authorities. In addition, training is also being provided at a number of institutions in Nigeria. Technical colleges offer courses at the diploma and certificate levels for intermediate personnel. The University of Ibadan offers a graduate program at the master's and doctorate levels in educational technology. Ibadan's efforts will be supplemented in the 1978-79 academic year by the start of graduate programs at the universities of Ife and Ahmadu Bello. All of these initiatives have been inspired to a large extent by the new policy statements concerning various new facilities in the country. In the meantime, however, such developments are likely to be partially paralyzed by the lack of adequate staff, among other constraints, and may have to institute their program in stages.

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Finance

Finance is one of those interlocking factors which tends to have ramifications for many others. In the university, this is particularly true since the federal government makes a single allocation to it, and this in turn must be shared throughout. The criteria for the allocation of federal funds are to a large extent based on present developments as well as priorities for development in particular universities. Case studies data indicate relatively low financial allocations

for the majority of educational technology programs, reflecting in some cases low priority. Two of the six cases are units and therefore depend on the department to which they belong for the allocation of funds. These funds are distributed using departmental priorities as criteria. Finance was identified in all case studies as a major cause of inefficient program operation. The concern was mainly the lack of finance for equipment and materials acquisition, maintenance and capital projects.

 Equipment and materials are all imported. The prices are phenomenally high when one considers the cost of import plus the actual cost of the item. It is little wonder that such expenditures form a major part, if not the major part, of each institution budget. Given this restraint, the amount of resources which can be purchased are always severly limited.

Major capital projects such as the development of closed-circuit television studios (for those institutions not having such facilities already) and the installation of radio stations presently under review in some universities have been indefinitely shelved because of the overall cutback in funding. It is not forseen when the financial picture will be brighter and perhaps it is unrealistic for 13 institutions to depend solely on the federal government for support. A number of vice chancellors have advocated

supplementing the federal allocation with active solicitation of private funds, such as business and industry as well as grants from international organizations. The National Policy states that university education will soon be tuition free, thus further reducing the amount of funds available for running institutions.

With greater emphasis being placed on science and technology, it would seem likely that educational technology be given priority consideration in terms of its financial allocation. Existing programs in educational technology, however, with their present focus would find it difficult to justify the increased financial output.

Space

Several important space considerations can be cited as significant factors in the development and use of educational technology. These can be classified under (a) storage and distribution of material resources, (b) production of instructional materials, and (c) academic and administrative functions. The ad hoc development of educational technology resulted in the use of facilities which were not designed for this purpose. Hence, many of the physical and technical features are less than desirable. Eighty-three percent of the sample identified their present space resources as inadequate and a cause of program ineffectiveness. Of the areas indicated above, the most inadequate provision was made for space storage and distribution of materials and

equipment. From case study observations it was found that in practically all cases improvised areas were being used with practically no planning for temperature control. Production areas were well defined but not usually well equipped and maintained for efficient service. A prudent use of space for this purpose was not always discernible. Facilities for academic purposes, such as classrooms, lecture theaters and teaching centers, are available in some institutions, yet are not in sufficient numbers to accommodate the large demand. Capital building projects, halted because of lack of finances, would have provided specific educational technology buildings for four institutions. Many operations are, therefore, carried out on a makeshift basis.

Instructional Resources

Instructional resources are intended to include both equipment and the accompanying software. In all institutions there is a real dearth of such resources, both those produced in the country and abroad. Equipment is often available without the necessary software indicating a greater emphasis on the former. Suppliers who deal in software find their stocks constantly depleted from the unusually high demand on a small supply. Overseas shipments take long periods and are extremely costly. The normal time for arrival is approximately one year, in some cases more. Needless to say, it is impossible to plan for the integration of such resources

when an adequate supply cannot be ensured.

Curriculum materials are not available for many subject areas indicating the lack of an interdisciplinary approach. To facilitate the use and development of educational technology, a relevant and constant supply of instructional resources should be available. Resources could, in addition, be more fully utilized. However, existing resources need to be coordinated into the framework of an overall curriculum plan. Inadequate maintenance forces many resources to be abandoned. The lack of maintenance and repair often, however, results form the non-availability of spare parts which is a major problem in all institutions. Catalogs list many items as available that are in reality out of order, damaged or non-existent.

Professional Attitudes

Educational technology as an innovation in education has been faced with some of the traditional problems of diffusion and adoption. Crucial to the adoption of an innovation is an awareness and understanding of the innovation. An analysis of questionnaries revealed a large portion of respondents indicating lack of knowledge as a prime factor in the poor response to technology. Questionnaire items further revealed that none of the institutions studied had a public relations program that communicated the role of the

program and its contribution to the goals of the university. Such informational data, where they existed on programs, were either outdated or incomplete, with no systematic description of offerings. It was largely by enthusiastic individual effort that educational technology had been publicized. Without an organized strategy involving those to be affected, such efforts would hardly be successful. Husen (1974) states that an educational innovation, as indeed any innovation, will not be accepted automatically. A strategy has to be planned, initiated and implemented.

The ad hoc nature of the development of educational technology could reflect stages of awareness at particular times by few individuals, anxious to try out new ideas. The same degree of awareness would not exist for those in the institutional setting where the new idea is being imposed. It represents a kind of "top-to-bottom" development which has never really been successful given the institutional response to educational technology. The lack of awareness and understanding of educational technology has been an important factor in its development and use in the Nigerian university. It now remains for those knowledgeable in the area to develop specific strategies for informing those educators and government officials of the potential benefits to be derived from its integrated use.

Providing information can also reduce the degree of resistance to change often reflected in highly defensive

attitudes. Interview data analysis indicates that many academic staff in the university felt there was no need for educational technology since lecturers were performing adequately without it. This kind of attitude largely suggests a deeply rooted traditional bias. Husen (1974) eludicates this point thus:

> Educational practices are indeed deeply entrenched, because they have prevailed for decades, not to say centuries. Even minor changes, for instance in the emphasis on different topics in teaching a given subject, might take quite a time. The teaching role is tied to heavy anchors. (p. 146)

It can be argued, as indeed Heinich (1976) has done, that educational technology poses a threat to the traditional role of the classroom teacher. The class and classroom are seen as a domain of authority, where the teacher exercises complete control. This view offers a tremendous degree of satisfaction for those who see themselves as professional teachers first. It serves as a kind of reward in itself, and, for many, a sufficient reward. Any attempt, therefore, to alter, modify or change this role will be met with resistance. Such professionals see teaching as a craft rather than a science and tend to resist any technological innovation. University organization reinforces this attitude through its emphasis on content rather than the process of teaching and learning. Dieuzeide (1971) states that educational technology seeks to "transform the very nature of the educational system to which it is to be incorporated" (p. 185). It is this transforming quality which professionals,

particularly educators, discern and actively oppose. Such entrenched biases are indeed formidable, and will require an institutional strategy based on cooperative effort to eliminate.

Carlson (1971) suggests that problems of introducing educational innovations must be tackled mainly at the local level. That is, there is a need to work with teachers to create a favorable climate for the acceptance of educational technology. This suggestion is especially significant since instructional strategies deal with internal institutional innovations rather than the overall structure. Innovative instructional strategies requiring a change in instructional roles can only be implemented at this level.

Husen recommends what he considers an effective strategy for handling professional resistance based on traditional allegiances. According to his assessment, sensitivity training should be carried out with teachers, to give the impression that they are involved in the innovation. The focus is on "discovering the consequences and outcomes of one's practices and thus help one to discover what is wrong" (p. 151). This kind of approach should prevent the creation of defensive barriers against any perceived threat, and, instead, help to have a detached and critical attitude toward one's own methods and practices. Another method might be to introduce new approaches to instruction at the teacher

training level, thereby influencing potential teachers before professional biases are entrenched.

University Enrollment

The phenomenal increase in student population over the last five years in all institutions has been a significant factor in the development and use of educational technology. It has at once had a positive and a negative influence. The negative factor arises out of the physical dimensions of the crisis causing expedient measures to be taken to relieve, not alleviate, the situation. This kind of approach resulted in the use of educational technology as a stopgap measure rather than as a methodological tool for reforming the educational system. Academicians suddenly faced with large classes often used whatever media or methods were expedient. In many cases television, film and other graphic materials are used but solely at the inspiration of the instructor concerned. Fringe activity of this nature fosters a service approach to the development of educational technology.

The enrollment crisis has also encouraged a critical look at the structure of university education with particular concern for the demand for greater access, equal access, and quality education. The question arises as to whether the traditional university model can accommodate these demands. The critical look at university education is exemplified in the national policy on education and its specific

statements on objectives for the university. A national committee, set up during the crisis period, to take a critical look at the present university system, is largely responsible for this new direction. Direct implications exist for a more integrated role for educational technology as a result of this new direction. Therefore, while university enrollment has served to foster an ad hoc development of educational technology, it has also indirectly encouraged a more integrated approach.

Government Policy

Government's total involvement in university education is a relatively recent phenomenon, beginning only in 1975, with the takeover of all universities in the country. This involvement has also meant a considerable degree of influence in the determination of policy for these institutions which is usually justified on the basis of its financial commitment. Thirty-three percent of the total sample identified government's financial policy as a major factor in their inability to implement program operations. Specific reference is made here to the recent cutback in university funds. Respondents indicated that the purchase of major equipment items such as color television, language laboratory and 16mm film processing was impossible. Capital projects such as specialized educational technology buildings,

teaching centers, and campus radio stations have all been indefinitely abandoned. Government's policy in this instance is conceived as being a negative factor in the development of educational technology.

Conversely, it has also had a positive influence. On the basis of its financial input, it determines national educational policy priorities. Its most decisive and systematic statements on education were published in 1977, although discussion on educational policy had been underway since 1973. This new policy is new indeed, in that it is a radical change from anything in the past. It is, in fact, intended to "transform the educational system." A notable shift in the policy is that away from the teacher to the learner. Efforts appear to be made to meet learner needs, according to learner abilities. This in itself opens up new prospects for educational technology. The positive implications for educational technology discussed in Chapter IV also represent a radical shift from present applications as exemplified in case studies. Implied is the use of educational technology in the overall planning of university education. This would have implications also at the primary, secondary, and post-secondary institutions. Husen (1974) states that a change in educational structure, "must be backed by legal force and administrative decrees which follow on legislation by the national government" (p. 153).

A number of studies have dealt with the organization of educational technology within existing institutions. Heinich, King, and Oglesby (Note 15) suggest that educational technology services should be closely linked to a key administrative position with academic responsibilities. In their study of learning resources at Ohio State University it was recommended that a special office be created within the central administration to deal with matters of instructional development and evaluation. Since the clients for such educational services are university wide (that is, departments, schools, colleges and the board members) the central location of this service, they suggested, would be more advantageous. The Michigan State educational development project is another similar example of a possible organizational structure for educational technology. The Educational Development Program is organized within the central administration, the Provost's office, with responsibility for the improvement of educational opportunities. The overall goal of the program is to "facilitate development and implementation of innovative educational practices" (Educational Development Program, 1977, p. 3). The program provides funds for faculty-initiated projects in all subject areas which show potential for improving the quality and efficiency of education. Gaff (1975) also states the importance of linking such services to a chief academic administrative officer.

> Most directors of centers (instructional development) find this a desirable situation because it gives them access to an administrator with authority to emphasize the importance of instruction, and it helps them secure the necessary financial and material resources to operate their programs. (p. 117)

Diamond (1974) emphasizes that where major program changes are required individual departments and schools do not have the necessary resources, influence or wide range of expertise required for implementation. He suggests that:

> A central unit, located relatively high in the academic administrative organization, can provide development and evaluation support, dollars for faculty release time, and a key inter-institution communications function. (p. 8)

The organization of educational technology services is a key issue which Nigerian educators must address for the improved quality of instruction.

Summary

The present status of educational technology in universities has been determined by several combined and interrelated influences. The overall institutional structure reinforces through its bureaucratic practices, traditional authority patterns which prevent the integration of educational technology. Its very integration poses a threat to the entire system. Infrastructure cannot be divorced from its structure. Therefore, the numerous constraints posed from within are reinforced from without. The reward system is not process oriented but supports traditional authority

in the classroom through its emphasis on content. The reward system should be changed to reflect a greater emphasis on teaching. There is also need for more adequately trained personnel, but, at the same time, those persons already employed could be more judiciously deployed. Financial restrictions are in part due to the non-availability of funds and in part to the low priority placed on educational technology developments. The availability of space and instructional resources are very much determined by finance. However, it is important to note that such resources could be more fully utilized by incorporating them into an overall curriculum plan. A basic material infrastructure is vital to the acceptance of an innovation, and particularly educational technology.

Certain innovations are best introduced from the local level, as in the case of new instructional methodologies. This creates an awareness of the innovation and reduces the degree of professional bias likely to be encountered. Lack of awareness concerning educational technology and professional biases have negatively influenced program development. The rapid rate of university enrollment has been both a positive and a negative influence. It has largely been responsible for ad hoc developments through the use of stopgap measures but at the same time has encouraged the development of a new and integrated approach through nationally advocated reform. The federal government figures large in the

legislation for educational reform thus exerting a positive influence. However, current financial restrictions have the opposite effect, that of restricting new development.

The organization of educational technology should be given major consideration. Other examples would suggest that a link with the central administration of the university would be advantageous.

It is this delicate combination of government legislation on those matters on which it can effectively legislate and local innovation and participation on an institutional basis which will determine any future successes of educational technology. Suggestions related to these roles are discussed in Chapter VI.

CHAPTER VI

THE ROLE OF EDUCATIONAL TECHNOLOGY IN ACHIEVING NATIONAL EDUCATIONAL OBJECTIVES IN NIGERIAN UNIVERSITIES

One of the basic assumptions underlying this thesis is that education alone cannot change the course of development. Unfortunately, in the 1960s the reverse assumption was made by most developing countries, and, hence, the 1970s indicated how erroneous this premise had been. Societies still faced with the same problems, only in greater proportion, because of the rate of acceleration of change, are now forced to look for new solutions. Many educators have argued that education has to be placed within the total context of development and, thereby, seen as an interdependent force toward the achievement of overall development objectives. Interdependence implies, of course, that other factors affect its effectiveness, and vice-versa, and thus the overall national achievement. It almost becomes a vicious circle. Education, therefore, has to be viewed within the social and economic context in which it operates. According to Husen (1974):

> Education cannot serve as a substitute for social and economic reforms. The latter must to a large extent precede educational change. (p. 140)

The important point here is that oversimplification leads to an unduly optimistic attitude, making it impossible to deal

with root causes. This chapter, therefore, focuses on the role of educational technology within the context of educational development, as seen in a total perspective for national development. The problems of development weigh heavily on the shoulders of government. What are possible solutions? What can education contribute? What can educational technology contribute? In dealing with the latter, it is important to look at the institutional setting in which its implementation occurs.

The university is a significant institution in development activity, yet its "classic" model was designed for an elitist system, unchallenged by issues of economic expansion, social equality and cultural relativity. The times have changed, the mood has changed, can the university also change? For certainly this is a crucial question, upon which hinges the success or failure of any innovation within its "walls." While external forces demanding change are aligned against it, internal forces resisting change, create a formidable fortress making for a static, yet bombarded structure. Such structures find it difficult, if not impossible, to accommodate the demands for greater access, equal access, and involvement outside its traditional sphere. The sheer number of students seeking higher education is phenomenal, with the rate of accepted to rejected being disproportionately low. The Joint Matriculation Board established by the Nigerian Federal Government is designed to ensure equal access

in terms of recruitment, but what of curriculum changes to further accommodate equal access? Is the university, which operates in a largely rural setting, prepared to change and be changed by the community? While these are posed as questions, the implications of the classic university model is that the necessary mechanisms for change in these directions are not inherent in the present system. In addition, Hannah (1967), points out the importance of internal support for structural change:

> How strongly will a traditional rigid university structure be supported by an institution's own graduates and those who have some hand in its destiny? Laws alone cannot change the character of an institution, when its history and those who have been associated with it present a well-settled point of view about its purpose and function. (p. 15)

A structure is needed which can respond to the rapidly changing needs of society and yet retain those unique features which characterize it as an institution of higher learning.

The lack of flexibility in role performance emanating from the traditional structure also makes the university system less responsive to change elements. The reinforcing of traditional authority roles prevents the judicious use of manpower resources for optimum job performance. The traditional concept of what an academician is and should do affect the kinds of innovative methods and techniques which could be introduced. For example, it is looked down upon to use one's hands in any form of manual work. Therefore, any type of

activity which involves psychomotor skills is likely to be shunned. This would, of course, have adverse implications for areas like instructional technology where practical applications often require psychomotor skills. The rigidity of role definition is also exemplified in the nature of teaching, how it should be done and who should do it. It has historically been accepted that teaching should be done by a teacher standing before a class of 25-30 pupils, for approximately 45 minutes. Little variance has occurred in this format over the century, and it has indeed become the fixed procedure which defies change. Yet, the problems of education today make this methodology for all situations obsolete. Teachers are now expected to handle classes with a student enrollment of over 200. Is the nature of their preparation designed to cope with such magnitude and diversity? Are teachers willing to take on such responsibilities? There is no question but that serious consideration must be given to this important function, but with a view to devising practical, and relevant solutions to pressing problems rather than perpetuating a blind reliance on past tradition.

Traditional university education has been inadequate for the introduction of educational technology. It has emphasized the use of technology <u>in</u> education, rather than technology <u>of</u> education. The former represents a type of thinking concerned mainly with the use of equipment, ad hoc

developments, and generally the incorporation of technology into traditional teacher-centered activities. In such a case, its role is secondary, supplementary and generally peripheral to the educational process, rather than being an integral, active part of it. With a structure which is fairly static and perpetuating rigid role definitions, it is not surprising that this state has developed and persisted. Indeed the system has worked to maintain itself, and at the same time to expose these inadequacies.

Technology <u>of</u> education is a far more embracing concept. According to Dieuzeide (1971) it implies "the systematic application of the resources of scientific knowledge to the process that each individual has to go through in order to acquire and use knowledge" (p. 175). This approach provides for an analysis of the instructional process, thus enabling a more enlightened assessment of success/failure and a determination of need. It is in direct contrast to the former concept which encourages expedient measures to be taken leaving major causes of instructional problems undetermined and thus unsolved. Technology <u>in</u> education is itself an expedient measure. However, the time has come to remove the patches, clean the wounds and perform the necessary operation.

The New National Policy: A Re-Thinking and Restructuring of the Nigerian Educational System

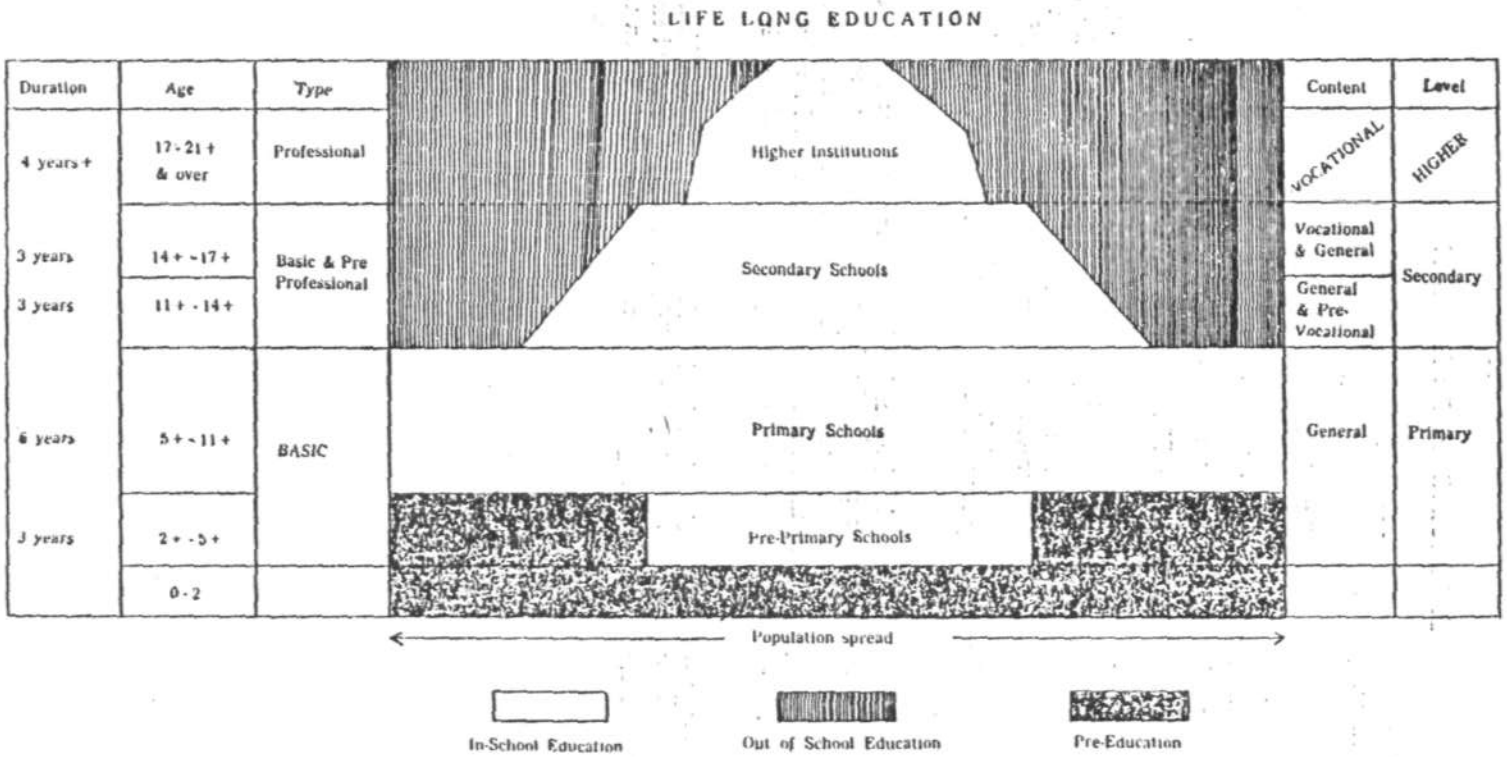
Time is an important factor in development. It takes time for ideas to be formulated, developed and understood. It takes even more time perhaps for ideas to be implemented and accepted. The essence of time, however, may be modulated by circumstances and events. The formulation of the National Policy on Education represents a tremendous leap in time, in thinking--from an obsolete colonial policy to one which attempts to deal with contemporary Nigerian issues and problems. How long was this policy in the process of formulation? Perhaps no one really knows; however, it is certainly the culmination of the vociferous activity by Nigeria's best educators over the century that has helped to shape this crowning achievement. And yet, one has to also emphasize the present context in which these new ideas are to take roots. Nigeria as part of the world setting, faces similar educational problems as other nations, thus creating a disposition towards reform and change, born out of necessity.

The National Educational Policy has been the pivot of this thesis, as indeed it is the pivot for educational reform in Nigeria today. It represents a bridge between the obsolete practices of the past and more practical and relevant approaches of the future. Educators are "busy," for they know if the opportunity is missed to make their voices heard on

crucial decisions affecting them, repercussions may be felt for years to come. This policy then, is an historical document. The real significance of the policy lies in its radical transformation of the educational system, representing a re-thinking and restructuring of education as a whole. It is significant, however, for two reasons. For the first time, specific criteria are stated for education. Secondly, educators and non-educators all over the country are involved in the process of working out practical guidelines for implementation by various institutions.

What are the implications of the new policy for education as a whole? The graphic representation shown in Figure 14 summarizes many of these implications. The overall implication which can be drawn is a change in the structure of education. A greater emphasis would be placed on pre-primary or nursery education, making it an integral part of the educational system. Secondly, universal primary education (UPE) means that every Nigerian child 6 years of age has the right to attend primary school, thus broadening the base of the educational pyramid. Secondary education has to expand to accommodate the number of primary leavers. Maximum age would no longer be a significant criterion for entrance to and graduation from secondary school. The objective is to give maximum opportunity to the learner to acquire an education. With UPE now a reality, the broadening of the educational hierarchy in an upward direction is a necessary eventuality.

Figure 14.



NOTE: Federal Republic of Nigeria National Policy on Education. Federal Ministry of Information, 1977, p. 36.

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Other changes which would have to occur include: (a) curriculum changes to include new emphases (i.e., vocational and basic skill courses), (b) a change in instructional methodology to include those which lend themselves to continuous assessment, rather than an over emphasis on a final examination, (c) a reliance on a variety of resources for learning such as those which libraries, resource centers, and language laboratories can provide, (d) a different kind of professional preparation for academic staff to enable them to implement this new approach, and (e) a different administrative machinery to organize and co-ordinate academic and non-academic functions. There is an obvious shift in emphasis from the process of teaching to the process of learning--with lifelong education being a primary focus. A significant implication here is that the educational system will be geared toward inculcating those skills necessary to facilitate an interest in learning throughout one's life and that such facilities as are required at a particular stage of development, will be made available and utilized for this purpose. Taba (1962), in her emphasis on curriculum change, has this to say:

> Another task seems to be to create minds which can cope with the problem of living in a rapidly changing world. This requires a re-examination of ways of using past wisdom and of the assumption that it is necessary to steep minds in a background of cultural heritage without which it is impossible to think about the foreground. (p. 43)

She goes on further to quote Heilbroner who states that most people deal inadequately with the forces of change because they lack:

> A fresh sense of what to expect from change and an "intellectual grasp" because controls are set only in economic calculations . . . He observes, furthermore, that the "average education is barely adequate to allow the population to cope with the complexities of technological change, and insufficient to all but few to understand them." (p. 43)

A very crucial issue in this whole change process is the ability of institutions at primary, secondary and the university levels to cope with such radical changes. This is an issue which educators should be aware of and concerned about. The national policy on education has provided the necessary legislation for changes in the educational system. What is now required is for this legislation to be implemented. The implementation state is just as crucial, and could mean the difference between the success or failure of policy ideas. The Implementation Task Force set up to provide practical guidelines for implementation should consider this important factor. If the overall implication of change in institutional structure is not perceived, what can result is mere ad hoc developments to the existing system. The comprehensive nature of the policy must be grasped first, before any implementation strategy is designed. How often have past educational projects of grandeur and promise petered out due to improper attention to strategies of implementation?

The university being the final rung of the educational pyramid receives input from all previous levels. Similarly, the implications of new policies will be either realized or destroyed by the time this stage is reached. Symbolically, it represents the final molding experience for the Nigerian pupils before they are released to make a professional contribution to society. The challenge which this conveys is one of tremendous responsibility for the university and one for which the future will either praise or condemn its efforts. The direct implications for the structure of university education are several: (a) the expansion of university education, (b) a re-organization of instructional methodologies, (c) reorganization of administrative machinery to organize and co-ordinate new learning patterns, and (d) new role definitions to accommodate new functions.

The increase in university enrollment will also mean a more diverse student body. A more heterogeneous group with reference to ability, academic qualifications, geographical location and study objective is the likely outcome of an equal access policy as advanced by the national policy. Students, for example, might have the necessary entrance qualifications or they may not. The assumption is that some provision exist for the student who does not have the normal entrance requirements. A broadening of curriculum is also implied, with the curriculum designed to reflect manpower needs. This would need to change from time to time to keep

abreast of new innovations as reflected in social and economic forces. Curricula should also cater to the various needs of learners through a broad spectrum of course offerings. The university would also expand in its functions, incorporating correspondence, part-time and open studies education. A strong community service role is also implied.

A second implication for universities is the reorganization of instructional methodology, away from traditional reliance on the lecture/tutorial method to more flexible strategies accommodating diverse learners in various parts of the country. A subsidiary implication is the use of various resources to facilitate this instructional process. An integral and co-ordinated use of resources will be necessary for such a non-traditional process. An administrative machinery to handle the increased numbers and new strategies will need to be created. It should be flexible enough to organize and co-ordinate new learning experiences which may not necessarily be campus-based. Such an administrative machinery should not be designed along traditional authority lines, but place greater emphasis on job performance and the adequate deployment of personnel for particular functions. This function is very crucial to the university expansion program, since its efficiency is a major factor in the success or failure of the entire instructional system.

Another significant implication is the re-definition of roles, both for students and staff. Staff should be encouraged

to be less rigid in their adherence to authority patterns and more responsive to students' needs. Students should be encouraged to become active participants in the design and implementation of learning objectives. Total involvement by both students and staff would facilitate a more learning-centered approach, with the learner having an active interest in his own learning. Staff should be flexible in their job performance considering the shortage of manpower in all areas. Traditional responsibilities should be reallocated if it means a more judicious and relevant use of resources. The overall implication for the university is a change in its organizational structure if new policies are to be implemented at this level. This is, indeed, a monumental task with no historical precedents in the country.

A change in the reward structure to a more teaching/learning centered approach as discussed in Chapter V could help to facilitate a number of these changes. A reward system which focuses on teaching and learning also places greater emphasis on the systematic development of curriculum. The organization of instructional development programs as an integral part of university education offers possibilities for developing this new approach. American examples such as those at Michigan State University, Ohio State University, and Syracuse University are relevant models for the organization of instructional development programs. In these institutions instructional development is organized as a part of the central administration with direct links to key administrative personnel

such as the vice president for academic affairs or the director of educational services. Assistance is provided to clients from all schools and colleges in the university in monitoring educational projects, instructional improvement and media production.

An Educational Approach: Technology and the Implementation of National Objectives

In exploring a role for educational technology, the present university system has been analyzed to ascertain those inadequacies that mitigate against its integrated development. The inability of the university to deal with current problems has also been discussed. In the wake of the National Educational Policy, new approaches are called for to deal with changes in educational emphasis. These new features have also been elaborated upon with a view to seeing future needs more clearly. The federal government's specific emphasis on open learning as a possibility toward achieving some of its goals deserve to be considered in more detail, not because it is a new and rapidly developing approach, but because it potentially offers practical solutions to very pressing problems.

Open Learning/Distance Education

Open learning offers possibilities for the educational system as an integral part of each university. Nigeria's 13 universities serve a population of approximately 80 million. Thus the challenge for institutions could not be greater.

Incorporating open learning features, therefore, introduces greater scope for existing institutions. The Correspondence and Open Studies Unit at the University of Lagos, notwithstanding its shortcomings, is an idea which could be developed on a larger scale. Open learning could become a recognized feature of university education. The Lagos example is perhaps a bit ambitious as an experiment, given the present infrastructure in the country. Its administrative machinery, for example, is not designed to handle a nation-wide program. This along with other problems of operation such as the delivery and reception of course materials, staff shortages, and meeting production deadlines all makes it less effective in its still experimental stage.

Several advantages are possible with incorporating an open learning approach into the overall system of university education rather than as an alternative to existing models. The most immediately obvious, of course, is the degree of acceptance which is most likely to occur in the former. As a novel, separate institution or system, the discrimination normally associated with innovations of this nature is likely to be even greater in a developing country where attitudes concerning university education are very rigid and deeply rooted in the traditional model. As in the case of Nsukka when it tried to introduce a more practical and relevant curriculum in the 1960s, its graduates were discriminated against by employers and other institutions and considered second-rate for years until eventually it had to make

concessions in admission and curriculum similar to the accepted Ibadan model to overcome much of these prejudices. Such attitudes, while they may still exist, are more likely to be tempered if within the same institution a new approach is introduced. The acceptance of a new approach in traditional institutions will depend on the strategy of introduction.

A second advantage is the ability to utilize existing facilities, thus potentially reducing costs. Physical facilities for administrative purposes can more easily be created or expanded to take on this new function. Other teaching and residential facilities are also available during periods of residential attendance, when the university is normally on long vacation, thus making maximum use of resources. Existing personnel, academic, production and administrative can be utilized in the design, development and production of the necessary courseware. This implies, however, a more flexible and well defined role, particularly for academic staff, than at present exists. It also affords an opportunity for an integrated approach to curriculum development, bringing together specialists in various subject areas in the preparation of course materials.

Existing resources can be exploited for a wider audience. The British Open University, for example, reported that its greatest yearly expenditure was for staff salaries. The use of existing staff in universities could reduce such costs. Funds could be used in other areas like courseware production which requires a large financial output. If courseware is

used for several years, costs could be amortized over a large number of students. Incorporating open learning into an existing system could reduce such costs. Financial savings are realized in the use of existing facilities as described above. For developing countries with the serious problem of resource shortages, incorporating the open learning approach into an existing institution is a decided advantage. Its ease of implementation is also facilitated through existing institutions which do not have to prove their credibility nor sell their program to the public. Universities in close proximity like Ife and Ibadan could work out a cooperative open learning program serving a defined region. The availability of a good road structure linking the two areas is also an advantage. In addition, the two areas could also utilize the same television and radio networks. Other institutions are far enough apart to warrant separate programs yet each serving a defined region.

Regular degree courses and open learning courses could run simultaneously (i.e., complementary programs) within the same system. Open learning students could be recruited on a regional basis and regular degree students on a national basis, thus serving national and local needs at the same time. An advantage of a regional approach is that (a) less strain is placed on postal services through greater use of road transport, (b) less strain on national telecommunications through greater use of regional networks for television and radio programs, and (c) greater ease of transport for correspondence and for students during periods of residence,

within a smaller region. Given the vastness of the country, and present infrastructural difficulties, this smaller scope seems reasonable.

Features Relevant to Nigerian Education

Certain features of the open learning approach are especially relevant to university education in Nigeria. The ability to provide greater access and to a wide variety of students is a particular advantage. Universities could accommodate a greater number of those students who presently qualify, but for lack of vacancies (physical facilities), and personnel are unable to gain admission. More students could be accommodated without necessarily raising costs. In fact, the use of resources for a greater number of students might prove cost-effective. Other non-traditional students could also be catered to such as part-time and married students, those supporting families, and extended families, the handicapped, those in remote areas as well as the financially disabiled.

Development efforts could be fostered by providing learning facilities in the community of residence, thus allowing the benefits of education to remain in those areas rather than such persons migrating to an urban center in search of such opportunities. All universities are at present located in urban centers; therefore, once students have imbibed the culture of the university which is usually foreign to their places of origin, they no longer desire to live in these remote areas. These areas therefore are left undeveloped. In addition to

providing learning facilities in communities, scholarships could be offered to such students to pursue open learning courses relevant to community development needs.

Community involvement is also facilitated through the use of local facilities as study areas, thus providing interaction between university personnel and the community. Special programs relevant to community needs could be designed and executed by tutorial staff in conjunction with community aids. The use of local personnel for certain non-skilled jobs could also stimulate employment, thus serving local and national needs.

Equal access could become a reality through open learning by the design of instructional programs to suit needs and competencies of various ability groups, age levels and interests. Such a program would have a different entrance requirement, taking the student at his present level from there and begin to develop competencies. It would require a diverse and flexible program which is competency-based. To ensure standards, skills should be comparable with those of a conventional program, yet the means and criteria of assessment may be different. Thus through this approach individual needs as well as specialized group needs are being met.

Specific Features of the Approach Defined

The incorporation of an open learning approach into university education means that this approach will operate on a national basis. It is suggested that each university cater to

a defined geographical region determined by its present locality and the number of potential students in the region to be served. This national/regional proposal is based on consideration for ease of organization, management, mobility and communication which small scale regional systems could facilitate while being coordinated on a national basis. Several broad, yet basic features are suggested as being fundamental to the development of this system: (a) open learning education to be an integral part of each university; (b) each university's program to serve a defined geographical region; (c) the various regional systems to be compatible with each other and with traditional programs to facilitate mobility and ease of transfer and to lessen management problems; (d) existing educational technology programs to become a core feature of each institution's open learning system as a methodological tool for the design, development, production, and evaluation of instruction; (e) courseware production to be carried out on a national basis except where specific offerings based on regional considerations dictate otherwise; (f) the National Center for Educational Technology to become a national co-ordinating body for the entire system of distance education; and (g) professionals from local areas to be utilized thus further exploiting resources available in such areas and stimulating their development.

The physical organization and integration of a distance education system into the university framework need not present undue problems. Certain decisions would appear to be crucial

in the overall procedure. The administrative machinery to handle the distance education program for each region should be solely for this purpose. Their positions and roles should be clearly specified in the conditions of appointment. Consideration should be given for the need of personnel as a core administrative staff and for the coordination of the regional program itself (i.e., local study center personnel and operations). The relationship of the distance program to the conventional degree program must be clearly stated and the objectives of each specified. They could in fact be complementary programs with an open admissions policy (i.e., no fixed admission) for distance learners and the normal or a more relaxed procedure for conventional students. Distance learners could be admitted on a regional basis but conventional students still on a nation-wide scale. The open learning program could be designed for those students who cannot take advantage of the normal degree program. It could offer both vocational and non-vocational courses with emphasis placed on community development as the need exists in each regional community.

Programs could be offered at the degree and sub-degree levels with course credits determined by the number of study hours required for each subject. Courses and credits should be compatible between institutions to facilitate ease of management and the transfer of students from one institution to another. Students should also be able to drop out and resume studies as the situation might dictate. The open learning

program becomes, then, the university's way of reaching out, democratizing education and hopefully abolishing the elitist system perpetuated in the past. With the exception of sub-degree and diploma students, the same qualifications would be obtained by distance learners as the conventional student with all qualifications being awarded by the same institution. Measures would have to be devised to ensure that although different means of instruction and assessment are used the results are still compatible. In this regard an external assessment agency similar to the College-Level Examination Program (CLEP) in the United States could be developed. This program under the College Entrance Examination Board, is a national examination system covering a variety of subject areas which evaluates what people have learned through independent study (Carnegie Corporation, 1975). University credit can be obtained by passing the examination in the chosen area of study.

Open learning with a regional emphasis has the greatest possibility of fostering development efforts at the community level which is crucial to the overall development process (See figure 15). With each university serving a defined region, specialized needs at the local level can be dealt with and at the same time place less strain on national services such as the postal system which is inadequate to handle this function.

Figure 15.

NATIONAL/REGIONAL OPEN LEARNING SYSTEM

NATIONAL

NCET:

* Co-ordination of the design and development of courseware materials.
* Production of course units.
* Educational broadcasting. (production and transmission)
* Distribution to regional centers.

REGIONAL

Universities:

* Administration of regional open learning programs.
* Distribution of course materials.
* Design, development and production of course materials at national level.
* Participate in design & development of course materials at national level.
* Training educational technologists.

LOCAL

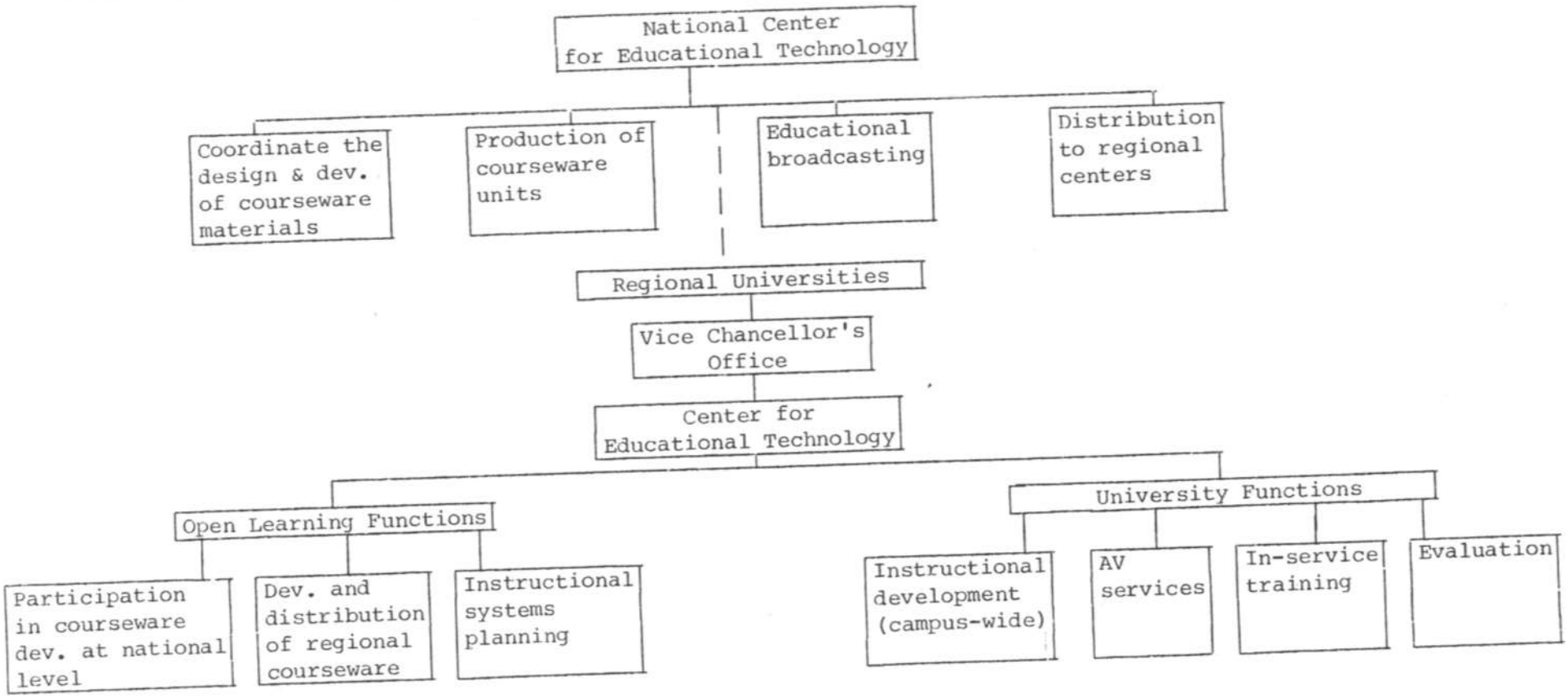
Communities:

* Study centers.
* Libraries.
* Resource centers.
* Language laboratories.

EXTERNAL AGENCIES

* Postal services.
* Book dealers.
* Universities.
* Other educational institutions.
* Local education authorities.
* Libraries.

Existing programs in educational technology could be instrumental in the development of the open learning approach at the regional and national levels (See Figure 16). Where autonomous centers exist this new structure and functions could be easily facilitated. For faculty-based programs a decision would have to be made concerning the autonomy of non-academic educational technology functions or the creation of a separate center as the one described in Figure 16. The officer in charge of or directing the center should have the status of a dean or equivalent to facilitate ease in handling policy matters and to give sufficiently high status (by virtue of his position) to the center. Media services with expansion could be utilized for the production of instructional materials for purely local consumption. At the curriculum level, personnel could be part of course development teams in designing, developing, and evaluating instruction at both regional and national levels. Planning an instructional system around the needs of the community, considering


National Center for Educational Technology
Coordinate the design & dev. of courseware materials
Production of courseware units
Educational broadcasting
Distribution to regional centers
Regional Universities
Vice Chancellor's Office
Center for Educational Technology
Open Learning Functions
Participation in courseware dev. at national level
Dev. and distribution of regional courseware
Instructional systems planning
University Functions
Instructional development (campus-wide)
AV services
In-service training
Evaluation

its objectives and devising appropriate strategies to accomplish them should also be a task involving the educational technologist. Such persons, as needed, could also be utilized at the national level performing similar tasks (i.e., planning for a more effective national system). In addition to the levels of involvement described, existing programs could also train needed personnel in the areas of educational and instructional technology to fill positions in the open learning system as well as those in other educational and perhaps non-educational spheres. The training of personnel should be a national priority if stated goals are to be achieved. There would be an obvious need for instructional designers, media specialists, resource center managers and evaluators throughout the country. The need for such persons at various levels of education like the ministries, universities, educational broadcasting services, audiovisual centers, and resource center is becoming more evident. This need will be greatly stimulated with the introduction of an open learning approach. Where such training programs have been started (as certain universities have done) these should be further developed.

Course development and instructional materials production should be carried out on a national basis using academic personnel from various universities as course team members. Course development teams comprising various subject experts could be drawn from different institutions in the

country to prepare curriculum materials in various forms. For example, the course team member in physics might come from Nsukka, geography from Lagos, etc. with all institutions contributing in some area. This combined effort could have the advantage of reducing costs since the same materials will be used with thousands of students. This procedure also prevents the duplication of efforts which could exist if each institution were to prepare its own materials. The responsibility for course development should not be a voluntary one, but should be a contractual obligation clearly specified in the university's conditions of appointment (i.e., any lecturer or professor so specified or requested could be called upon to serve in this capacity). Such work should be rewarded by using it as criteria for promotion. Courses emphasizing community development should be planned and developed on a regional basis (at the particular university concerned utilizing its own staff members as course developers) to reflect the needs of the particular area. This kind of cooperative effort at higher education can be successful in the efficient utilization of personnel and other resources. The TAGER program in Texas is an example of cooperative programming which has been successfully instituted for six years. This program has facilitated the cooperation of nine institutions providing 843 courses which are shared among institutions. The enrollment for these courses is estimated at about 18,996. TAGER's

specific objectives were to

> provide the necessary planning to develop cooperative programs; enhance higher education and open avenues to obtain optimum utilization of faculties and other academic resources; provide the greatest benefit to students and participating institutions. (Association for Graduate Education and Research, 1972, p. 1)

The National Center for Educational Technology (a newly established body for the coordination of educational technology activities in the country) could become a national production and co-ordinating body for the entire open learning system (see Figure 16). Its present function as a coordinating agent for school broadcasts could be handled by a special school's broadcasts unit in the Federal Ministry of Education. The role of the center, previously not clearly defined, could with this new function become a very positive and dynamic one in the country's educational system. Its specific functions would be:

1. The coordination of the design and development of all courseware materials to be used at the national level (i.e., by all universities) with the various universities concerned. Each university could designate course team members for specific subjects on a yearly basis. These persons would work with NCET in developing and producing the necessary materials. NCET should have its own staff skilled in course design and evaluation to adquately supervise and coordinate activities. Such persons may also be coopted from various universities.

2. The production of all course materials. The center should have its own printing press and production staff capable of producing various forms of print and non-print instructional materials.
3. The production and transmission of television and radio programs over national networks. Course teams would also be involved in the development of such materials.
4. Distribution of course materials to regional centers for further distribution to students.

In order that the center adequately perform these functions, its present facilities will need upgrading. Commercial printing facilities should be installed, television and radio services upgraded and expanded, and adequate space provided for the overall physical operation. Additional personnel would need to be recruited particularly those skilled in instructional design and development, skilled production staff, as well as additional administrative personnel to handle new functions. Regional programs in educational technology should work very closely with the national center in the execution of its program. Regional educational technology personnel could play dual roles in some instances. For example, curriculum or production personnel may be coopted or loaned to the national center provided such services can be spared. This does not, however, obviate the role of educational technologists as course team members.

Those persons in local areas with skills such as businessmen, teachers, lawyers, accountants, technicians, etc. should be utilized where possible in local tutorial activities. Semi-skilled persons might also be useful as aids in study center operations. The use of these resources could stimulate community involvement and increase employment opportunities at this level.

Several new developments favor the execution of the approach. The new telecommunications project presently being carried out by the federal government with the assistance of the T-COM Corporation should ensure smooth and efficient national distribution even to remote areas (Voice of America, Note 16). The project involves the expansion of the telegraph, radio, telex and television network. It is expected to be operative in 1979. Resource centers have also been proposed in each state. These along with libraries, audiovisual centers and language laboratories which have also been proposed, could greatly strengthen local area resources needed for an open learning program.

The improved road network in the country should make transportation and communication generally easier. Since universities would be catering to regional open learning programs, more reliance could be placed on road transport than on postal services which at present are inadequate to cope with the scope of such a proposal. However, certain administrative functions could be carried out through mail.

Implied in the reliance on road transport is an adequate fleet of road-worthy vehicles and a staff of drivers.

Educational Technology Strategies for Planned Change

Two factors which have contributed toward the present status of educational technology are the lack of: (a) an awareness concerning it as an innovation, and (b) a systematic strategy for its implementation. All too often these are the shortcomings of many a promising innovation, with great emphasis placed on its conceptualization and development, but little on implementation. In order to bring about the desired change, some strategy has to be devised and systematically pursued. Hoyle (1975) defines planned change thusly:

> A deliberate and collaborative process involving a change agent and a client system which are brought together to solve a problem or, more generally, to plan and attain an improved state of functioning and applying valid knowledge. (p. 6)

A number of writers on educational change suggest that it has to be viewed in a sociological perspective. The manner in which an innovation is introduced, they argue, is as important to its effectiveness as the qualities of the innovation itself. It becomes important, therefore, that the sponsor of an innovation consider the implications of the fact that it must be adopted by social systems rather than by unrelated individuals. In this regard, it is important

that those educators responsible for the implementation of an open learning approach be cognizant and adept in the use of change strategies and tactics.

It is significant that there be an awareness of those forces which can operate against change. In Nigeria where cultural ties are very strong, cultural values and beliefs could present a barrier to the acceptance of technological change which could be perceived as "foreign," "threatening" or "unnecessary." Innovators should also be aware of possible social barriers such as those which may be encountered as a result of group solidarity, the conformity to norms, conflict and factionalism. An awareness and understanding of sociological processes and human behavior becomes a tremendous asset in such situations. Professor Alfred Opubor (Note 17) gives this analysis:

> Modernity is basically an attitude of mind rather than just a collection of technological artifacts; the culture of modernity is predicated on particular ways of behavior, particular ways of anticipation, and especially particular ways of relating to technology. I believe that most Nigerians do not participate, except superficially, in the cultural pre-suppositions underlying modernity. That fact indicates both our strength and weakness as a nation. Because contemporary modernity is predicated on the cultural orientations of the western world, the fact that most Nigerians are not modern, means that our society will be slow in becoming alienated from its cultural roots, and that the pace of westernization will be slowed. In these days of instant globalism, it is some kind of an advantage to be able to resist the forces of homogenization, uniformity and conformity. However, some Nigerians must acquire a modern value-orientation if Nigeria's relationship with the modern world is to become profitable and non-disruptive. Telephone operators and secretaries

> who do not understand the importance of the telephone as a social and economic tool, subvert our attempts to harness technology in our quest for modernity. Messengers who treat cablegrams like ordinary letters defeat the advantages which speedy telecommunications are supposed to confer. The aberrations may be symptomatic of a basic ambivalence: our inability to provide modern management thinking for operating a modern society may be related to our unwillingness to accept that "becoming modern" carries a price, and our hesitation about paying that price. (p. 9)

The organization into which the innovation is seeking adoption may also present certain barriers. The degree of rigidity which exists in the organization may determine the speed and nature of decisions. If procedures are highly standardized and routine as in a bureaucracy, it may offer substantial resistance. If the decision-making authority is not clearly defined it also becomes difficult to secure adoption since this depends on such a figure(s) for implementation processes. In addition, a clear understanding of the power structure may be crucial, in some cases more than others, depending upon the strategy adopted. According to Zaltman (1977), "the power structure of a system is a force towards the success of top-down change, whereas it works against bottom-up change" (p. 39). Diamond (1974) on a similar note, speaks of the need for an institutional commitment to major change. It is crucial, according to him, that the central administration perceives the need for and firmly supports the change. Innovators must also be prepared to contend with psychological barriers as a result of perceptions concerning insecurity, and professional training.

A person's selective perception and retention may prevent him seeing inadequacies in the present system, or there may be differences in perception and lack of clarity about the innovation. Insecurity may develop as individuals perceive themselves as being unable to perform in a changed position. Resistance can also be posed due to one's professional training and the consequent socialization process encouraging conformity and commitment. Such attitudes tend to be important at different decision stages.

Rogers (1971) outlines several criterial attributes of an innovation which are important factors in its eventual adoption. The innovation should be easily communicated especially at the initial awareness stage. Information essential to an understanding of the innovation should be easily disseminated. At the interest or motivational stage, the degree to which the innovation is perceived as an advantage is important. "If it is not necessary to change, then it is necessary not to change" (Folkland, p. 42). How complex is the innovation? Some innovations have underlying complex theories or operations reducing their comprehensibility. Other factors to consider include the innovation's radicalism, demonstrability, source or point of origin, its compatibility with the social and technological environment, reversibility and divisibility. How much risk and uncertainty is involved? Is it a good scientific risk? Can it be modified or changed? For curriculum and organizational structure

innovations such as the one proposed a crucial consideration is the impact on interpersonal relations. How will these be modified or changed? At the adoption and resolution stage the financial cost becomes significant. What is the initial cost? What is the cost of continued and sustained implementation? An overall consideration for an innovation, particularly an open learning approach, is the availability of resources or the preconditions necessary for implementation of the change. These factors form important criteria for decision points in the consideration of change and should, therefore, be thoroughly understood by change agents.

Once having understood the fundamentals of an innovation it is necessary to develop a change model as an overall guide toward its implementation. A number of change models already exist; however, these might be modified or a new model developed to suit the unique circumstances of the environment. Open learning innovations are predominantly concerned with matters of organizational structure and would perhaps best be dealt with through the development of an organizational change model. The Zaltman, Duncan and Holbek model (1973) is one which is specifically designed for this purpose. Although obviously simplistic, it could easily accommodate modifications where necessary. This model has two basic change stages: (1) initiation and (2) implementation. The initiation stage is concerned primarily with creating knowledge and awareness concerning the innovation, fostering

the formation of positive attitudes, and encouraging a decision on implementation. The implementation stage involves the initial implementation (either a pilot project or activities on a small scale), and continued or sustained implementation based on previous results. In some cases the initial implementation phase may be disregarded.

Developing strategies for the implementation of change is a relatively new phenomenon, particularly in education. Most educators simply use intuition or what Baldridge (1974) has called "seat of the pants" strategy. He also notes that most successful innovations tend to be introduced from outside education. With the model as a general guide, the innovator should seek to develop a plan for the execution of change. This plan may be more properly referred to as a strategy--which is a systematic program for the execution of a change model. Zaltman, Florio and Sikorski (1977) define a change strategy as "an approach taken to mediate appropriate change behavior by relevant actors" (p. 73). Their review of change literature produced three basic types of strategies: power, manipulative, and rational. Power strategies are concerned with the "control of rewards and punishments, deprivations and restrictions" which have meaning for those persons or groups involved in the change process. The success of this strategy depends upon the degree to which these sources of power are valued. The manipulative unlike the power strategy, involves manipulating some aspect of the

change environment so that the individual or group comes to see the situation differently. Motivators, in this instance are meaningfully tied to the change itself. An example would be the federal government's emphasis on a 60/40 science/humanities ratio, and thereby, providing scholarships in these areas. Rational strategies are based on getting the target to accept change for itself rather than for some other reason. The motivation is the change which is perceived in his own best interest. These strategies, however, are not as simplistic and clear-cut as they may appear, and may depending upon particular circumstances be used in conjunction with each other. In all cases it is necessary to have some understanding of the institutional setting or "user group" their motivation, values, needs and resources. For organizational models, strategies should be developed out of an indepth knowledge of the existing power structure. This knowledge will determine the kind of tactics employed at each stage of the implementation process.

Making the "quantum leap" from a bureaucratic and rigid system to an open, flexible and self-adjusting system is a formidable task. The choice of modification of existing structures to accommodate new approaches would appear the more logical. An extremely radical approach like changing everything at once is perhaps illogical--at least no precedent exists for this kind of strategy. The final alternative of developing a new yet parallel system like the Open

University, for example, would invite a great deal of discrimination which could serve to defeat well designed initiatives.

Implications for Primary and Secondary Education

Each level of the educational pyramid has direct implications for the next; however, moving from top-to-bottom, a number of implications can be discerned for subordinate levels. Open learning at the university level is part of an overall process by the federal government to provide a more learner-centered approach to education. A higher standard of education should be realized in the country. Parents would be more capable of enriching and stimulating children at home.

Education at the secondary level could become truly educative rather than having predominantly a "qualifying" focus. Indeed, emphasis placed on continuous assessment should eliminate this outmoded practice. With a greater number of avenues being open to secondary graduates for higher education, there should be less anxiety and frustration associated with this period of schooling. Learning could even become enjoyable, which is more in tune with the life long education philosophy.

The nature of teaching at the secondary level will need to change towards a more learner-centered, need-centered

approach. More emphasis should be placed on mediated instruction as a part of the total instructional process. The nature of secondary preparation for higher education will change with altered entrance requirements. More options should be available to the secondary student in preparation for a vocation, and the avenues to attaining them varied. Finally, a greater number of secondary pupils could be accommodated at the university level.

The introduction of universal primary education implies that a greater number each year (until a plateau is reached) will be moving through the system. Open learning has the effect of broadening the pyramid at the top in a similar manner as UPE has done at the bottom. The quality of primary education should improve with a more enlightened and critical parent population, resulting from higher education exposure. Greater involvement of such adults at this level would also be expected. This has further implications for the quality and nature of teacher training and curriculum content which should reflect this phenomenon. While the national policy changes have profound implications for all levels, the particular advantages of an open learning approach in universities could, while solving specific educational problems at this level, also add significantly to the nature and quality of learning at previous stages.

Summary

The incorporation of educational technology into an open learning approach suggests greater possibilities for the utilization of existing resources and a more integrated approach to the use of technology in education. The resource crisis presently faced in Nigerian universities makes the application of open learning appropriate. Its incorporation into the overall university system facilitates maximum use of existing resources and should stimulate the national production of instructional materials. A national/regional system is proposed with the National Center for Educational Technology serving as a national co-ordinating body for courseware production and distribution and each university (regional program) administering a regional open learning system. National and local needs can be met through providing regional and national admission. A resource infrastructure to support a nation-wide open learning system already exists. With the necessary upgrading and additions this could form an adequate support base.

A strategy for the implementation of this desired change is required. Such a strategy should consider possible cultural, social, organizational and psychological barriers. Those features of the innovation itself which may cause resistance should be understood. An organizational model is needed that reflects the power structure to be dealt with

and the various values, needs and motivations therein. The adoption of an open learning approach will, however, depend on a combination of environmental, organizational and individual factors.

The implications for primary and secondary education should be reflected in a higher standard of education with greater stimulation by parents, in particular, for improved quality of education. A learning-centered approach should reduce anxiety and frustration presently associated with the qualifying-focus of curriculum and teaching. With increased numbers of Nigerians entering all levels of education a better standard of living should emerge.

CHAPTER VII

SUMMARY AND CONCLUSION

Summary

This study has sought to find out if existing programs in educational technology are being used to achieve national educational objectives. A number of research questions were posed: (1) What are the national objectives for university education? (2) What is the nature of existing programs in educational technology? (3) Do such programs assist in implementing national objectives? (4) If programs do not assist in implementing objectives, how could they be used to foster such implementation?

A number of methods were employed to collect the necessary data. The participant-observation case study technique, documentary analysis, and interview schedules were used. Six universities which met the stated criteria were chosen as case studies. These included the universities of Ahmadu Bello, Benin, Ibadan, Ife, Lagos, and Nsukka.

Literature related to the thesis was reviewed. The sources on national educational objectives while quite varied all attempted to provide some guidelines for the development of educational policy. Beginning with the Curriculum Conference of 1969, to the National Policy on Education in 1977, several themes became evident. Of concern to educators were issues dealing with the relevance of university education to the Nigerian society: its role in the training of manpower for

the country, the quality of education, and the need to provide equal access to the various ethnic groups in the society. The National Policy on Education represents the first comprehensive national attempt at defining educational objectives and is, therefore, of historical significance. National educational objectives for university education based on policy guidelines are stated as: (a) to develop high-level manpower within the context of the needs of the economy; (b) to provide practical knowledge and skills through a scientific orientation; (c) to provide equal access--a fairer spread of higher education activities; (d) to provide greater access--such as through universities or correspondence courses, or open universities, or part-time and work-study programs; (e) to provide community service through extra-mural and extension services.

Open learning approaches have been analyzed to ascertain the organizational pattern and objectives of such systems. The need for open learning is evidenced in the inability of conventional university models to adequately cope with the problems of increasing enrollment, social and economic equality, and the shortage of resources. Open learning is a system of education which caters to non-traditional learners and patterns through distance education. Developed primarily as an alternative to traditional systems, it has also been increasingly incorporated into existing institutions. Developing countries have increasingly employed the latter approach due to a potential savings in resources. Open learning systems

have varied objectives which have been classified into five general categories. In-service education provides up-to-date training for professionals while they remain on the job, thus upgrading skills without disrupting service. Higher education can be expanded providing greater access and more equal access to persons previously barred from entrance to the university due to academic, social, financial or personal reasons. Providing skilled manpower is another objective with direct national development overtones. Curriculum is specifically geared toward achieving this objective. Systems may also aim at facilitating personal growth and development by providing those skills necessary to optimize job performance and facilitate social mobility. Finally, an open learning institution may have broad general objectives which incorporate a number of the above as well as some of the more conventional ones. In such instances, the primary focus is on flexibility in course offerings. The overall implication of adopting an open learning approach is a change in the social system.

Case study findings revealed that educational technology is not integrated into the total university curriculum, but is instead implemented on an ad hoc basis primarily as a 'stop-gap' measure. Educational technology programs can be classified as autonomous or faculty-based programs. All programs are service oriented. Their basic function is the design and production of instructional materials. The level

of operation for educational technology is at the media production level. Autonomous centers have some degree of autonomy over the type and scope of operation. Funding for such units, on the whole, tends to be more lucrative, perhaps due to their less complicated structure which makes it unnecessary for them to compete for yearly grants. Faculty-based programs due to their structure tend to have an academic and a service function; however, academic offerings are largely of a 'service' nature. These programs do influence the nature of curriculum content at the department and faculty levels, but in terms of audiovisual course offerings only. Teaching normally takes precedence over service. Academic and administrative procedure applicable to the university at large also applies to these programs. Financial allocations are subject to faculty priorities and must be justified. Three institutions had autonomous units and three had faculty-based programs.

The findings on objectives indicate that the organizational structure of educational technology influences its objectives. Autonomous centers are service oriented, while faculty-based programs have a teaching and service function. Such objectives, however, are rarely communicated and understood and no practical guidelines are provided for their implementation.

The rapid increase in university enrollment over the last five years has precipitated a resource crisis. Enrollment

increased at each university by the following percentages: Ahmadu Bello 34%, Benin 77%, Ibadan 43.6%, Ife 43%, Lagos 51.8%, and Nsukka 31.7%. This has resulted in the use of educational technology as an emergency measure rather than as a methodological tool for solving root causes. Such 'stop-gap' measures could never be truly successful.

In the area of infrastructure, the majority of educational personnel (63.9%) are in production, 14.8% academic, and 21.3% are administrative. An analysis of job performance revealed that academic personnel tend to be the most inflexible. Half of the sample identified their financial allocations as inadequate to support program operations and viewed it as a major cause of program ineffectiveness. Financial allocations are made on the basis of priorities and justifiable need. The physical facilities for educational technology were inadequate. These were not designed with such a program in mind, but were either improvised or renovated for this purpose. Major media resources capable of catering to large and/or small audiences varied in distribution among case studies. Graphic facilities, though common in all institutions were not suitable for large scale production. Closed-circuit television facilities existed in five institutions, but only one had a distribution network. Local film production is a rarity, perhaps due to the considerable expense involved. Three institutions had audio and offset printing facilities, but again these are not adequate for large scale

(i.e. university-wide) production. Proposals are being considered in two universities for campus-wide radio stations. These, however, will probably not be realized for some time, due to cost in university funding and the consequent abandonment of most capital projects.

Conclusions

This study has revealed a number of factors affecting the development and use of educational technology in Nigerian universities. These factors are interrelated and tend to pose a negative influence in the achievement of national goals.

1. Educational technology is not an integral part of university education, and cannot be, given the present nature of university structural and infrastructural organization. The bureaucratic nature of the present structure enforces rigid authority patterns at the expense of efficient procedures. The infrastructural organization supports this pattern through its reward system and the organization of instructional roles.

2. National educational objectives for university education suggest a new and integrative role for educational technology through their emphasis on a restructuring of education. The policy objectives of equal and greater access can only be achieved through the application of technological procedures systematically designed for this purpose. Integration implies the use of educational technology as a

methodological tool for the design of instructional systems and appropriate instructional methodologies to solve specific educational problems or to achieve specified objectives.

3. The provision of practical guidelines for the implementation of national objectives will be a crucial element in solving educational problems. Without such practical guidelines as are presently being considered by an implementation task force, institutions will have no criteria for designing and developing the needed curricula. The role of educational technology would, therefore, be vague and undefined.

4. As university enrollment increases, the need for an integrated, systematic approach to instructional design becomes more necessary. Increasing numbers and decreasing resources make the need for resource planning and allocation more crucial. This can only be done effectively by devising an overall plan for instruction.

5. The structure of university education will have to change to accommodate new policy recommendations. The transformation of education as implied in the new policy suggests that institutional structures at all levels will have to change. A change in one level of the tripartite system implies a change in others. The incorporation of new processes and functions forces a change in structure.

6. The traditional instructional role will have to be altered to facilitate and accommodate expansion in the university education. The conventional lecture/tutorial method

alone cannot accommodate the rate of increased access envisioned. Providing equal access means a greater diversity of students which the traditional instructional methods are not designed for.

7. The integration of educational technology into university curriculum will greatly depend on the implementation of an innovation strategy. Lack of awareness concerning educational technology was an important factor in its present status in universities. Unless those designed to use the innovation are sufficiently informed of its nature and purpose it is unlikely to be accepted and adopted.

8. Educational technologists in universities are too few in number and lack sufficient training to implement an integrated curriculum approach. Crucial to such a role is knowledge in the areas of instructional design and development, evaluation, diffusion and adoption. Such areas have been traditionally passed over in favor of production.

Recommendations for Further Research

Educational technology is a relatively new area of study in Nigeria, and it, therefore, appears as if everything needs to be done. A great deal of emphasis should be placed on applied research, but not, however, to the exclusion of basic research. As a direct follow-up to this study, a number of issues could be explored.

1. Certain organizational changes should be tried out to find out if they facilitate the use of educational technology.

2. An investigation or further study of those factors which mitigate against the introduction of educational technology.

3. Further study on the influence of the reward structure on the application and use of educational technology. What changes should be made and how?

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APPENDIX

APPENDIX A

QUESTIONNAIRE AND CODED RESPONSES

QUESTIONNAIRE

(Place a ✓mark in the appropriate column)

Answer all questions except those designed for a specific job title. Where statements are required please be as brief as possible.

1. What are the objectives of this department/centre/service?

_____

_____

_____

_____

2. What is your specific job title? _____

3. What training do you have for your position? (State whether certificate, diploma or degree and a brief statement about the nature of the training). _____

_____

4. How would you describe your responsibilities? (Check appropriate column)

RESPONSIBILITIES	YES	NO
Providing graphics and display materials such as transparencies, posters, charts, graphs, displays, exhibits, and materials for television programmes.		
Performing photographic production work such as still photography, motion photography for films and television, developing black and white films.		
Installing system components such as closed-circuit television systems and film chains.		
Reparing and maintaining equipment.		
Providing instruction in the operation and use of instructional equipment.		
Assist in the production of TV and/or radio programmes by performing audio, video, lighting or camera operations		
Consultation with academic staff on the design and production of instructional materials such as graphics, still and motion picture photographic work, audio tapes, recording of TV lectures.		
The production of radio and/or TV programmes.		
Organisation of information i.e. cataloguing, and classification.		

RESPONSIBILITIES	YES	NO
The storage and retrival of information.		
Research on media use and effectiveness.		
Evaluation of audiovisual services.		
Coordination of audiovisual services.		
Teaching courses on Instructional Technology (incl. elements of design, development, production, utilisation and evaluation).		
Supervising media personnel.		
Developing educational specifications for new facilities.		
Providing for maintenance of materials, equipment and facilities.		
Implementing a public information programme.		
The evaluation and selection of materials and equipment.		
Developing and administering the budget for the entire programme.		
Plan and implement programme policies.		
Participates on faculty and university committees for curriculum and instructional planning.		
Assist with the selection of personnel for this programme.		
Provide staff development programme and evaluate staff performance.		
Coordinate the selection, organisation, and distribution of materials and equipment.		
Formulating programme purposes.		
Designing formal/informal workshops and in-service education.		
Recommending media applications to accomplish specific instructional purposes.		

5. Which of the following best describe the activities of the department/centre/service? (Check appropriate statement)

__ Participating in instructional design, course development, and the creation of alternative modes of learning.

__ Developing and maintaining a balanced, relevant collection of resources.

__ Providing maximum access to resources.

__ Operating the dept./centre/service with procedures that further the goals of the university.

__ Conducting in-service and orientation in instructional technology.

__ Providing production facilities and expertise in the production of a wide range of instructional materials including radio/TV programmes.

__ Maintaining professional resources for university staff, informing them about new materials and involving them in purchasing decisions.

__ Performing ongoing evaluations in the light of stated objectives and making programme modifications asneeded.

__ Building a public relations programme that communicates the role of the department/centre/service and its contribution to the goals of the university.

__ Providing advisory, consultative, and informational services.

__ Coordination of media activities with similar units, depts./centres/services in the state or country.

__ Offers a course(s) towards an education degree.

__ Offers an academic/professional programme which provides training to the level of: __Certificate __Diploma __Undergraduate degree __Masters __Doctorate.

6. What is the scope of the programme? (Circle appropriate response)

   a. Education only
   b. University-wide
   c. State-wide
   d. National
   e. International exchange

7. Who are the intended patrons? (Circle appropriate response)

   a. Students
   b. Academic staff only
   c. Open to all university students and staff
   d. Other (specify) _____.

8. What evaluation procedures are being employed? (How is programme effectiveness determined, and how often?)

   _____

   _____

   _____

(For Director or Head Only)

Finance:

1. How would you describe the financial allocation for the programme? __adequate __inadequate

2. What is your financial allocation for:

   1977/78 Academic Year ₦_____

   1978/79 Academic Year ₦_____

Personnel:

1. How many members of staff do you have? _____

   (State the number in each of the following categories)
   ___Administrative
   ___Technicians
   ___Media Specialists
   ___Academic/Professional

Equipment:

1. Is your supply of equipment for the objectives of the programme __adequate __inadequate?

   If inadequate, what are the needed hardware? (List)

   _____

   _____

2. Is your supply of materials/resources/software __adequate __inadequate?

   If inadequate, what are the needed resources? _____

   _____

Space Allocation:

1. Do you have adequate space to carry out functions? Yes __ No __

   If no, what space is needed? _____
   (describe function)

   _____

9. What constraints/restraints in your opinion are responsible for programme ineffectiveness, if any (i.e. departmental, faculty, university, government policies).

Responses are coded for the total sample
(number = 61)

1. What are the objectives of this department/center/service?

Service	21
Teaching/Service	26
Teaching/Service/Research	14

2. What is your specific job title?

Administrator/Director/Head	13
Lecturer	9
Media Specialist	9
Technician	30

3. What training do you have for your position?

Doctorate Degree	14
Masters Degree	10
Bachelors Degree	3
Certificate/Diploma	34

4. How would you describe your responsibilities?

Administrative	2
Administrative/Academic	8
Administrative/Production	3

4. Cont'd.

Production Only	11	Academic	6
Production/Academic	6	Academic/Administrative	2
Production/Administrative	1	Academic/Production	1
Technical Only	2		
Technical/Production	19		

5. Which of the following best describe the activities of the department/center/service?

Media Production	28
Curriculum or instructional development	7
Academic/Media Production	26

6. What is the scope of the program?

Education Only	16
University Wide	38
State Wide	7

7. Who are the intended patrons?

Academic Staff Only	42
Open to all university students and staff	12
Other	7

8. What evaluation procedures are being employed?

None	47
Verbal Response	4
Monthly User Analysis	10

9. What constraints/restraints in your opinion are responsible for program ineffectiveness, if any.

Organizational structure	6
University Enrollment	12
Infrastructural	15
Professional Attitudes	3
All of the above	21

VITA

Elizabeth Ann Wallace Soremekun was born in Aberdeen, Mississippi, on October 17, 1946. She attended Vine Street Elementary School and the Shivers Jr. & Sr. High School. In 1963 she entered Western Michigan University in Kalamazoo, Michigan where she graduated with a B.A. in Sociology in 1967. For several years she taught at the Libala Secondary School in Lusaka, Zambia. In 1971 she was admitted to Temple University and earned an M.Ed. in Educational Technology in 1972. She was appointed as a Lecturer/producer at the University of Ife, Ile-Ife, Nigeria in 1974 where she worked for two years before entering Indiana University for the doctorate degree in 1976. Upon leaving Indiana University she will return to the University of Ife to resume her position as lecturer in the Department of Educational Technology.

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