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Dissertation

A SURVEY AND ANALYSIS OF THE STATE OF EDUCATIONAL MEDIA IN THE ESTABLISHED NIGERIAN UNIVERSITIES

BY

ANDREW ANDARAWUS NKOM

(B.A., Ahmadu Bello University, 1970)
(M.A., Emerson College, 1980)

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DEDICATION

To my father, baba Nkom, and to iya Akut, my mother who, although they did not understand the drive, continued over the years to give their support.

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Abstract

A SURVEY AND ANALYSIS OF THE STATE OF EDUCATIONAL MEDIA IN THE ESTABLISHED NIGERIAN UNIVERSITIES

(Order No.)

ANDREW ANDARAWUS NKOM

Boston University, School of Education, 1982
Major Professor: Gerald F. McVey, Associate Professor of Education

Problem

The purpose of this study was to ascertain the availability of educational media in the 13 established Nigerian universities to support instruction. It was necessary thereafter to analyze the state of educational media as a step towards identifying factors that had impeded development.

Procedure

The data for the study were collected by means of a uniform questionnaire administered through personal interviews. The investigator, in addition, personally inspected and evaluated existing media facilities. The data,
which were both quantitative and qualitative, were collected

from those Nigerian universities founded between 1948 and 1977. The questionnaire covered the major facets of media systems including facilities for the effective use of media equipment, Specialized/Production facilities, hardware, software, personnel and budget. Data were also collected from three American institutions to afford a means for external comparison.

Results

Nigerian universities had not paid attention to providing suitable environments for effective media use. There was a wider range of hardware formats in the larger universities but hardware to student ratios indicated in-sufficiency of equipment in all the universities to make impact on instruction. Specialized/Production facilities showed concentration in darkroom facilities and graphics and transparency production facilities. Generally, all the facilities were in the second stage of development and had low utilization levels. Media directors and specialists indicated an acute shortage of trained media personnel but courses offered in educational media indicated emphasis on the theoretical aspects of media. Annual budgets were generally inadequate to cover media needs. However, Teaching Hospital Units reported having more support from admin-

istrative staff than University-Wide Units. The problems that had had the most adverse effects on media units were related to import restrictions.

Conslusions

There should be more coordination within and co-operation between Nigerian universities. Cooperation would include the establishment of a consortium to circulate materials and of a forum to facilitate the formulation of strategies for achieving common objectives.

The forum would pool available expertise to provide consultation services nationwide and contribute towards national policies in educational media.

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CHAPTER I

STATEMENT OF THE PROBLEM

Introduction

Nigerian universities, like all other universities in developing countries, have played and are continuing to play a leadership role in development efforts. In the educational system, Nigerian universities have direct responsibility for the training of higher-level manpower and, until recently, of most of the middle-level manpower. In addition, they have a high level of indirect responsibility in the training of manpower in Polytechnics and Colleges of Higher Learning since all such institutions are individually affiliated with universities. As consultants to governments, both at the national and state levels, these universities have had the opportunity to influence the direction of education in the planning process.

The nature of their place in society demands not only that universities keep abreast of all that is happening but that they go further to explore the unknown. In this sense, Nigerian universities are aware of developments

as they occur elsewhere and as they have a bearing on their work. In the process of education, dealing with the large population of students now enrolled in Nigerian universities and carrying out efficient and quality training dictates great dependence on educational media. The demand for education, balanced with demands for food and shelter and for other social services in a dynamic developing country such as Nigeria, makes a corresponding high demand on financial resources. This calls for a judicious use of these limited financial resources.

Research carried out elsewhere and as reported by Scanlon has demonstrated the great potential there is in educational media to solve instructional problems such as are to be found in the Nigerian educational system. Brown, Thornton, and Allred (1967), Plotkin (1963) and Eurich (1969) found that the use of educational media can result in savings in student learning time. Behrens (1972) found that educational institutions can not only increase their student/faculty ratios through the use of educational media, but also that the quality of instruction can be maintained with a relatively high student/faculty ratio. Seven studies carried out between 1958 and 1971 found that as the number of students increased, the cost per student

decreased. McCombs (1967), Brientenfeld (1971), and Eurich and Schwenkmeyer (1971) found that the utilization of educational media can result in actual cash savings to educational institutions. (Scanlon, 1974, pp. 10-12)

The reports of two Commissions sum up these findings. The U.S. Government Commission on Instructional Technology (1970) concluded, among other things, that educational technology allowed a more productive use of teachers' and students' time. The Carnegie Commission (1972) saw educational media as the answer to shrinking budgets in higher education. In terms of application as this relates to the Nigerian educational system, Dieuyeide (1971) sees educational media as part of the race against time, concluding: "Educationalists in the developing countries will be more inclined to see educational technology as a means of rapid dissemination of urgently needed education on a massive scale to large groups" (p. 180). These studies do indicate that a proper investment in educational media can be, in an educational system such as in Nigeria, a judicious use of those limited financial resources in view of overall savings.

Nigerian universities, aware of these advantages, must set the pace in educational media. Also, to carry out

their training programs efficiently and to fulfill their leadership role embodied in their supervisory and consultative obligations, they must set up viable educational media facilities that will adequately serve their own programs as well as serve as models in the Nigerian educational system.

Statement of the Research Problem

The purpose of this study was to ascertain the extent to which Nigerian universities had taken the initiative to positively influence the use of educational media by planning and setting up viable educational media facilities in their institutions. On the basis of the findings, appropriate recommendations were then to be made that would assist in efforts currently being made to develop such facilities and in this way influence their inclusion in the Nigerian educational system as a whole.

The study was designed to cover all aspects of educational media in range and sophistication. It sought to establish the presence of those physical environments necessary for the effective use of educational media, to analyze the range and quantity of media hardware and software available, the range and sophistication of specialized/ production facilities, and the number of trained personnel

available to run the media services.

The study sought, in addition, to establish the financial resources that were being made available to develop media facilities and operate media services. It sought to identify how certain specified factors have adversely affected the development of media facilities generally in Nigerian universities.

Justification of the Study

A review of the literature revealed that there has been some research carried out in Educational Media relating to Nigeria. Balogun (1976) dealt with the broad aspect of the subject in an attempt to establish policy guidelines for Educational Technology for Nigeria. Owuna (1977), Onyejemezi (1977), and Aroloye (1979), restricting themselves to Ahmadu Bello University, University of Nigeria, Nsukka and University of Lagos respectively, carried out historical studies on the development of Educational Media in these universities. Kamson (1979) restricted his research to a feasibility study regarding the introduction of television into the Nigerian educational system. Salisu (1980) also limited the study to the new media in Nigerian university libraries.

Two studies that dealt specifically with educational

media in the broader use of educational media facilities were those of Imogie (1979) and of Soremekun (1979). Imogie, however, restricted the study to the use of instructional media by faculty members in one Nigerian university. The most important study in terms of its relatedness to this present study is that carried out by Soremekun. Using six selected Nigerian universities, Soremekun researched the role of Educational Technology in achieving National Educational Objectives. The study dealt with six areas, namely: structure, student enrollment, personnel, finance, space and equipment. The areas were dealt with mainly as they related to the achievement of those educational objectives.

The study described in this dissertation has dealt exclusively with educational media. Although it has covered basically the same areas as covered by Soremekun, which form the major components in educational media, the focus of this study has allowed for much greater detail. Spread over all the 13 established universities in Nigeria, this has allowed for more accuracy in discovering the availability of these major components and in establishing their levels of sophistication in terms of overall Nigerian university education. Data were obtained on media units

in three selected American universities to provide some practical example of what was available elsewhere in educational media. The study was designed so that it covered all that is currently available in educational media systems. The instrument of the study can, in itself, provide a useful guide in this regard, as well as in indicating possible developmental stages in the establishment of specialized facilities. The result of the study can form a basis for future research in educational media in Nigeria.

CHAPTER II

REVIEW OF THE LITERATURE

The earliest efforts to develop educational media facilities in Nigeria, especially with assistance from outside foreign agencies and organizations, started in the 1960s. These efforts were initiated by individual institutions which sought assistance from these organizations. UNESCO played a very prominent role. In 1963 a workshop was organized at Ibadan, with the joint efforts of UNESCO and the Ford Foundation, on programed instruction. At the then Northern Secondary Teachers College (now Advanced Teachers College, Ahmadu Bello University, Zaria) which was set up in 1962 with assistance from UNESCO, efforts were made to incorporate educational media into classroom instruction. Also at Ahmadu Bello University there was a project by Indiana University in 1963 with support from USAID. Of the more recent efforts at Ahmadu Bello University was a consultancy project in 1975 by the University College of Cardiff. The report recommended, among other things, an assessment of the specialist needs of all teach-

ing departments and permanently equipping major teaching rooms with basic audio visual aids. The report also recommended designing and building a new Educational Technology Centre for more effective control and increased efficiency with spaces provided to ensure greater and better coordination.

These efforts have not yielded any remarkable results. Equipment that had been provided fell into disuse because there was a lack of personnel and adequate preparation had not been made. Equipment were purchased even when the teachers did not know how to use them, as was the case in Zaria. Recommendations were made, but their proper implementation which was crucial to success was not carried out. An example of the more successful efforts was that at the College of Education Abraka. An Audio-Visual Centre was established at Abraka in 1971 with assistance from UNESCO. This centre was integrated with an Educational Technology Centre which was set up in 1976 at the College and the Centre now offers media courses to Nigerian Certificate in Education (N.C.E.) students and organizes seminars and workshops for primary school teachers. There have not been any arrangements with foreign universities which have the expertise to develop media facilities in

terms of actually making needs assessments and drawing up educational specifications. The current list of American universities cooperating with Nigerian universities in various fields indicates that no Nigerian university has arrangements specifically in educational media. (see Table 1) In this sense, it is not clear how Nigerian universities are working towards developing educational media without this kind of cooperation with foreign universities with the expertise.

At the national level, efforts in educational media are visible now with the setting up of the National Educational Technology Centre. The Centre is planned to have regional branches to provide software and advice to schools, the emphasis being placed on post primary institutions. The experience of the unit located in Kaduna indicates that the effect of the Centre has been limited. Thus, because of the number of schools it is supposed to serve, its effect is felt only in a limited area of the one state, Kaduna State. However, its television and radio broadcasts from Nigerian television/radio Kaduna have wide coverage. The unit does not have the personnel or facilities to serve the 10 northern states adequately as it is supposed to do on an individual school basis. It can only

Table 1

Present Links Between U.S. and Nigerian Universities

U.S. University	Nigerian University	Objective	Field
1. U. of Pennsylvania	U. of Ibadan	Academic exchange	Medicine, Dentistry, Law, Engineering, etc.
2. Georgetown U.	U. of Ibadan	Student exchange (ISEP)	Student exchange
3. Georgetown U.	U. of Ife	Student exchange (ISEP)	Student exchange
4. U. of Wisconsin Madison	U. of Calabar	Development of Faculty of Agriculture	Agriculture
5. U. of Texas Austin	U. of Port Harcourt	Development of programs in Engineering & Management studies	Engineering & Business
6. U. of Texas Austin	U. of Benin	Faculty development in Optometry	Physics and Optometry
7. U. of Oregon	U. of Benin	Faculty development	All areas
8. Howard U.	All Nigerian Universities	Faculty and student exchange	Faculty development

SOURCE: Nigerian Universities Commission, Washington Office, 1982, p. 17.

have that impact when it is further broken down to service smaller units, perhaps on a state basis. It is planned that an independent instructional television channel will be established to broadcast instructional programing nationwide.

Other efforts are visible with the establishment of the Nigerian Audio Visual Association (NAVA) by media practitioners. Activities are now limited to the presentation of papers at annual conventions, but NAVA has established a national chain for communication between members. It has also started efforts at establishing areas of specialization where members in each area of media specialization can offer consultancy services to individuals, organizations or governments. It is to be hoped that NAVA will grow to set up standards and carry out research projects of particular relevance to Nigeria.

Educational media specialists have consistently shown the difference there is between mass media and educational media. Educational media is not simply the use of the technologies of mass media for instructional purposes as they are used in mass media for information and entertainment. The definitions of educational media are agreed on the fact that educational media is a unified

whole, a system formed of many often diverse parts but with a common purpose. Prostano and Prostano (1977) define the educational media system as being made up of: foundation elements; support elements; and primary elements.

Whereas media systems contain at some level the foundation elements of media, facilities, personnel and budget, as well as the support elements of management and technical services, the primary elements differ as they are dependent on the extent of availability of the foundation and support elements. Among the primary elements, Prostano and Prostano include: planning and implementing curriculum; instruction and inservice; design and production; and guidance and consultant services. In other words, for a media system to perform the primary function of guidance and consultant services, for example, the foundation and support elements must have been developed to cope with that function as well as the normal instruction function. Determination of what a media system should contain in terms of the facilities listed below, as visible contents, must be made through a thorough needs assessment and the drawing up of detailed educational specifications. (Simpson, planning school media)

Summed up in terms of their visible content, media systems are made up of:

1. Physical facilities for the effective use of media and for the proper storage of media,
2. Hardware stocks and software holdings covering a wide range of media formats,
3. Specialized/production facilities for instructional purposes and to supplement software holdings through production or modification,
4. Personnel to cover all of the above aspects including planning, design, production, acquisition, circulation and maintenance.

It is this content of each individual system that must be organized as a unified whole and each aspect given proper attention.

Physical Facilities for Media Use

Research studies carried out in this aspect of the media generally have shown the necessity for properly designed facilities for media use. Improper environments can result in extreme discomfort. In children, they can result in permanent damage. In a study of children, carried out in Texas, Harmon (1951) reported that 52 percent of elementary school children were leaving school with

an average of 1.8 observable preventable defects per child, and contributing to the causes or severity of the defects included improper seating, improper lighting and improper placement of working materials. In other studies, lighting caused stress and undue fatigue in adults. Data based on studies and reported in architectural and engineering publications, as well as data based on use by media specialists, provide information that, when properly utilized, can provide the proper environments for the effective use of educational media. The media use elements include lighting, acoustics, thermal environment and aspects of display systems. It seems a matter of course to state that any equipment is as good and as effective as the environment in which it is used. Equipment use and the environment in which they are used also contribute to their life span and in this way affect overall costs in repairs and replacements.

In the general design and planning of instructional spaces where media will be used, De Chiara and Callender (1973) report that: " . . . the design criteria and planning considerations in large group facilities with media are probably the most critical of any type of space that might be provided" (p. 254). They also state that the key to the

proper functioning of large group areas is the integration of the systems for displaying information and other media uses such that lighting and equipment are connected to and controlled from a central location or the teacher's lectern. This integration should include permanent fixtures of projection screens and public address systems.

In all instructional spaces where media will be used, lighting is perhaps the most critical element because most media employ the visual stimulus for the identification and assimilation of information. Harmon (1951) states that "Vision is proving to be the dominant function in all man's actions and relations to his space world!" and " . . . its correlate - light - then is the dominant energy in man's surround." He concludes, "Light's characteristics of quantity and quality in any environment are among the major determinants of the efficiency of all visual processes in that environment." (p. 33)

Media facilities planners and designers and researchers in media use have placed great emphasis on the proper provision of suitable lighting in instructional spaces. The characteristics of lighting of concern in educational media pertain to the amount of light in an instructional space, and its control for specific functions.

They also include, particularly, the quality of lighting in terms of the control of glare from natural light and of reflectances as well as the provision of suitable brightness contrast ratios (BCR) between task and surround. Different media formats and different instructional tasks place varying requirements for amounts of light that would promote visual comfort and good task performance. Since instructional spaces cannot be designed for specific light requirements, it becomes necessary to incorporate in such spaces light control devices that would adjust the amount of light for the varying light requirements. Studies have provided illumination levels for instructional spaces, summed up by McVey (1975, p. 65), as shown in Table 2.

Table 2

Illumination Levels for Instructional Spaces

Illumination in Footcandles*	Activity
0 - 30 fc	audio-visual activities such as projection of movies, slides and television viewing
30 - 50 fc	general classroom activity such as lectures
50+	critical visual tasks such as artwork

* for conversion purposes 0.929 fc = 1 lux.

Specifically for projected materials for medium to large group spaces, De Chiara and Callender (1973) recommend 5 - 10 fc for projected television and films; 10 - 20 fc for slides; and 30+ for other class activities (p. 262).

Although the quantity of light is important, it is however not as critical as the quality of light. Research on vision has indicated that the human eye has a cone of only 2 degrees of 100 percent accuracy in vision at the point at which the eye comes to a halt. The area of critical vision forms a cone of 30 degrees. (McVey, 1971) In the normal process of detection of informational cues, the eye is involuntarily drawn to bright objects or surfaces or to areas that contrast with the general background. The use of BCR in the lighting of instructional spaces or of viewing surfaces is an attempt to exploit these properties of the human eye. These properties of the eye are also exploited in the placement of viewing surfaces or screens. The importance of BCR is emphasized by Flynn and Seagil (1970); Howell and Goldstein (1971); McCormick (1970); and McVey (1971).

For instructional spaces BCR application is in relation to the lighting of teacher positions and particularly to providing suitable viewing conditions for projected

images and other visual displays, and for closework tasks. Recommendations for BCR range from a minimum of 1:1 to a maximum of 3:1 between the task area and its immediate surround, and 10:1 between task and area beyond immediate surround. Minimum BCR recommendations include 1:1 (Harmon, 1951); 2:1 (De Chiara & Callender, 1973); and 2.5:1 (McVey, 1971). Specialists are agreed on the maximum acceptable BCR of 10:1. BCR is affected by glare resulting from natural light streaming into the instructional area through windows, and by reflectances off surfaces such as walls and furniture. While this problem can be minimized in the design of facilities by limiting windows or the use of large expanses of glass, the use of shades and blinds is necessary when there are windows. The choice of furnishings and paint on walls reduces the problem of reflectance.

All of the above would indicate the need for careful attention being paid to instructional areas where media are used, in terms not only of the amount of lighting but particularly in its quality, to ensure accurate detection of informational cues as well as visual comfort and to promote good task performance. McVey (1971) states that as a general rule and without the use of elaborate measuring devices, " . . . all visual aids should be displayed in rooms dark enough so that image details and colours are

accurately rendered, but no darker" (p. 12).

Just as important as light to learning is the auditory sense. All instructional materials are accompanied by sound either in the form of an audio track or in the form of the instructor's voice. This necessitates the control of sound to reduce noise or unwanted sound that interferes with the informational cues. Reduction of noise in the instructional area involves isolation of the area from ambient sound from traffic noise, or noise from adjacent instructional areas, and absorption and containment such that sound does not escape from a location to create noise in another space. Characteristics of sound that are of concern include volume and quality. The quality of sound is influenced not only by fidelity, in terms of its faithful reproduction from audio speakers, but it is also influenced by reverberation where this could create noise. Fidelity can be promoted through quality equipment. Reverberation which also could affect the overall quality of sound even with quality equipment can be reduced through the use of sound absorption materials including acoustic tiles and carpeting. In the placement of sound sources for the media such as for projection purposes, it is recommended that loudspeakers be placed directly in front of and below

the projection screen.

A suitable thermal environment is necessary not only for the comfort of students but it is also necessary for the efficiency and life of media equipment and materials. Particularly in projection rooms and television studios, inadequate cooling systems cause a reduction in projector lamp life, film damage and equipment malfunction. McVey (1975) indicates environmental control limits for selected media operation and storage, which are reproduced in Table 3.

Table 3

Environmental Control Limits

for Selected Media

When Housing	Temperatures Should Be	Relative Humidity Should Be
Film Projectors	65 - 70°F	25% - 40%
Film	Below 80°F	25% - 60%
Audio Tape	60 - 90°F	20% - 80%
Computer	75°F CONSTANT	50%

Projection systems are to be found in two formats in educational media: Front Projection and Rear Projection. The main advantage of the rear projection system is that high levels of room lighting and of ambient light do not affect the quality of the projected image as they do with

the front projection system. Also, there is no interference in terms of cast shadows by the instructor. However, the rear projection system needs additional space at the back of the screen. Suitable projection screens can be used to minimize problems associated with projection systems.

The aspects that must be taken into account in projection systems include:

Viewing distances
Viewing area
The appropriate screen size
The proper type of screen
The appropriate projector(s)

The first three aspects are interrelated. The size of the projection screen or surface determines the viewing distances (minimum and maximum). The size of the viewing area is determined by the viewing distances and the maximum viewing angle. The viewing angle is influenced by the type of projection screen but for the front projection system generally, De Chiara and Callender (1973) indicate a range of 20^{o} to 50^{o} off the center of the screen. De Chiara and Callender, McVey, and others also indicate that because there are difficulties such as those resulting from personal preferences, it is difficult to set definite standards here. There is therefore great de-

pendence on a trial and error approach in this regard.

Recommendations by educational media specialists resulting from research place the minimum viewing distance between twice and four times the width of the screen (2W - 4W), and the maximum between six times and twelve times the width of the screen (6W - 12W), depending on the particular media format. Calculations of viewing areas or screen sizes are usually made on this basis. In a general sense, De Chiara and Callender (1973) present the minimum and maximum viewing distances established from studies as:

Minimum	Maximum	Format
2W	6 - 10	Film, slides and Projected TV
4W	12W	Television receivers

Based on his personal experience and experimentation, McVey (1975) presents in more detail the viewing distances that have worked for him in terms of the total display surfaces, as shown in Table 4 which follows. In addition, he recommends for viewing angles, that is, angles of declination and inclination from the horizontal, the following as shown in Table 5.

Table 4

Viewing Distances *

Minimum Width	Maximum Width	Situation
.6W	1.5W	High resolution, multi-image presentations or environmental stimulations
1.0W	3.0W	Multi-image informational presentations
1.5W	4.0W	Overhead transparencies reproduced 1:1 from typed (pica) originals
2.0W	6.0W	Most commercially produced educational media including high resolution TV
6.25W		Optimum viewing distances for detecting changes in informational displays
4.0W	10.0W	Standard resolution TV

* Minimum and maximum distances are based upon width of display.

Table 5

Viewing Angles

Minimum Degree	Maximum Degree	Situation
-30°	+10°	Recommended viewing angle limits for near viewing task, i.e., AV/TV carrel
-15°	+25°	Recommended viewing angle limits for distant viewing tasks, i.e., projection screen in large group classes with stepped or sloped floor
0°	+30°	Limits with presentation spaces with flat floor

Specialized/Production Facilities

In this area of educational media, there cannot be any set standards for a media system. The provision of specialized facilities in terms of preferences between individual facilities and level of sophistication of each individual facility are dependent on the primary elements of the media system. It depends, in other words, on what specialized facilities are needed and what they are needed for; on what function they will play in the instructional program. Another determinant factor of both range and sophistication is cost, i.e., what the instructional program can afford. This aspect could affect the establish-

ment of specialized facilities in terms of pace, that is, force a slow pace of development within the individual specialized facility and across the facilities collectively. The establishment of specialized facilities, therefore, demands a careful and thorough needs assessment.

The general applications of specialized facilities across such facilities include:

1. General instructional purposes such as illustration and self-evaluation,
2. Record keeping,
3. Production or modification of software for extended instructional support,
4. Multiplication of available software or materials,
5. Practical training purposes such as in production.

Some of these functions of specialized facilities are influenced by existing market situations both of software and personnel. Where there are software readily available in the market, production of software would be minimized and in the reverse situation, there would be more emphasis on production subject to the availability of suitable personnel. The instructional system could also affect the provision of or sophistication of facilities when software may need to be modified to suit an instructional system

different from the one from where the software were designed and produced.

It is these factors, such as lack of suitable software and the lack of trained personnel such as teachers, that Schramm (1977) and Valerien (1974) have seen as necessitating a great dependence on educational media generally in developing countries.

Specialized facilities have, in a general sense, their function in an instructional program. In television, the closed-circuit distribution format, where productions can also be recorded on tape for tape distribution, has the advantage of immediacy. It also has its primary advantage in its capacity to reach simultaneously all buildings hooked up to the system. The main problem with this format is its high cost and the technical problems involved. Television distribution by taped recordings is the more generally used for instructional purposes. Due to the ease in recording and editing and with the reuse capability of videotapes, the television format is used extensively to cover areas that were usually covered by movie films. Except where there are projected television facilities, the main problem with television is the limitation it places on viewing areas due to the size of television

screens. The film format has the advantage of allowing larger viewing areas, but its limitation is in the need for highly qualified technical staff, especially in the 16MM format which has been the most commonly used format. The processing procedures and the equipment involved also limit the viability of the movie format as a specialized facility in an instructional program. Movie films are generally purchased from professional film producers.

Applications of the television facility in instruction have included self-viewing and analysis, micro-teaching, analysis of significant instructional situations, analysis of student behavior in the practical aspects of training, and practical training in aspects of the television medium such as production and script writing.

Among the basic specialized facilities that have relevance to most of the other facilities are graphics and transparency, darkroom and audio recording. Graphics and transparencies are used for simple illustration purposes or to provide summarized material such as tables and graphs for instruction. They can be used with slides or transformed into slides for more structured presentations. Slides and graphics provide basic material for television presentations and recordings. The audio recording facil-

ity provides all audio requirements in language laboratories, slide presentations, and in audio tracks in television, film and filmstrips. Darkroom and audio recording facilities are used for keeping records of set events or of a progression of events and of lectures and talks. Just as with the television facility, all these other facilities also have their application in practical training in aspects of each medium. The maintenance facility is necessary for the proper maintenance of equipment and facilities in good working order. The language laboratory facility is also necessary in all instructional programs where foreign languages are taught.

Hardware and Software

Concern with hardware and software is not only that they are provided in wide enough formats, to more fully enrich the instructional program. It is also that they are provided in sufficient quantity to allow use by all the population to be served. Educational systems set standards that apply to their system. Hardware and software collections are related to the instructional system in which they are used, especially in terms of quantity.

The Nigerian educational system does not as yet have quantitative standards for educational media in the areas

in which they are available elsewhere: hardware, software and personnel. There are quantitative standards in the American educational system which apply to schools but no quantitative standards are available that apply specifically to university education. The point of reference for Nigerian universities at this stage is a comparison in a practical way with what is available in American universities. In the definition of Simpson, the instructional program in Nigerian universities is the teacher-oriented program with its emphasis on providing media to supplement the teacher. On the other hand, however, the American instructional program is the integrated materials and systems approach that places more emphasis on the individual student. Individual students can loan out and use media equipment in American universities, which is not the case as yet in Nigerian universities. In this sense, one would expect to find more hardware stocks in American universities than in Nigerian universities. Since American universities have had a longer period in which to develop and since equipment and materials are readily available, one would expect higher standards in their media systems than in Nigerian unversities. The comparison was intended to give guidance by indicating what has been achieved by American universities.

Summary

UNESCO and other organizations have played a prominent role in efforts to incorporate educational media into classroom instruction. Success has been limited due to the insufficiency of initial planning. The setting up of the National Educational Technology Centre (NETC) and of Nigerian Audio Visual Associaton (NAVA) are steps that will lead to the development of educational media in the Nigerian educational system.

Media specialists have consistently demonstrated the necessity for developing all facets of media systems including physical facilities for the use of media, specialized facilities, hardware and software, and personnel. Aspects necessary for effective media use include proper lighting and light control, acoustic treatment, the provision of comfortable thermal environments and of suitable projection and display systems. In large group areas, media use elements also include the integration and control of display systems, media equipment and lighting from the lectern.

Light dimmers are used to adjust light levels to suit the different requirements dictated by different media formats. The need is to provide minimum brightness/

contrast ratios between the task area and its surround of between 1:1 and 3:1 and a maximum ratio of 10:1. Blinds are used to exclude natural light to help maintain these ratios. Acoustic treatment includes the use of acoustic tiles on floors and ceilings to reduce reverberation and promote a good listening environment. Heat is generated by equipment and also particularly by the human body. Thus, in an instructional area, provision is made for good air circulation to dissipate heat. The effect of heat on equipment and materials is to reduce their life span.

In projection systems, seating should be arranged to suit the minimum and maximum viewing distances dictated by the different projection or display formats. Projection screens are selected to suit the viewing area and the peculiar conditions of the instructional space. They are permanently fixed so that they are properly positioned at all times for projection needs. Specialized/Production facilities are established to service the particular requirements of the instructional program. These requirements also dictate the level of sophistication of each Specialized/Production facility. Hardware and software are provided in as wide a format range as possible to better enrich instruction. They are also provided in suf-

ficient quantity to cover the needs of the population served. Requirements in terms of personnel are dictated by the services the educational media unit is set up to provide.

CHAPTER III

DESIGN OF THE RESEARCH STUDY

Review of the Research Problem

The purpose of this study was to ascertain the extent to which Nigerian universities have taken the initiative to set up and develop educational media facilities for instruction and training. The study was necessary as a step towards identifying weaknesses in the developmental process of educational media facilities. The identification of such weaknesses is basic to any recommendations as solutions so that modifications can be made to ensure the success of developmental efforts in this area, not only for the universities but also for the Nigerian educational system as a whole.

The procedures used were designed to give comprehensive information on the state of educational media in Nigerian universities. Other studies carried out in this field in Nigeria have not been as comprehensive in the coverage they have given to educational media nor have they covered the entire university system. They have also not

been so structured that they can offer guidance in the whole process of establishing or developing educational media facilities to as high levels as are obtainable elsewhere in educational media systems.

Major Assumptions

The study assumes:

1. that educational media is desirable not only in Nigerian university teaching but in the Nigerian educational system as a whole,
2. that Nigerian universities can provide educational media facilities and services in their institutions.
3. that Ministries of Education, especially at the state level, will look more favorably towards the development and use of educational media if Nigerian universities can demonstrate its viability.

Definitions of Terms

Educational Media

Tickton (1970) defines Educational Technology as:

> s sytematic way of designing, carrying out, and evaluating the total process of learning and teaching in terms of specific objectives, based on research in human learning and communications, and employing a

> combination of human and non-human resources to bring about more effective instruction. (p. 7)

Scanlon (1974) also sees it as being:

> concerned with the facilitation of human learning through the systematic identification, development, organization and utilization of a full range of learning resources and through the management of these resources. (p. 3)

He further defines "learning resources" to include, "the people materials, settings, tools and equipment, and activities that are specifically designed for instruction and that exist and are utilized for instruction" (p. 3).

In the setting of the study in Nigerian universities, the term "Educational Technology" was widely used, but this use seemed to have translated itself into the placing of emphasis on machinery and equipment.

The term "Educational Media" is preferred in this study as a term that diffuses undue emphasis and places equal emphasis on the package of "learning resources" as defined above by Scanlon. "Educational Media," therefore, includes their technologies and materials which are thus employed in the physical and human environment for the whole process of learning. In its broad sense, the term is defined in the approaches of both Tickton and Scanlon.

Where the term "Educational Technology" is used in this study, it will be deemed to hold this same definition.

Group Area

A space with definite boundaries, whether permanent or not, specifically designed for instruction and to accommodate a predetermined number of users. In this regard, the terms "small," "medium," and "large" refer to that set number of users of the area. The numbers have been determined by class sizes in the setting of the study.

Small Group Area. - a space providing seating for less than 50 users.

Medium Group Area. - a space providing seating for up to 150 users.

Large Group Area. - a space providing seating for up to 500 users.

Other Terms

Closed-Circuit Television (CCTV). - a video system that distributes the video signal usually by cable, such distribution being limited to the rooms or building(s) connected by cable to the system; a video system that distributes instructional video materials by this method.

Television Studio. - a video facility consisting of at least one open floor space with a control room where video programs can be originated, produced and recorded on video tape. The facility usually has equipment for this

purpose, including video cameras, audio equipment, studio lighting and video editing facilities.

Audio Studio. - a facility consisting of one or more rooms acoustically treated to control noise. It is usually equipped with audio playback and recording equipment, microphones and a mixer for the recording and production of audio tapes.

Radio Station. - a facility equipped with the necessary audio and broadcast machinery for the transmission of the audio signal, such transmission being on a set frequency with reception limited to within a particular area or region.

Front Projection. - a projection system in which both the projection equipment and the viewers are on the same side of an opaque screen which reflects the image.

Rear Projection. - a projection system in which the projection equipment is behind a translucent screen upon which the image is displayed while the viewers are in front of the screen.

Media Units. -

University-Wide Unit - a media service unit which is either centralized and independent such as a Centre for Educational Technology or located as part of a faculty of

education to support university teaching across faculties.

Teaching Hospital Unit - a Media Service unit such as a Medical Illustration or a Biomedical Communications Unit set up in a Teaching Hospital to serve the specific needs of that Teaching Hospital.

Media Specialist. - a member of media staff with the appropriate training in both education and the media, able to originate and carry through to the production stage, media programing or instructional materials.

Media Technician. - a member of media staff with technical skills in specialized area(s) able to operate or install media equipment and/or able to carry out simple maintenance and repair for such equipment.

Data Required for the Study

To collect the necessary data, the problem was split into sections that covered the four basic foundation elements in media systems: facilities, media, personnel, and finance. Data required were both quantitative and qualitative.

Data were collected following the outline set out below:

1. General Information

    a. Name of university
    b. Title of Media Service Program
    c. Population served

d. Position of respondent
e. When media program was established
f. Whether educational specifications were prepared
g. Whether an academic program in educational media was being offered.

2. Physical Facilities

a. The availability of group areas for individual to Large Group Instruction
b. Whether the group areas were fitted out for multi-media use by providing suitable acoustic treatment, suitable lighting and light control for varying task requirements, and whether they had projection facilities.

3. Hardware and Software

a. The availability of equipment, from a listing of about 30 hardware formats, and an indication of the number of pieces in stock for each format
b. The availability of software, from a listing of nine software formats and an indication of the number of items available for each format
c. An indication by percentage, of the mode of acquisition of software.

4. Specialized/Production Facilities

a. The availability of any of the following facilities:
Television Facility
Film Production Facility
Radio Station
Audio Recording Facility
Darkroom Facility
Graphics/Transparency Production Facility
Maintenance Facility
Language Laboratory

b. Stage of development of each facility determined by the use of three developmental stages and the equipment available
c. Level of utilization of each facility determined by output.

5. Personnel

The number of trained personnel available in the services for:
Television
Film Production
Radio Station
Graphical/Transparency Production
Audio Recording
Language Laboratory.

6. Finance

Total budget for the years 1979/80, 1980/81 with expenditure broken down into salaries, equipment, software and repairs.

7. Problems

Indicating on a 5-point scale how adversely 10 problems that are generally to be found with media facilities had affected the development of individual media facilities.

The Survey Instrument

The instrument employed to collect data was a detailed questionnaire of the checklist format similar to formats developed by Fulton (1966), Erickson (1968), and particularly Bantley (1977). It included scenarios similar to those developed by Simon (1980). The questionnaire, set out by the different subsections, was designed to fit the requirements of each subsection. (See Appendix A)

For the physical facilities, availability of each group area was established and was then followed by a checklist of basic items necessary for multi-media use as per the group area. The checklist enabled the making of a qualitative assessment of the group area's media use capability. After establishing the availability of each specialized facility, three scenarios followed presenting three stages of development or of sophistication for each facility. As a means of validating the choice by the respondent of a stage of development of the facility, a checklist of equipment usually to be found in all the three stages followed. The scenarios, along with the checklists following,established the qualitative status of each specialized facility. To evaluate the production capabilities of production facilities, a utilization checklist was employed that sought, either by percentage use over a period of time or by the number of items of software produced over a given period of time, to establish the level of use of each facility. This evaluation was without regard to the stage of development of the production facility.

The subsection on personnel sought a quantitative evaluation of trained personnel in a checklist set out by specialized media format. That on finance also sought a

quantitative evaluation of budgets and the breakdown in allocations.

Realizing that certain problems are usually to be found in media services, the instrument employed a checklist with a 5-point scale for the purpose of determining how severely each problem had affected media services in Nigerian universities. The range of the scale was "Most Adverse" to "Least Adverse."

Collecting and Processing the Data

The 13 established Nigerian universities are spread all over the country and data collection involved traveling very long distances (see Fig. 1). Also, in view of transportation and accommodation problems, universities were grouped into six sectors for convenience. During a visit to each sector an average of three working days was spent at each university.

The telephone system was not efficient, there being no direct dialing connection between Zaria, the researcher's base, and the university cities. Also, the postal service was very slow and not highly reliable. In an earlier exploratory letter that the researcher had sent to the universities, the response rate had been only 15.4 percent. It was, therefore, not possible to make prior arrangements for visits in the period of time available. However, the



Figure 1. Location of the 13 Established Nigerian Universities.

visits were timed to fall at a period when the universities were in session. In addition to this, the researcher obtained a letter of introduction from the Secretary of the Nigerian Audio Visual Association (NAVA) of which the media directors and specialists were members. (See Appendix B)

Data collection was concentrated in educational media units, centralized or non-centralized, and the Teaching Hospitals. These were considered the units with the highest media needs for both training and instruction, and had therefore the most cause and motivation to establish specialized and production facilities. The search, however, went further than these units to establish the presence of such facilities anywhere else in each university. The libraries were included because of the possibility that media facilities might be part of library services. Libraries cater to the entire university community and they also stock non-print collections. They would, therefore, have educational media facilities to complement their non-print collections. Data collection in libraries was in respect to these aspects.

During the visit to each university, the purpose of the research study was explained to the respondent who then made an appointment, usually for the same day or the follow-

ing day, for a personal interview. At the interview, terms not understood were explained. The researcher then either filled in the questionnaire as the data were provided or allowed the respondent, under close guidance, to complete the questionnaire. In many cases, the researcher was allowed to check for and identify the data himself. After the interview, and having established what facilities were available, the researcher personally inspected available facilities and made on-the-spot evaluations. Efforts were made at each university to collect pamphlets, catalogues, annual reports, proposals and floor plans or any material of any relevance to the research study. Table 6 shows the positions held by the respondents in Nigerian universities.

Table 6

Positions Held by Respondents
(N=20)

Position	Percent (%)
Media Director	40.0
Dean	5.0
Head of Department	5.0
Media Specialist	15.0
Media Technician	15.0
Lecturer	20.0
Total	100.0

Data were collected from three American institutions for the purpose of making comparisons and providing evaluation from practices in the American universities which have well established media systems. Three American institutions were selected comprising one large state university, one medium large private university and one small state college. The same questionnaire (see Appendix A) was completed by the University of Indiana in Bloomington, Boston University and Bridgewater State College.

Having concluded the personal interviews and the personal inspection of facilities in Nigerian universities, and having received responses from the American institutions, data were organized, compiled and analyzed for the purpose of presenting the findings.

Recommendations were then made on the basis of the findings to offer guidance in the whole process of establishing and developing educational media facilities not only in Nigerian universities, but in the Nigerian educational system as a whole.

CHAPTER IV

REPORT AND ANALYSIS OF DATA

General Information

University education, until recently, had been the province of the federal government of Nigeria. Development at the lower levels of education have had great impact on university education to the extent that state governments are beginning to break the monopoly of proprietorship of the federal government in university education.

State governments had been encouraged to concentrate their efforts on secondary school education and other post-primary levels of education. The Universal Primary Education scheme and efforts by state governments, along with limitations placed by the single-handed efforts of the federal government, have resulted in a bottleneck at the entry point into university. This situation and the acute need for manpower has forced interest by state governments in university education, and has resulted in the setting up of four state universities since 1980.

These universities are Rivers State University of Science and Technology, Anambra State University of Technology, Imo State University and Bendel State University.

The oldest university, the University of Ibadan, was set up in 1948. With independence, there was increased interest and pressure to establish more universities, especially because the only university had an enrollment of under two thousand in a country which needed to take charge of its own affairs. The Ashby Commission was set up to look into the desirability or otherwise of establishing new universities. This resulted in the establishment of the University of Nigeria at Nsukka in 1961 and the universities of Lagos, Ife, and Ahmadu Bello in 1962. The universities were regional in outlook. The military regime decided to take over the control of all universities including state owned universities. The Midwest Institute of Technology which had become a state university in 1972 was taken over by the federal government in 1975. In the same year, the Jos campus of the University of Ibadan, the Calabar campus of the University of Nigeria Nsukka and Ado Bayero College gained the status of university. New universities were established in Maiduguri and Sokoto and new university colleges were set up in Port Harcourt

and Ilorin. Thus in the period 1970 to 1977, eight new universities were set up bringing the total number of universities in Nigeria to 13. Setting up these newer universities in that short period of time meant that, ". . . adequate planning and planned development were absent in the founding of the seven new universities of Jos, Kano, Maiduguri, Ilorin, Calabar, Port Harcourt and Sokoto" (Osuntokun, 1982, p. 15).

Resulting from this problem was that although the new universities occupied buildings that had been used for instructional purposes, the buildings were inadequate in both quantity and quality. Facilities were housed in temporary structures that had to be erected to satisfy the more immediate needs. Demands on the federal government for the financial resources necessary to run all the universities, and carry out capital development, forced constraints on expenditure from 1976. Development of permanent physical facilities was greatly hampered and Nigerian universities have had to continue operating from these temporary structures. The situation has had serious implications for the planning efforts of media directors and specialists. The dilemma has been that of whether or not to commit large sums of money to developing media ser-

vices in the temporary structures that have usually been assigned to them especially when there is no certainty as to when permanent structures will be made available.

The growth in enrollment in Nigerian universities, even with the limitations in terms of physical facilities, has been immense. The student enrollment in 1970 was 13,733. Since then and in a period of about 10 years, student enrollment in Nigerian universities has grown by well over 500 percent. Even then, it has not been possible to come close to coping with the number of students qualified for enrollment. There has not been adequate coordination of efforts between the different levels of government. While the absence of suitable physical facilities has tended to mitigate against the provision and development of educational media, dealing with this immense growth in student population would suggest an urgent need for educational media to ensure effective and quality instruction. Class sizes have grown such that there is need for basic instructional aids including public address systems even simply to reduce the strain on university teachers.

Nigerian universities have been operating a system in which for normal undergraduate programs students undertake three academic years of study. Entry requirement has

been the G.C.E. 'A' level in the relevant subjects or specified equivalent qualifications. A new policy on education has been drawn up and is due to take off. Under the new policy, normal undergraduate programs will last four academic years.

Since taking over all the universities in 1975, Nigerian universities have been federal universities in the sense that they are owned by the Nigerian federal government. The five new universities of technology are also owned by the Nigerian federal government, but their disciplines of emphasis are specifically related to technology where the others have a much wider range of disciplines. They were set up to specifically train technologists for the development efforts being made that are now visible in the oil and steel industries. As a country, Nigeria is made up of 19 states. Four of the states have now established their own universities and these are called state universities because they are owned by state governments.

Referring to Table 7, a listing is shown of Nigerian universities in the three groupings of established federal universities representing those set up by 1977, the new federal universities set up from 1980, and the state government owned universities.

Table 7

Universities in Nigeria

University	Founded	Population*
A. Established Federal Government Universities		
University of Ibadan	1948	9,000
University of Nigeria	1960	8,000
University of Ife	1961	10,000
Ahmadu Bello University	1962	16,000
University of Lagos	1962	8,000
University of Jos	1972	3,000
University of Benin	1975	5,000
University of Calabar	1975	2,500
University of Ilorin	1975	2,000
University of Maiduguri	1975	3,000
University of Sokoto	1975	1,000
Bayero University Kano	1977	3,000
University of Port Harcourt	1977	1,000
	Total	71,500
B. New Federal Government Universities		
Federal University of Technology Bauchi	1980	250
Federal University of Technology Owerri	1980	250
Federal University of Technology Makurdi	1980	250
Federal University of Technology Akure	1981	250
Federal University of Technology Yola	1981	250
	Total	1,250
C. State Government Universities		
Rivers State University of Science & Technology	1980	1,000
Anambra State University of Technology	1980	-
Imo State University	1981	1,000
Bendel State University	1981	1,000
	Total	3,000

*Projected enrollment for 1981/82 session.

Physical Facilities for Multi-Media Use

This section was intended to discover the presence of physical facilities designed for effective multi-media use for individual to large group instruction. Among the media use elements looked for were: light control and darkening facilities, acoustic treatment, projection facilities for both front and rear projection, viewing surfaces and public address systems. Other elements in Large Group areas included stepped/sloped floors, and light and multi-media control from podiums.

Group Areas

While for general instructional purposes no Nigerian university had individual study areas, all of them had the physical facilities for small to large group instruction. Physical facilities were distributed by faculty.

Among the different media use elements looked for, the following were the findings:

1. There were no light control devices, such as light dimmers, provided for any of the instructional areas to adjust light levels to suit media use requirements dictated by the different media formats and instructional activities.

2. While there were isolated cases of group areas provided with darkening facilities, no university was pursuing a policy of providing such facilities on a campus wide basis across the different group areas.

3. No Nigerian university had rear projection facilities in any of the instructional areas.

4. There were front projection facilities in all the universities that had media services. The facilities were, however, generally portable. Of those universities with permanently fixed front projection screens only 20 percent or one university reported having more than one permanently fixed front projection screen.

5. There were television monitors available in most of the universities; however, only one university or 11 percent of Nigerian universities with documented media facilities was pursuing a policy of providing such monitors in lecture theatres.

In the three selected American institutions, two or 66.7 percent of the universities reported having individual viewing and listening areas. These areas had carrels which were provided with individual headsets, viewing consoles and individual lighting at each station. The carrels were also treated with noise reduction materials. One of the univer-

sities had a sophisticated dial access system made up of 50 dial access carrels. The system had video monitors and provided audio and video programs. From a numbered coding of programs, the user could dial for the required program which was automatically played back from a master video or audio tape recording. The control room had capabilities for visual and auditory monitoring or talk back for each carrel or for all of the carrels simultaneously. There were also small listening and viewing rooms in which students could view prerecorded videotapes that were not on the dial access system, thus allowing greater flexibility and a wider selection for the individual student. All the universities had facilities for individual viewing of videotapes and movie films.

Data regarding small to large group areas for instructional purposes indicated that all of the American universities had such areas. All of these group areas had facilities for front projection and most of the areas had fixed front projection screens. There were rear projection facilities reported available in small, medium and large group instructional areas. Data on front projection screens indicate that in the American universities between 60 percent and 70 percent of all front projection screens available were permanently fixed. In the other media use elements the areas

were provided with light dimmers and darkening facilities and had noise reduction treatment that included acoustic tiles on ceilings and carpeting in some of the areas. Large group areas and auditoriums had sloped floors and fixed front projection booths. They also had public address systems and had light and multi-media control devices at the podium. Thus the group areas had been designed and properly fitted out for effective media use across group areas and to cover a wide range of media formats. The fixed front projection screens ensured the proper placement of the screens in terms of size and positioning, and ensured their suitability for each group area. This meant that the size of the screen was suitable for the viewing area of the instructional space in each case and all this ensured that at all times the screen was suitably placed for use of all projected media. Flexibility in projection was increased by the availability of rear projection facilities. Light dimmers allowed the proper setting of light levels to suit different media format or instructional activity requirements. In the large group areas, sloped floors ensured good sight lines and public address systems ensured the proper distribution of the teacher's voice or of the audio track in media assisted instruction. The control of lighting and the media from the podium afforded the teacher complete

control and the integration of the media in instruction.

Media Hardware

Educational media units stock hardware and media equipment which are used for playback purposes, that is, to present material already recorded in particular media formats or to multiply existing software in some formats. To enrich the instructional program, media units acquire hardware to cover as wide a range of media software formats as possible and in sufficient quantities for the needs of the instructional programs. This section was intended to discover the hardware holdings available to support instruction in Nigerian universities. There were no data available in four universities. In three of these the media units were starting to take delivery of hardware already ordered, and in the fourth university, there were changes being made in the administration of the media unit. The data in this section were treated in numerical quantity to indicate stocks available in each university. To afford some form of evaluation in terms of the use of those stocks in instruction, it was necessary to convert the raw numeral data into some other form of data. Since there also was a need to compare the Nigerian situation with the American situation, it was necessary to find the denominator that would

apply within Nigerian universities as well as between Nigerian and American universities.

Student population was used and the numerical data of hardware stocks were converted into ratios of hardware items in each hardware format that was available to one thousand students. This was intended to remove any disadvantage to universities with lower student populations, but which in terms of equipment available to the student population may be in advance of the larger universities and vice versa. It was also intended to indicate the highest standards across all the universities in terms of media: population ratios for each média format as an indication of what is currently the highest available standard especially in American universities. The best or highest standard was indicated by the lowest number of students per one item of hardware in each format, and the lowest standard was indicated by a high number of students per item. Thus the lower the student ratio was to each item the better would the situation be for instruction. Table 8 indicates holdings of hardware in Nigerian universities to support instruction. One university or 7.8 percent of all the Nigerian universities had not acquired any hardware to support instruction. No computers were available for classroom instruction in any of the universities.

Table 8

Hardware Stocks in Nigerian Universities

Hardware	1	2	3	5	6	8	10	11	12	Total	Mean (N=9)
Still Cameras	7	1	9	10	3	0	21	9	10	70	7.8
Camera Lenses	7	0	6	4	0	0	8	11	8	44	4.9
8MM Cameras	0	0	1	0	0	0	1	1	0	3	0.3
16MM Cameras	0	0	2	1	0	0	2	1	0	6	0.7
8MM Projectors	5	0	4	3	0	1	3	2	1	19	2.1
16MM Projectors	8	1	14	13	3	1	10	5	3	58	6.4
Slide Projectors	14	2	35	19	3	2	11	7	4	97	10.8
F/Strip Projectors	10	0	10	9	0	2	11	2	0	44	4.9
Overhead Projectors	19	0	22	16	4	3	13	4	0	81	9.0
Opaque Projectors	6	4	7	3	0	0	13	0	1	34	3.8
M/Image Programers	1	0	1	3	0	1	1	1	0	8	0.9
Record Players	7	0	5	3	1	1	5	3	0	25	2.8
Cartridge Players	0	0	0	0	0	0	0	2	0	2	0.2
Reel-Reel Recorders	15	0	3	3	2	0	29	6	2	60	6.7
Cassette Recorders	17	0	31	22	5	5	31	5	5	121	13.4
Cassette Duplication	1	0	2	2	0	0	2	1	0	8	0.9
Zerox Copiers	0	0	1	1	2	0	4	2	0	10	1.1
Thermal Copiers	0	1	2	2	2	1	1	1	0	10	1.1
Front Projection Screens	4	0	9	9	2	2	12	6	1	45	5.0
P.A. Systems	2	0	6	4	4	3	14	4	1	38	4.2
Computers	0	0	0	0	0	0	0	0	0	0	0.0
F/Strip Viewers	6	0	0	0	0	0	0	0	0	6	0.7
Slide Viewers	7	0	0	0	0	0	0	0	0	7	0.8
Microfiche Readers	1	0	19	0	0	0	0	0	0	20	2.2

(continued)

Table 8 (continued)

Hardware	1	2	3	5	6	8	10	11	12	Total	Mean (N=9)
Microfilm Readers	5	0	14	5	0	0	9	0	0	33	3.7
Microcard Readers	0	0	2	0	0	0	0	8	0	10	1.1
Microfilm Makers	0	0	1	1	0	0	0	0	0	2	0.2
Transparency Copiers	0	0	1	0	0	0	4	0	0	5	0.6
Editing Machines	0	0	2	0	0	0	0	0	0	2	0.2
Photomodifying Machines	1	0	1	2	0	0	1	0	0	5	0.6

Nigerian Universities
1. Ahmadu Bello University
2. University of Jos (Educational Technology Unit only)
3. University of Ibadan
4. University of Maiduguri (No hardware available)
5. University of Ife
6. Bayero University Kano
7. University of Ilorin (No figures available)
8. University of Calabar (Educational Technology Unit only)
9. University of Port Harcourt (No figures available)
10. University of Lagos
11. University of Nigeria
12. University of Benin
13. University of Sokoto (No figures available)

Table 9 shows those media hardware formats which had the largest total stocks across all the universities. The data indicate that the stocks of hardware were not evenly spread over the universities where media were available. Hardware holdings, in terms of the number of items in each media format, were concentrated in four universities or 44 percent of Nigerian universities that had hardware stocks. Of the total 121 cassette recorders in stock, 101 of them or 83.5 percent were located in only four universities. In the slide projector holdings, 68 projectors or 70.1 percent of the total stock of 97 pieces were to be found in only three or 33.3 percent of the universities.

Table 10 indicates those hardware most widely stocked among all universities with media. In all (100%) of the Nigerian universities, 16MM movie projectors were available. Still cameras, cassette recorders, front projection screens and public address systems were to be found in 90 percent of the universities. Overhead projectors, record players and reel-reel tape recorders were available in 80 percent of the universities. The data indicate that the front projection system made up of movie, slide and overhead projection formats was the most generally utilized in classroom instruction. As research in projection systems has indi-

Table 9

Hardware Formats With Largest Stocks

in Rank Order

Hardware	Pieces
Cassette Tape Recorders	121
Slide Projectors	97
Overhead Projectors	81
Still Cameras	70
Reel-reel Tape Recorders	60
16MM Movie Projectors	58
Projection Screens	45
Filmstrip Projectors	44
Public Address Systems	38
Opaque Projectors	34
Record Players	25
8MM Movie Projectors	19

Table 10

Hardware Most Widely Stocked Across Universities

100%	90%	80%
16MM Projectors	Still Cameras	Overhead Projectors
Slide Projectors	Cassette Recorders	Record Players
	Front Projection Screens	Reel-reel Recorders
	Public Address Systems	

cated, front projection is the most easily affected by uncontrolled lighting and therefore requires the most careful attention especially in this regard. In Nigeria, there is bright sunshine all year round, but as the data have already indicated, no attention has been paid to the proper

control of light in the instructional areas.

Analysis by Student Population

Analysis of hardware stocks using a unit of 1,000 students shows a changed picture in terms of the status of the universities. Large stocks of hardware did not necessarily mean better standing in student:hardware ratios. One of the factors that affected the situation was related to location of universities and their campuses. Student enrollment figures normally indicate total enrollment in each Nigerian university including all Faculties, Institutes and Centres that may be physically situated away from the main campus. This was the case in Ahmadu Bello University, University of Ibadan and University of Nigeria at Nsukka. These units would usually stock some items of hardware. The figures for Lagos University underscore this situation. Data regarding hardware stocks in Lagos University were compiled in the 1977/78 session. They were the result of a Master's research study that was carried out by the Director of the Educational Technology Centre and included stocks held in all units of the university including those units that were situated away from the main campus. Although they had been compiled four years earlier, the figures show higher hardware stocks across the

media formats than in the other universities. This would suggest that there were probably stocks available that the media directors and specialists did not know existed. It would also tend to suggest that stocks of hardware were probably higher, and much more digging or searching in the closets would be necessary to locate all hardware stocks.

Table 11 shows the distribution of hardware stocks by population in Nigerian universities. Where data are presented in actual number of student ratios in this section, those numbers have been rounded off to the nearest 50 or 100 students. The data indicate that of the three Nigerian universities which showed better standing in terms of larger stocks of hardware most of them show a comparatively poorer standing in the evaluation by population. This may be due to the problem discussed above, especially because these universities had the highest student populations with some units located away from the main campuses. The data indicate that among the media hardware formats, those with the best item:student ratios or those where one item of hardware was available for not more than 500 students included (per 1,000 students):

Slide Projectors	3.9
Cassette Recorders	3.9
Reel-reel Recorders	3.6
Still Cameras	2.6

Table 11

Distribution of Hardware Per 1,000 Users In the

Nigerian Universities With Hardware Stocks

Hardware	Universities									Highest Ratio
	1	2*	3	5	6	8*	10	11	12	
Still Cameras	0.4	0.3	1.0	1.0	1.0	0	2.6	1.1	2.0	2.6
Camera Lenses	0.4	0	0.7	0.4	0	0	1.0	1.4	1.6	1.6
8MM Cameras	0.0	0	0.1	0.0	0	0	0.1	0.1	0	0.1
16MM Cameras	0.0	0	0.2	0.1	0	0	0.3	0.1	0	0.3
8MM Projectors	0.3	0	0.4	0.3	0	0.4	0.4	0.3	0.2	0.4
16MM Projectors	0.5	0.3	1.6	1.3	1.0	0.4	1.3	0.6	0.6	1.6
Slide Projectors	0.9	0.7	3.9	1.9	1.0	1.3	1.4	0.9	0.8	3.9
Filmstrip Projectors	0.6	0	1.1	0.9	1.3	1.3	1.4	0.3	0	1.4
Overhead Projectors	1.2	0	2.4	1.6	0	2.0	1.6	0.5	0	2.4
Opaque Projectors	0.4	1.3	0.4	0.3	0	0	1.6	0	0.2	1.6
Multi-Image Programers	0.1	0	0.1	0.3	0	0.4	0.1	0.1	0	0.4
Record Players	0.4	0	0.6	0.3	0.3	0.4	0.6	0.4	0	0.6
Cartridge Players	0.0	0	0.0	0.0	0	0	0	0.3	0	0.3
Reel-reel Recorders	0.9	0	0.3	0.3	0.7	0	3.6	0.8	0.4	3.6
Cassette Recorders	1.1	0	3.4	2.2	1.7	3.3	3.9	0.6	1.0	3.9
Cassette Duplication	0.1	0	0.2	0.2	0	0	0.3	0.1	0	0.3
Xerox Copiers	0.0	0	0.1	0.1	0.7	0	0.5	0.3	0	0.7
Thermal Copiers	0.0	0.3	0.2	0.2	0.7	0.4	0.1	0.1	0	0.7
Front Projection Screens	0.3	0	1.0	0.9	0.7	1.3	1.5	0.8	0.2	1.5
P.A. Systems	0.1	0	0.7	0.4	1.3	2.0	1.8	0.5	0.2	2.0
Computers	0.0	0	0.0	0.0	0	0	0	0	0	0.0
F/Strip Viewers	0.4	0	0.0	0.0	0	0	0	0	0	0.4
Slide Viewers	0.4	0	0.0	0.0	0	0	0	0	0	0.4

*Hardware Stocks for University-Wide Units only.

(continued)

Table 11--*continued*

Nigerian Universities	Population	Per Thousand Unit
1. Ahmadu Bello University	16,000	16
2. University of Jos	3,000	3
3. University of Ibadan	9,000	9
4. University of Maiduguri (No hardware available)		
5. University of Ife	10,000	10
6. Bayero University, Kano	3,000	3
7. University of Ilorin (No figures available)		
8. University of Calabar	2,500	2.5
9. University of Port Harcourt (No figures available)		
10. University of Lagos	8,000	8
11. University of Nigeria, Nsukka	8,000	8
12. University of Benin	5,000	5
13. University of Sokoto (No figures available)		
Total	64,500	

Overhead Projectors	2.4
P.A. Systems	2.0

Of the more widely used formats the data indicate that 16MM and opaque projectors had the best ratio of 1.6 or one projector per 600 students and projection screens, 1.5 or one projection screen per 650 students. The other hardware formats show very low item student ratios. Even these "best" ratios were very low when compared with the American universities.

The data on the selected American institutions indicate a difference in the organizational structure of media services. The small American institution had a centralized service unit that covered the whole university. All the equipment were centrally located and were distributed from the one location. The medium large and the large American universities, because of their size, had decentralized the location of media equipment. Equipment were located in depots on a regional or school basis to provide easy access to the equipment. The population of 19,577 for the medium-large university and 30,000 for the large university represents the population served by the media units and not the total population of these universities.

There were certain factors related to hardware stocks in the selected American institutions. It was indicated that

the public universities such as this small institution and the large university usually have more funding than the private universities. It was found, for example, that the small institution did not operate on a budget system in the purchase of equipment and materials. Requests were simply made for equipment and services which were then supplied. Nigerian universities are public schools since they are funded by the Nigerian government and it would have been expected that they would have funding for media services through higher budgetary allocations.

The medium-large university, which is a private institution, had more limitations in terms of finances available to media services. It therefore developed a labor-intensive approach in the provision of media services. The approach was that instead of simply building large stocks of hardware, more personnel were used. This allowed a much more effective use of equipment by ensuring that each piece of equipment was used as many times as the instructional schedule would allow. Thus, instead of using three 16MM movie projectors for three different classes in the day, one could be used as long as the classes fall at different times. This approach cut down on the raw numbers of hardware by placing emphasis on utilization.

Table 12 shows the distribution of hardware by population in the three selected American institutions. The data indicate that across all these universities the media formats with the best ratios or that had ratios better than 1:500 included, in rank order:

Front Projection Screens	18.6
Overhead Projectors	10.8
Cassette Recorders	8.6
Slide Projectors	7.5
16MM Projectors	5.0
Filmstrip Projectors	4.3
Record Players	2.9
Xerox Type Copiers	2.9

These hardware ratios were much higher than those to be found in any of the Nigerian universities. Seventy-five percent or six of these formats had higher ratios than the best ratios in Nigerian universities. Even more significant was the relatedness between those hardware formats with the best ratios. The top six formats with a range of between 1:250 and 1:50 were those formats used in classroom instruction and they clearly indicate emphasis on the projection system. The emphasis was evident in all these universities across the projection formats. Relatedness was also evident in the high ratio of front projection screens, the low ratio of 1.3 in the large university being of portable screens only. It was necessary to have this high ratio of projection screens to complement the projection formats, overhead, slide, 16MM

Table 12

Distribution of Hardware Per 1,000 Users in the Three Selected American Universities

Hardware	Universities			Highest Ratio
	1	2	3	
Still Cameras	1.2	1.1	0.6	1.2
Camera Lenses	1.0	1.8	0.9	1.8
8MM Cameras	0.2	0.3	0.3	0.3
16MM Cameras	0.4	0	0	0.4
8MM Projectors	0.3	0.6	0.9	0.9
16MM Projectors	5.0	3.3	3.6	5.0
Slide Projectors	7.5	6.6	3.6	7.5
Filmstrip Projectors	0.6	0.4	4.3	4.3
Overhead Projectors	10.8	2.9	4.3	10.8
Opaque Projectors	0.3	0.4	0.7	0.7
Multi-Image Programers	0.4	0.8	0	0.8
Record Players	0.7	0.4	2.9	2.9
Cartridge Players	0.0	0	0.1	0.1
Reel-reel Recorders	0.8	0.8	1.4	1.4
Cassette Recorders	0.7	2.3	8.6	8.6
Cassette Duplications	0	0	0.6	0.6
Xerox Type Copiers	0.1	0	2.9	2.9
Thermal Copiers	0.3	0.3	1.7	1.7
Front Projection Screens	1.3	7.0	18.6	18.6
P.A. Systems	0.3	0.6	1.4	1.4
Computers	0	0.5	0	0.5

American Universities	Population	Per Thousand Unit
1. Indiana University, Bloomington (Main Media Unit)	30,000	30
2. Boston University (University Media Services)	19,577	19.5
3. Bridgewater State College	7,331	7

movie and filmstrip, which also show high hardware ratios.

There was not such a relatedness in the hardware formats with the higher ratios in Nigerian universities. For actual media-aided instruction, only two projection formats were in the higher hardware to student ratios. These were slide and overhead projectors which had ratios of 1:250 and 1:400 respectively. The ratios of projection screens did not complement even this limited range of projection formats. Only three Nigerian universities showed ratios better than one projection screen to 1,000 students (1.3, 1.5 and 1.5). This would indicate either a lack of balance in projection systems or that the actual utilization of the projection systems in classroom instruction was low. Data on hardware ratios, projection screen ratios and on media use elements in instructional spaces all tend to indicate a low utilization of the projection system in classroom instruction in Nigerian universities. Data do indicate that elsewhere the projection system is the most widely utilized in media-aided instruction.

The universities were categorized into three groups for the purpose of comparison within the groupings. The groupings were made according to population and they were termed Small, Medium-Large and Large. Since the sizes of

universities differed, Nigerian universities being generally smaller, the definition of size in both university systems was adjusted accordingly. In the Nigerian system, Small referred to a university with a student population of 5,000 or less, Medium-Large referred to a student population of less than 10,000 and Large referred to a student population of 10,000 or more. In the American university system, Small referred to a university with student population of 8,000 or less, Medium-Large referred to about 8,000-20,000 students, and Large referred to a population of more than 20,000 students.

Tables 13, 14, 15 indicate the comparison of the universities within the three groupings. In the small Nigerian universities, a large percentage of hardware formats were not in stock. Of all the formats, only seven out of 21 listed formats were to be found in at least 75 percent or three of the four small universities. In this sense, these were the universities with the narrowest range in media hardware formats. In terms of item:student ratios, their ratios were very low. The only media formats with a ratio equal to or better than 1:1,000 were cassette recorders (1.5 or one recorder per 600 students) and slide projectors (1.0 or one projector per 1,000 students). The small American institution

Table 13

Comparison of Hardware Stocks by Student Population Between Nigerian Universities and An American Institution: Small Universities

Hardware	Nigerian Universities	American University
Still Cameras	0.8	0.6
Camera Lenses	0.4	0.9
8MM Cameras	0.0	0.3
16MM Cameras	0.0	0.0
8MM Projectors	0.2	0.9
16MM Projectors	0.6	3.6
Slide Projectors	1.0	3.6
Filmstrip Projectors	0.7	4.3
Overhead Projectors	0.5	4.3
Opaque Projectors	0.4	0.7
Multi-Image Programers	0.1	0.0
Record Players	0.2	2.9
Cartridge Players	0.0	0.1
Reel-reel Recorders	0.3	1.4
Cassette Recorders	1.5	8.6
Cassette Duplication	0.0	0.6
Xerox Type Copiers	0.2	2.9
Thermal Copiers	0.4	1.7
Front Projection Screens	0.6	18.6
P.A. Systems	0.9	1.4
Computers	0.0	0.0

Table 14

Comparison of Hardware Stocks by Student Population Between Nigerian Universities and An American University: Medium-Large Universities

Hardware	Nigerian Universities	American University
Still Cameras	1.6	1.1
Camera Lenses	1.0	1.8
8MM Cameras	0.1	0.3
16MM Cameras	0.2	0
8MM Projectors	0.4	0.6
16MM Projectors	1.2	3.3
Slide Projectors	2.0	6.6
Filmstrip Projectors	0.9	0.4
Overhead Projectors	1.5	2.9
Opaque Projectors	0.7	0.4
Multi-Image Programers	0.1	0.8
Record Players	0.5	0.4
Cartridge Players	0.1	0
Reel-reel Recorders	1.6	0.8
Cassette Recorders	2.6	2.3
Cassette Duplication	0.2	0
Xerox Type Copiers	0.3	0
Thermal Copiers	0.2	0.3
Front Projection Screens	1.1	7.0
P.A. Systems	1.0	0.6
Computers	0.0	0.5

Table 15

Comparison of Hardware Stocks by Student Population Between Nigerian Universities and An American University: Large Universities

Hardware	Nigerian Universities	American University
Still Cameras	0.7	1.2
Camera Lenses	0.4	1.0
8MM Cameras	0.0	0.2
16MM Cameras	0.0	0.4
8MM Projectors	0.3	0.3
16MM Projectors	0.9	5.0
Slide Projectors	1.4	7.5
Filmstrip Projectors	0.8	0.6
Overhead Projectors	1.4	10.8
Opaque Projectors	0.4	0.3
Multi-Image Programers	0.2	0.4
Record Players	0.4	0.7
Cartridge Players	0.0	0.0
Reel-reel Recorders	0.6	0.8
Cassette Recorders	1.7	0.7
Cassette Duplication	0.1	0.0
Xerox Type Copiers	0.0	0.1
Thermal Copiers	0.1	0.3
Front Projection Screens	0.6	1.3*
P.A. Systems	0.3	0.1*
Computers	0.0	0.0

*Figures available for portable equipment only.

showed better ratios across the hardware formats. In the projection formats, the ratios ranged from 1:100 students to 1:300 in the projectors. The front projection screen showed a ratio of one screen to 50 students. In this American institution, eight media formats had one item:student ratios of 1:350 or better. Generally, the best ratios among all the selected American universities and the Nigerian universities were to be found in the small American institution. (see Table 13)

In the medium-large universities in Nigeria, data indicate that nine hardware formats had ratios of 1:1000 or better. Of these formats only cassette recorders and slide projectors indicate the better ratio of 1:400 and 1:500 students respectively. The best ratios among the Nigerian universities were to be found in this group. The medium-large American university had ratios better than 1:500 in five hardware formats and these were in the projection system. As has been pointed out elsewhere, this university had a labor-intensive approach that these ratios did not reveal. Their experience has, however, indicated that these ratios met their needs. Nigerian universities which are very low in hardware ratios may need to look at this approach as an alternative to the purchase of large stocks of hardware and equipment. (see Table 14)

Table 15 indicates that in the large universities in Nigeria, although they had almost all 21 hardware formats, the ratios were not any better than the ratios in small universities. Only three hardware formats had ratios better than one item per 1,000 students and they included cassette recorders (1.7), overhead projectors (1.4) and slide projectors (1.4). Overall, in the large American university, the items that showed any marked difference in terms of good ratios were overhead projectors (10.8 or 1:100), slide projectors (7.5 or 1:130) and 16MM projectors (5.0 or 1:200). Cassette recorders in the large Nigerian universities showed a better ratio than in the similar American university.

Table 16 summarizes hardware:student ratios and indicates the best ratios in each hardware format across all the universities. Generally, in the Nigerian universities item: student ratios were very low across all hardware formats. Only six formats out of the 21 listed had ratios as good as one item per 500 students in any Nigerian university. All of the universities, across all hardware formats, were well below this ratio. This would indicate inadequacy of the hardware to make impact on instruction university wide.

In the formats generally used in classroom instruction, the target to aim for in the Nigerian universities must

Table 16

Best Hardware : Student Ratios Across All the Universities

Hardware	Nigerian Universities	Selected American Universities
Still Cameras	2.6	1.2
Camera Lenses	1.6	1.8
8MM Cameras	0.1	0.3
16MM Cameras	0.3	0.4
8MM Projectors	0.4	0.9
16MM Projectors	1.6	5.0
Slide Projectors	3.9	7.5
Filmstrip Projectors	1.4	4.3
Overhead Projectors	2.4	10.8
Opaque Projectors	1.6	0.7
Multi-Image Programers	0.4	0.8
Record Players	0.6	2.9
Cartridge Players	0.3	0.1
Reel-reel Recorders	3.6	1.4
Cassette Recorders	3.9	8.6
Cassette Duplication	0.3	0.6
Xerox Type Copiers	0.7	2.9
Thermal Copiers	0.7	1.7
Front Projection Screens	1.5	18.6
P.A. Systems	2.0	1.4
Computers	0.0	0.5

be of providing hardware to reach a ratio of one item to 200 students (1:200) or better. There must also be a balancing between the formats, especially in providing projection screens to supplement the front projection system.

Media Software

Software holdings are critical for classroom instruction since the software provides the instructional support in terms of the information they carry to supplement the instructor's material. In this regard, media units place great emphasis on building software collections of as wide a media format range as possible. A wide range means that there is choice in software format to fit different instructional needs. The hardware holdings and the software collections have to be complementary to more effectively enrich instruction.

This section was aimed at determining the media software collections in terms of their number and their spread across media formats. It was also aimed at determining whether or not the software collections complemented the hardware holdings. Among the software formats searched for were:

Movie Films	Records
Filmstrips	Audio Recordings
Slides	Microfilms
Flat Visuals	Microfiche
Transparencies	Videotapes

The data indicate that, generally, except for the libraries, inadequate records of software collections were being kept. Except in the libraries and in media units in Teaching Hospital Units where originals were kept for record purposes, slides were made on request and were retained by the instructor who requested them. Flat visuals and transparencies were also not centrally stored but were used in the same way by instructors as slides. There were inadequate data in terms of actual amounts of software in the collections of media units. Software collections have, therefore, been presented in terms of the percentage of units that had each particular software format in their software collection. (See Table 17) This was intended to show the range across formats of software collections. Data indicate a low spread and range of software formats across universities.

Movie films were to be found in 84.6 percent of all University-Wide and Teaching Hospital Units with software collections. Slides were to be found in 76.9 percent, film-

Table 17

Availability of Software Collections

Across Universities in Rank Order

by Percentage

Collections	Percentage
Films	84.6%
Slides	76.9
Filmstrips	69.2
Videotapes	61.5
Records	53.8
Audio Recordings	46.1
Microfilms	46.1
Microfiche	38.5

strips in 69.2 percent, videotapes in 61.5 percent and records in 53.8 percent of the units. These were the more generally available software formats in Nigerian universities. The software complemented the hardware stock most widely available as shown in Table 10. However, only films and slides show a substantial spread across media units.

As was the case with the hardware, software collections were concentrated in about 30 percent of the universities. They had collections each of over 1,000 films and over 1,000 filmstrips as compared to holdings of under 150 films and filmstrips by each of the other universities. Microfilm and microfiche collections were concentrated in 22 percent or two of the universities. Concentration was in the older universities which had built up the collections over the years.

Mode of Acquisition of Software

This section sought to establish the modes of acquisition of software by Nigerian universities. Four elements used were: Purchase, Loan, In-House Production, and Other.

Fifty-five percent of the media units reported that they purchased most of their software while 45 percent reported that they produced their software in-house. The software for which there were production facilities formed only 30 percent of all software formats. These included slides, graphics and transparencies, and videotapes. The remaining 70 percent of software formats were of those whose collections had to be purchased since there were no production facilities or collections elswewhere where they could be acquired on loan. Of software produced in-house, only slides were available in large numbers. The figures regarding in-house production were affected by the fact that there was concentration of in-house production in slides and graphics, and transparencies. The data indicate that reported in-house production figures referred more to those areas of concentration rather than to the overall mode of acquisition of all software formats.

In the three selected American universities, data on software collections were also inadequate. While there was indication of the availability of software in the different formats, there were incomplete figures provided. On the question regarding the mode of acquisition of software, two of the universities indicated that they acquired most of their software by purchase (95% and 90%). The

third university indicated that 95 percent of its software was produced in-house. As data regarding hardware stocks and the availability of Specialized/Production facilities has indicated, the selected American universities did not have movie film production facilities. Movie films were generally purchased since the expertise and the cost of production equipment made their production fall beyond the capabilities of institutions. In any case, there were professional commercial houses that produced top quality movie films. The high in-house production figure shown in one of the universities would therefore have referred to software formats other than film and film strips. Movie film collections for which there were figures showed a range of between 1,000 films in the small university to 50,000 films in the large university. The purchase of software, generally, and of movie films, particularly, is to be expected to be high in developing units which are in the early stages in the process of building up software collections.

Specialized/Production Facilities

Specialized/Production facilities are a necessary part of media units. They provide support and cater to the peculiar needs or problems of the instructional system they serve. Apart from these functions the facilities can be

used to produce instructional models and for record keeping. The following were the facilities searched for in this section:

Television	Darkroom
Film	Graphics and Transparency
Radio	Language Laboratory
Audio Recording	Maintenance

The section was intended to discover those facilities that were available in Nigerian universities. Although the search covered mainly the University-Wide Units and the Teaching Hospital Units, it was extended to determine if the facilities existed anywhere else in each university. The extension of the search was, however, restricted mainly to this aspect.

The second aspect of the search was intended to determine the stage of development of each facility. To this end, three scenarios were employed that described three stages of development for each facility. As a validating instrument, a checklist of equipment usually to be found in all three stages in each facility was employed. A matching of the choice by the respondent, of the stage of development with the equipment the respondent checked as being available, indicated more accurately the stage of

development of each facility.

The third aspect in this section was that of determining the level of utilization of each facility. Regardless of the stage of development, this aspect sought to discover the extent of the use of each facility for production purposes.

Tables 18 and 19 indicate the distribution of Specialized/Production facilities in University-Wide and Teaching Hospital Units. Table 20 indicates the percentage distribution of these facilities in both University-Wide and Teaching Hospital Units.

Table 18

Distribution of Specialized/Production Facilities

University-Wide Units

Facility	Universities *													
	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Television	0	1	1	0	1	0	0	0	0	1	1	0	0	5
Film	0	0	1	0	0	0	0	0	0	0	1	0	0	2
Radio	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Audio Recording	0	1	1	0	1	0	0	0	0	0	0	0	0	3
Darkroom	1	0	1	0	1	0	0	0	0	1	1	0	0	5
G/Transparency	1	1	1	0	1	0	0	0	0	1	1	0	0	6
Language Laboratory	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maintenance	1	1	1	0	1	1	0	0	0	1	1	0	0	7

* See page 61 for University code identification.

Table 19

Distribution of Specialized/Production Facilities

Teaching Hospital Units

Facility	Universities **													
	1	2	3	4	5	6*	7	8	9	10	11	12	13	Total
Television	0	1	1	0	1	0	0	1	0	1	1	0	1	7
Film	0	0	0	0	0	0	0	1	0	1	1	0	0	3
Radio	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Audio Recording	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Darkroom	1	1	1	0	1	0	0	1	0	1	1	1	1	9
G/Transparency	1	1	1	0	1	0	0	1	0	1	1	1	1	9
Language Laboratory	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maintenance	0	1	1	0	0	0	0	0	0	1	0	0	0	3

* No medical school available as yet.
** See page 61 for University code identification.

Table 20

Percentage Availability of Specialized/Production

Facilities in Nigerian Universities

Facility	University-Wide Units (N=13)	Teaching Hospital Units (N=12)
Television	38.5%	58.3%
Film	15.4	25.0
Radio	0.0	0.0
Audio Recording	23.0	8.3
Darkroom	38.5	75.0
G/Transparencies	46.0	75.0
Maintenance	53.8	25.0
Language Laboratories	0.0	0.0

Specialized/Production facilities were more widely spread in University-Wide Units in the sense that they were available in a larger number of these units across facilities. Teaching Hospital Units, however, had greater concentration in three specialized facilities, namely darkroom, graphics and transparency, and television. In University-Wide Units, the more widely spread facilities across universities were maintenance (53.8%), graphics and transparency (46.0%), darkroom (38.5%), and television (38.5%). Only maintenance facilities were available in up to half (50%) of all such units. In Teaching Hospital Units, the more widely spread facilities across universities were: darkroom (75%), graphics and transparency (75%) and television (58.3%). All the other facilities showed a low spread among Teaching Hospital Units. There were no radio facilities or language laboratories located in either the University-Wide or the Teaching Hospital Units.

The location of Specialized/Production facilities indicated the particular needs and preferences of the units. Maintenance ranked high (53.8%) in University-Wide Units because it was in those units that there were higher stocks of media hardware and a wider spread of specialized facilities. They also had more of the technician image. In

Teaching Hospital Units concentration was in those facilities that produced illustration material and that could be used to multiply material on special medical cases and for keeping records of such cases (darkroom, 75% and graphics and transparency, 75%). In addition to the above functions, television (58.3%) allowed live recording of procedures at operation theatres and of other procedures in the training of medical and paramedical personnel. Teaching Hospital Units were moving in the direction of establishing closed-circuit television systems that would link operation theatres directly with lecture theatres for live transmission of these procedures.

Table 21 shows those facilities with the highest percentage availability in both University-Wide and Teaching Hospital Units. Although there was greater concentration in percentage availability of facilities in Teaching Hospital Units, the more widely available facilities were the same in both units.

Table 22 indicates those Specialized/Production facilities that were to be found elsewhere in Nigerian universities. Television, film, radio and audio recording facilities were located in the Mass Communications Departments. Some television and film facilities were also too

Table 21

Specialized/Production Facilities More Widely Available in Media Units

Facility	University-Wide Units	Teaching Hospital Units
Graphics/ Transparencies	46.0%	75.0%
Darkroom	38.5	75.0
Television	38.5	58.3
Maintenance	53.8	25.0

Table 22

Specialized/Production Facilities Available in Other Faculties

Facility	Percentage
Television	46.2%
Film	38.5
Radio	7.7
Audio Recording	38.5
Language Laboratories	92.0

be found in Centres for African/Nigerian Cultural Studies and Agricultural Extension Services. Language Laboratories were to be found in the Language Departments of the Faculties of Art.

Interest was being shown in establishing radio facilities. In four or 30.8 percent of Nigerian universities, there was sufficient equipment available that is

basic to radio facilities and these included audio record/playback equipment and multi-track audio mixers. At least two or 15.4 percent of the universities had had extensive experience in radio broadcasting, having produced audio tapes on community related and correspondence programs that were broadcast by radio stations in their vicinity. Government regulations had placed restrictions on the establishment and operation of radio facilities. The radio facility in operation was restricted to a radius of less than three kilometers and was used to give training to students of radio rather than as a campus or community station. Of the universities with potentiality to establish radio facilities, 2 or 15.4 percent were reportedly in the process of preparing to apply for licenses to operate radio facilities.

Figure 2 shows a comparative distribution of specialized/Production facilities between University-Wide and Teaching Hospital Units. Table 23 shows the average distribution of the facilities in Nigerian universities.

In the three selected American universities, film facilities were not available in two of the media units and one of the units did not have a language laboratory. Also, radio facilities were available in all the univer-

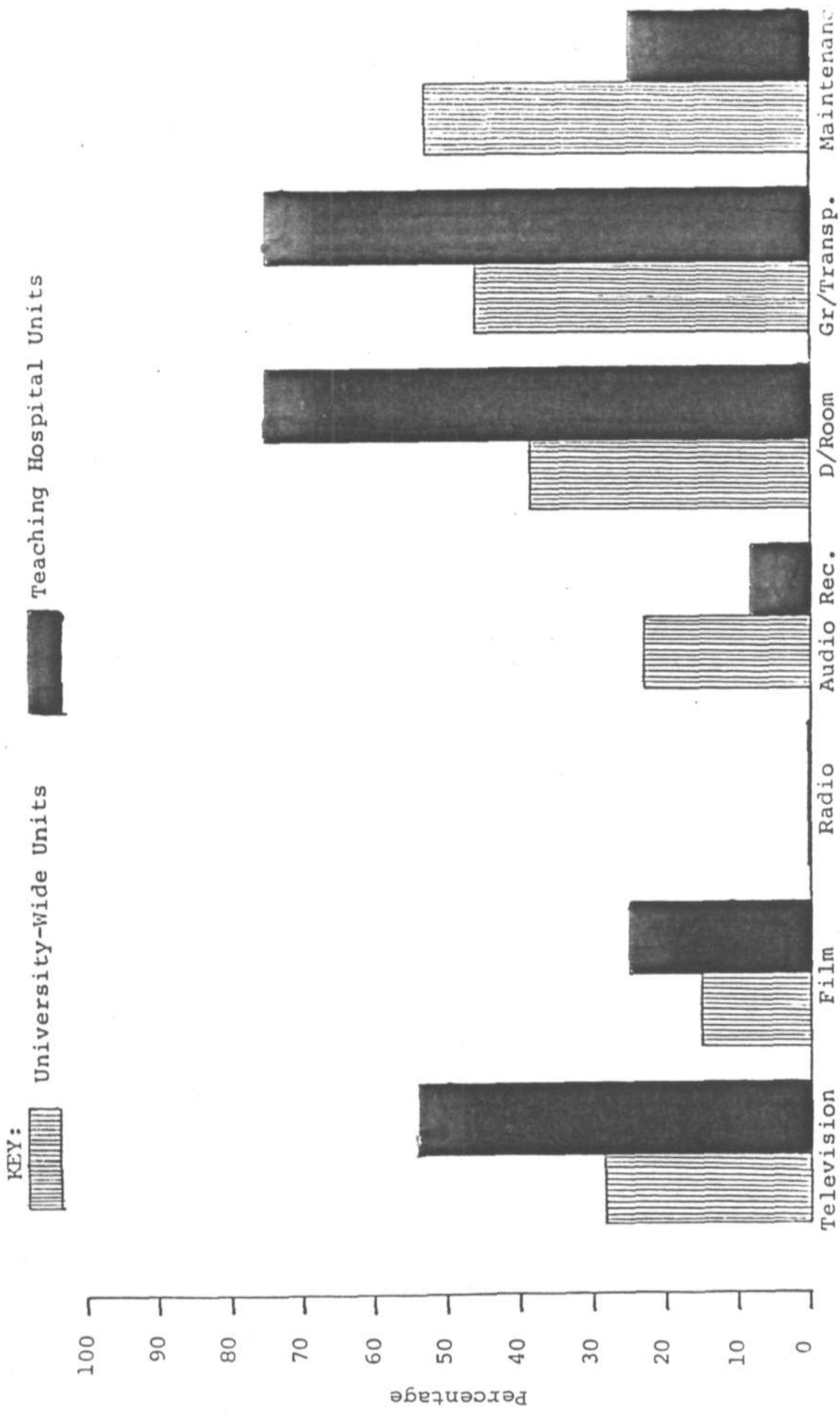


Figure 2. A Comparative Distribution of Specialized/Production Facilities, Showing Percentage of Availability at University-Wide and Teaching Hospital Units.

Table 23

Average Distribution of Specialized/Production Facilities in All Faculties of Nigerian Universities

(N=13)

Facility	Media Units	Other Faculties	Total	Mean
Television	12	6	18	1.4
Film	5	5	10	0.8
Radio	0	1	1	0.08
Audio Recording	4	5	9	0.7
Darkroom	14	0*	14	1.1
G/Transparency	15	0*	15	1.2
Language Laboratory	0	11	11	0.8
Maintenance	10	0*	10	0.8

*Facility not included in the search.

sities but they were located away from the media units. All the other facilities were to be found in the media units. Out of a possible 24 specialized facilities in the media units of the three universities, there was a total of 21 or 87.5 percent availability. This indicated a very high percentage availability of specialized facilities in the media units across these universities.

Stage of Development

This section sought a qualitative evaluation of the Specialized/Production facilities. To this end, scenarios

were used to describe each of three stages of development for each facility. In this section, Stage 1 represented the beginning stage and Stage 3 represented the top stage of development. The following were the scenarios that described the stages of development.

Television

Stage 1. The television facility consists of a portable camera and recording system (or several of such units) used for single-camera recording of lectures, experiments or demonstrations. The facility has an inventory of less than 25 individual pieces of equipment excluding microphones, cables, etc.

Stage 2. The television facility includes the first scenario as well as a distribution system that is centralized. This may be a studio or a particular space where recording takes place. With additional video monitors and recorders, the facility has an inventory of between 25 and 50 individual pieces of equipment that include studio lights.

Stage 3. The television facility includes the two previous scenarios and may have more than one studio. It has color and an inventory of more than 50 individual pieces of equipment that include telecine, light dimmers and a special effects console.

Film

Stage 1. The film facility has one or more 8MM film cameras with a room equipped to develop 8MM film.

Stage 2. The film facility has the above as well as the capability to shoot and develop 16MM film.

Stage 3. The film facility has all of the above as well as editing capability, including sound recording of both 8MM and 16MM film.

Radio Station

Stage 1. The radio facility has a single studio with at least one audio tape machine. It has some method of gathering and transmitting news and music.

Stage 2. The radio facility has multiple equipment such as audio machines and has multiple rooms that include a master control room and at least two studios. It may have facilities for newscasts and on-air interviews.

Stage 3. The radio facility includes both scenarios above as well as stereo production. It has additional rooms, additional pieces of equipment, multi-track audio equipment and a performance studio. It has news teletype and on-air telephone interviewing.

Audio Facility

Stage 1. The audio facility is equipped with portable audio recording/playback machines. It does not have a room specifically designed for audio recording.

Stage 2. The audio facility has a studio with stereo recording capability. There are additional equipment mainly for single track recording.

Stage 3. The audio facility has the above as well as multiple equipment with multi-track production capability of between 4-16 tracks.

Darkroom Facility

Stage 1. The darkroom facility is a temporary darkroom equipped for developing, printing and enlarging black and white still photographs only.

Stage 2. The darkroom facility has a permanent darkroom in addition to the above. It has water temperature control, controlled ventilation and professional darkroom equipment.

Stage 3. The darkroom facility has the above as well as color developing and printing. It also has slide sorting and mounting capability.

Graphics/Transparency Production

Stage 1. The graphics/transparency facility has a copy stand, a dry mount press and a paper cutter and can produce simple visuals such as graphs, as well as simple transparencies.

Stage 2. The facility has the above, one or more drawing tables, a lettering machine, a small diazo machine and a laminator.

Stage 3. It has the above as well as a photo modifying machine, a repro master and a large diazo machine.

Maintenance Facility

Stage 1. The maintenance facility carries out preventative maintenance such as checking and cleaning of equipment. It has tools only for those tasks.

Stage 2. The maintenance facility has a repair shop and carries out cleaning and minor repairs to media equipment. It has tools and test equipment for these tasks.

Stage 3. The maintenance facility has a shop fully equipped for testing and repairing all media equipment. It can carry out major overhaul of all such equipment.

Language Laboratory

Stage 1. The facility is not housed in a space specifically designed as a language laboratory. It has "listen" and "respond" capability only.

Stage 2. The facility is housed in a space designed as a language laboratory or modified for the purpose. It has "record" capability but may not have booths specially designed for a language laboratory.

Stage 3. The language laboratory has the capabilities above and is housed in a space specifically designed as a language laboratory. It has a master control console with such functions as simultaneous individual, group or section monitoring and control over all the functions in the facility.

Tables 24 and 25 indicate the percentage stage of development of Specialized/Production facilities in both the University-Wide and the Teaching Hospital Units. The data indicate that University-Wide Units had three or 60 percent of their television facilities in the first stage of development. Only one television facility in these units was in the top stage of development. Teaching Hospital Units had five or 71.4 percent of their television facilities in the second stage of development. These units also had only one television facility in the top stage of development. The data indicate that where television facilities existed in both units within the same university, the television facility in the Teaching Hospital was more developed.

Sixty-seven percent of the audio recording facilities in University-Wide Units were in the second stage of development and the other facility was in the third stage, while the only facility in Teaching Hospital Units was in the first stage.

Table 24

Percentage Stage of Development Within

Each Specialized Facility

University-Wide Units

Facility	Stage of Development 1	2	3	Total
Television	60.0%	20.0%	20.0%	100%
Film	50.0	50.0	0.0	100
Radio	0.0	0.0	0.0	0
Audio Recording	0.0	67.0	33.0	100
Darkroom	40.0	40.0	20.0	100
Graphics/ Transparencies	49.9	33.4	16.7	100
Maintenance	14.3	57.1	28.6	100

Table 25

Percentage Stage of Development Within

Each Specialized Facility

Teaching Hospital Units

Facility	Stage of Development 1	2	3	Total
Television	14.3%	71.4%	14.3%	100%
Film	50.0	50.0	0.0	100
Radio	0.0	0.0	0.0	0
Audio Recording	100.0	0.0	0.0	100
Darkroom	11.1	33.3	55.6	100
Graphics/ Transparencies	11.1	33.3	55.6	100
Maintenance	33.3	66.7	0.0	100

Darkroom facilities were more developed in the Teaching Hospital Units than in University-Wide Units even when they were located within the same university. Fifty-five percent of darkroom facilities (or 5) were in the third stage of development and only one was in the first stage in Teaching Hospital Units, while in University-Wide Units only one facility was in the third stage of development. The same situation existed in graphics/transparency facilities. Teaching Hospital Units had five or 55.6 percent of their facilities in the third stage of development as compared to one or 16.7 percent in University-Wide Units, which also had three or 49.9 percent of the facilities in the first stage of development. In maintenance, University-Wide Units had more developed facilities. Two of their facilities were in the third stage of development, while Teaching Hospital Units had none. Most of the maintenance facilities in both units were in the second stage of development.

Table 26 shows the average percentage stage of development of Specialized/Production facilities in Nigerian universities. As the data indicate, darkroom and graphics/transparency had a greater percentage of facilities in the third stage of development, but this was only very slight.

Table 26

Average Percentage Stage of Development of Specialized Facilities in Media Units

Facility	Stage of Development 1	2	3	Total
Television	37.1%	45.7%	17.2%	100%
Film	50.0	50.0	0.0	100
Radio	0.0	0.0	0.0	0
Audio Recording	50.0	33.5	16.5	100
Darkroom	25.6	36.6	37.8	100
Graphics/ Transparencies	30.5	33.4	36.1	100
Maintenance	23.8	61.9	14.3	100

In terms of overall development, Specialized/Production facilities in all formats were in the second stage of development with a range of between 33 percent to 61.9 percent of all facilities falling into this stage of development. However, no facility except film was clearly in the low stage of development. Considering that film is not considered viable as a Specialized/Production facility in instruction, the data suggest a pattern of development away from the first stage.

Specialized/Production facilities located in other faculties (television, film, audio recording) were generally more developed than those in the media units. One of the main problems that was to be found in most of the facil-

ities, especially in University-Wide Units, was that of physical facilities. Most of their facilities, television, audio recording, darkroom and graphics/transparencies, were housed in temporary structures. Teaching Hospital Units had better ratings generally because they had paid more attention to providing suitable buildings even where such buildings were considered temporary. Six of these units or 67 percent of Teaching Hospital Units had recently constructed or remodeled buildings to house media facilities and some of the buildings had been designed by the media directors/specialists themselves. This would suggest that ratings in terms of stage of development would greatly improve if University-Wide Units acquired suitable physical facilities in which to house Specialized/Production facilities as the Teaching Hospital Units were doing.

The language laboratory facility was the most widely available of all specialized facilities. It was reported available in 12 or 92 percent of Nigerian universities but was located in Language Departments in the Faculties of Art. Generally, however, language laboratories were aged. They were using the reel-reel tape format which has been discontinued and phased out in universities elsewhere, to be replaced by the cassette tape format. There was difficulty

in obtaining spare parts even from the manufacturers, thus many language laboratories had fallen into disuse. Generally, although the facilities were housed in temporary buildings, efforts had been made to provide sophistication in functions as well as pleasant environments. Acoustic treatment on floors, walls and ceilings had not been provided in most of the facilities but air-conditioning units and blinds had been provided for all of them. Lighting was fluorescent and had no dimmer devices but carrels were specifically designed for language laboratories.

Level of Utilization

Evaluation of the level of utilization of television, radio and darkroom facilities was based on the percentage use of the facilities per school day. The working day was divided into periods representing 25 percent, 50 percent and 75 percent of the working day. Respondents were asked to rate their use of each specialized facility in terms of whether it was used for less than 25 percent, for 50 percent or for above 75 percent of the normal school day. Graphics/transparency and audio recording were evaluated on the number of items produced over a period of one month and film and video production were evaluated on the number of items produced in the six months previous to the survey.

The first group had three levels: 0-10 items; 10-50 items; and over 50 items, while the second group comprising film and video production was left as an open question. Tables 27 and 28 indicate percentage levels of utilization of specialized facilities in both University-Wide and Teaching Hospital Units.

In television, only one University-Wide Unit reported using its facility for 75 percent of the school day as compared to three (or 43%) Teaching Hospital Units. Three television facilities in University-Wide Units were used for less than 25 percent of the school day, the same number as in Teaching Hospital Units. The largest number of videotapes reported produced in any television facility over a period of six months was ten. Generally, television facilities were more utilized in Teaching Hospital Units and three of the Hospital Units had produced large numbers of videotapes probably falling at certain peak production periods.

Teaching Hospital Units also showed higher levels of utilization of darkroom and graphics/transparency facilities although both facilities were the most highly utilized in both units. University-Wide Units had two (40%) darkroom facilities that had 75 percent usage per working

Table 27

Percentage Level of Utilization Within

Each Specialized Facility

University-Wide Units

Facility	Levels 75%	50%	25%	Total
Television	20.0%	20.0%	60.0%	100%
Film	0.0	0.0	100.0	100
Radio	0.0	0.0	0.0	0
Audio Recording	0.0	100.0	0.0	100
Darkroom	40.0	40.0	20.0	100
Graphics/ Transparencies	16.7	49.9	33.4	100
Maintenance*				

* This facility had been excluded from this question.

Table 28

Percentage Level of Utilization Within

Each Specialized Facility

Teaching Hospital Units

Facility	Levels 75%	50%	25%	Total
Television	43.0%	14.0%	43.0%	100%
Film	0.0	0.0	100.0	100
Radio	0.0	0.0	0.0	0
Audio Recording	0.0	0.0	100.0	100
Darkroom	77.8	11.1	11.1	100
Graphics/ Transparencies	44.5	33.3	22.2	100
Maintenance*				

* This facility had been excluded from this question.

day as compared to seven (77.8%) in Teaching Hospital Units.

Table 29 shows the average percentage utilization of Specialized/Production facilities in Nigerian universities. The data indicate that, regardless of their levels of development, darkrooms (58.9%) were most generally utilized while film (100%) and television (51.5%) were clearly least utilized.

Table 29

Average Percentage Level of Utilization of Specialized Facilities in Media Units

Facility	Levels 75%	50%	25%	Total
Television	31.5%	17.0%	51.5%	100%
Film	0.0	0.0	100.0	100
Radio	0.0	0.0	0.0	0
Audio Recording	0.0	50.0	50.0	100
Darkroom	58.9	25.5	15.6	100
Graphics/ Transparencies	30.6	41.6	27.8	100
Maintenance*				

* This facility had been excluded from this question.

Stages of development in the three selected American universities were high relative to each university's needs in Specialized/Production facilities. In the large university, all the specialized facilities located in the media unit were in the third stage of development except for the

television facility which was in the second stage. There had not been the need to develop it further, as the data indicate, because there was a radio and television department which had a television studio. The large university had a portable television facility with an inventory of 32 pieces of equipment. The American university system allowed inter-departmental and inter-discipline registration which reduced the necessity for the same specialized facilities in each department or unit.

In the medium-large university, all the specialized facilities located in the media unit were in the third stage of development. The portable television equipment inventory was 49 pieces and the studio inventory was 120 pieces. This university had the highest all round development in facilities of the three selected universities. It was in the small university that there were some facilities in the first and second stages of development. Audio recording was in the first stage, while darkroom and graphics/transparency facilities were in the second stage of development. The television facility was in the third stage of development with an inventory of 32 pieces of portable equipment and 69 pieces of studio equipment. The maintenance and language laboratory facilities were in the

third stage of development.

Generally, while the establishment and the development of specialized facilities was related to felt needs the educational system in Nigerian universities tended to force the duplication of such facilities. Departments and units tended to develop facilities independently and without coordination with other departments and units with similar felt needs. This practice inhibited the development of specialized facilities; these small departments/ units did not have the capability in terms of finance and personnel to single-handedly develop the facilities.

Personnel

"To run media services efficiently, it is necessary that there are trained personnel in all media unit areas. Trained personnel determine not only the extent of use of media facilities but also the quality of service and of output". This section was aimed at establishing what trained personnel were available to operate Specialized/Production facilities. The personnel included television cameramen, cinematographers, graphic artists, electronic technicians and personnel of related specializations. The section also sought to establish the presence of media specialists and technicians.

Table 30 shows the number of trained personnel reported available in Specialized/Production facilities. Trained personnel were not reported and categorized by media specialization except in obvious cases as photographers. Trained personnel worked across media formats and specialization was not a clear cut term. The distinction made between media personnel did not follow the specialist/technician designation. The distinction was made by status following the accepted Nigerian university staff designations of 'Senior,' 'Intermediate' and 'Junior' staff. Personnel capable of performing particular functions were utilized, some of them being staff outside of the media units. Availability of trained personnel was reported in terms of total number for each media unit.

There were more trained personnel in Teaching Hospital Units. About 38 percent of Teaching Hospital Units had more trained personnel than the University-Wide Units in the same institution. The reverse was the case in only 15.4 percent in University-Wide Units. Generally media units indicated acute shortage of qualified personnel. Media directors had been doing on-the-job training of personnel but they had been losing such personnel to other institutions and to the private sector where service con-

Table 30

Distribution of Trained Personnel

University	University-Wide Units	Teaching Hospital Units	Total	Mean
1	7	3	10	5
2	2	8	10	5
3	9	17	26	13
4	0	0	0	0
5	11	2	13	6.5
6	1	*	1	1
7	**	**	0	0
8	0	1	1	0.5
9	0	**	0	0
10	12	13	25	12.5
11	6	6	12	6
12	2	4	6	3
13	0	**	0	0

* Not applicable.
** Figures not available.

ditions were more attractive. The loss of personnel they had spent time and money training had discouraged their continuation of the practice. Only one media unit indicated success with this kind of training program. The success was due to the fact that the unit was situated in a Teaching Hospital where there was more appreciation of the role of media personnel. The director was thus able to get such trained personnel promoted more easily than was the case in University-Wide media units. Media directors/specialists indicated that their services would greatly improve in scope and quality if they had more

trained personnel. Even if they did on-the-job training as a means of increasing the number of trained personnel, the number produced would be too little to cope with the demand for personnel. As a temporary measure, however, this appeared to be the only way at present of boosting the number of trained personnel. Media directors indicated that the main problem that affected the staffing situation was the service conditions for media personnel.

Courses Offered

In Educational Media Units, specialized facilities are used as production facilities to supplement collections necessary to support teaching. As important a function of these facilities is their use in the training of media specialists. This aspect of the training is in providing the necessary practical grounding in the media that would combine with the theoretical education aspect to produce media specialists as in the definition above. It would be thought that in a situation where there was a shortage of trained media personnel, this aspect of training would assume prominence. This section was aimed at establishing what training programs were available in Nigerian universities that aimed at producing such media personnel.

It was established that 30.8 percent of Nigerian

universities offered graduate courses in Educational Media, while 61.6 percent offered undergraduate courses. The course contents indicate that they were essentially academic courses offered at the faculties of education that fulfilled the theoretical aspects of educational media. There were no courses offered that gave practical grounding in the media in education, such as television or graphics production courses. The only effort in this regard was initiated by the Teaching Hospital Units when in 1979 the Biomedical Communications Department of the College of Medicine of University of Lagos proposed a comprehensive course in Biomedical Communication. There have generally not been concerted efforts, as that proposal had attempted to do, to organize such courses at the national level.

The problem was further compounded by the educational system in operation in Nigerian universities. While qualified staff in the more practical aspects of educational media and the relevant facilities were to be found in educational media units, these units could not offer courses for the purpose of awarding degrees or certificates. Degrees were awarded only by the faculties of education which did not have the staff and the facilities, especially where the media units were centralized and independent.

The training of media personnel in this situation demanded very close cooperation between the faculties of education and the media units.

Cooperation was difficult because of differences of orientation between the theoretical/generalist approach by the faculties and the practical/specialist approach by the media units. In an educational system that had a generally more theoretical approach to instruction, media units were seen as service/technical units rather than as units with instructional potential.

Of the five more developed University-Wide Units, 20 percent were centralized but were under the administrative control of an Institute of Education. Another 20 percent had a Head of Department that played a dual role. Organized as a department, matters related to the educational media unit went directly from the Head of Department to the Vice Chancellor. Located in the Faculty of Education as the Department was, instructional matters were under the control of the Dean of Education. Thus, both the theoretical and practical aspects were combined and placed under the same organizational control. It was only in this 40 percent of Nigerian universities that there was practical instruction done in some basic skills in edu-

cational media.

Nigerian universities, including the 40 percent above, were working towards keeping media units centralized and independent of the faculties which would tend to perpetuate the problem.

Finance

Adequate financing is necessary for the development and operation of educational media facilities. Equipment and materials must be purchased, physical facilities must be provided and personnel must be employed. This section was intended to determine what financial resources were available to perform these tasks and how available financial resources were distributed to purchase equipment and materials, bearing in mind that the media facilities were in a period of development.

Data were not readily available in this section. Only 36.8 percent of all the media units provided figures in this respect. During the interviews, however, media directors and specialists generally, but especially in University-Wide Units, felt frustrated in this area. Nigerian universities had been in financial difficulties since curbs were placed on financial allocations to them in 1976/77. The Nigerian federal government touched on

that point when it recently acknowledged in the presentation speech of the fourth National Development Plan that "development in the universities more than in any other level of education was seriously constrained by government budgetary stringencies" in the period between 1976 and 1980. (West Africa, p. 564)

In the media units, those units located as part of the faculties of education were more seriously affected by these financial difficulties than the independent units and the Teaching Hospital Units. Their allocations, controlled as they were by the Deans, were more easily affected from year to year by the overall priorities of the faculties. Such media units had a preference for the centralized/independent organizational system because that allowed them better control over their finances and would promote faster development.

The data indicate that 50 percent of all media units spent over 60 percent of their budgets on salaries alone. The purchase of equipment, media systems, software, and spare parts took the remaining 40 percent of the budgets. The figures on salaries were generally lower in Teaching Hospital Units. The figures were affected by the narrower coverage of facilities and the concentration on a few fa-

cilities by the Teaching Hospital Units. Also, media personnel in University-Wide Units were employed on the Senior Staff/Lecturer Status which attracted higher salaries. More media personnel in Teaching Hospitals fell into the Junior and Intermediate status which attracted lower salaries.

Problems

This section sought to determine how certain specified problems usually to be found in media units had affected the units in Nigerian universities. A 5-point scale was used with a range of most adverse - least adverse. Table 31 shows the distribution of the responses on the 5-point scale. Responses were spread over the scale. The findings were presented in two ways. First, to determine which problems were considered to have most adversely affected the media units, the top, most adverse column was used. Second, to give an even clearer indication of the situation, the top, two most adverse columns were used. The same system was used to determine the problems which had the least adverse effect on media units. Thus there are 'Single Rank,' 'Two Rank' tables in both situations, as summarized in Tables 32 through 35.

Table 31

Percentage Distribution of Responses: Problems in Media Units

Problems	Most adverse - Least adverse 1	2	3	4	5	Total
Lack of interest by administrative staff	31.0%	23.0%	0.0%	23.0%	23.0%	100%
Lack of interest by academic staff	8.3	33.3	25.0	8.3	25.0	100
Lack of trained personnel	50.0	35.8	0.0	7.1	7.1	100
Lack of spare parts	78.7	7.1	7.1	7.1	0.0	100
Equipment available for purchase	50.0	35.8	7.1	7.1	0.0	100
Software not available	14.3	14.3	35.7	14.3	21.4	100
Import restrictions	71.4	28.6	0.0	0.0	0.0	100
Frequent breakdown of equipment	14.3	21.4	28.6	21.4	14.3	100
Low operation budget	60.0	13.3	6.7	13.3	6.7	100
Space constraints	50.0	21.4	7.1	14.3	7.1	100

Table 32

Single Column: Most Adverse Effect Rank Ordered

Problems	Percentage
Lack of spare parts	78.5%
Import restrictions	71.4
Low operation budget	60.0
Lack of trained personnel	50.0
Equipment not available	50.0
Space constraints	50.0

Table 33

Two Column: Most Adverse Effect Rank Ordered

Problems	Percentage
Import restrictions	100%
Lack of trained personnel	85.8
Equipment not available	85.8
Lack of spare parts	85.6
Low operation budget	73.3
Space constraints	71.4

Table 34

Single Column: Least Adverse Effect Rank Ordered

Problems	Percentage
Lack of interest by academic staff	25.0%
Lack of interest by administrative staff	23.0
Software not available	21.4
Frequent breakdown of equipment	14.3

Table 35

Two Column: Least Adverse Effect Rank Ordered

Problems	Percentage
Lack of interest by administrative staff	46.0%
Software not available	35.7
Frequent breakdown of equipment	35.7
Lack of interest by academic staff	33.3

Table 32 shows a single column evaluation of the problems that were reported to have had the most adverse effect on media units. Lack of spare parts was the single problem considered to have had the most adverse effect, having been so ranked by 78.5 percent of the respondents. Considered on their own individually as in the case of lack of spare parts, it is not possible to appreciate the effect of these problems on the media units. The interviews revealed the overall frustrations of media directors and specialists who felt that their efforts were being neutralized by factors that were totally beyond their control. Collectively, that was the situation. Lack of spare parts was merely the most visible result of other problems. In terms of overall severity, the most serious problem that was considered to have had the most adverse effect was that of import restrictions. One hundred percent of all respondents placed it in the two highest, most adverse columns (see Table 33).

It was reported that government had placed restrictions on the importation of certain products into Nigeria. For some of the products, restriction was in the form of the high import duties they attracted. Electronic equipment importation was an area of products that attracted

very high import duties and it was an area that covered the equipment needs in educational media units. Theoretically, educational institutions had some form of exemption in that by obtaining the necessary clearance and by getting the necessary foreign exchange, they would purchase equipment directly from manufacturers or their agents abroad. In practice, it was found to be extremely difficult to obtain both the permission and the foreign exchange.

The only practicable avenue for the purchase of equipment, especially in view of the urgency of need, was through salesmen in Nigeria who were entrepreneurs and not agents for the manufacturers. They had been able to acquire the necessary import licenses but electronics was not necessarily their area of expertise.

Import restrictions, with the high import duties charged by government that were passed on to the consumer, meant that this was an area of business where profits could easily be made, especially because there was virtually no competition. The demand for equipment was higher than the supply. Also as a purely business venture with no links with and no control by equipment manufacturers, these salesmen had no reason to carry on sales practices that would protect product names by ensuring the good per-

formance of products. Consequently, there were no benefits with sales as were enjoyed elsewhere, such as guarantee periods, after sales maintenance and the assurance of availability of spare parts. Thus the problems became visible mainly after the equipment had broken down and the salesmen, only interested in making sales, could not supply the spare parts. Salesmen did not have to have proof of expertise such as of how long they had been in the business and what physical maintenance facilities they had, as was the normal practice elsewhere. In fact, the effect of certain companies that had previously built their reputation on their after sales service had been neutralized.

Low operation budgets (60%) meant that with the high cost of equipment, which ran at up to 500 percent and above of prices from manufacturing company agents abroad, there was a restriction on the amount of equipment that could at any given time be purchased. Media directors indicated that the problem was worsened by the budgeting process in universities. Budgets approved for a particular period of time had to be utilized during that period; otherwise this could be considered to indicate absence of need of the sums not utilized and could adversely affect

the sums allocated in the next budget. Under pressure to purchase within the limits of time available, they were unable to purchase equipment because of the market situation and they felt punished when this tended to affect their subsequent allocations. Also, they were restricted especially with the purchase of whole media systems such as television facilities because of the lack of physical facilities (space constraints 50%) and the lack of suitable personnel (50%).

Table 34 shows from the single least adverse column the problems that were reported to have had the least adverse effect on media units. Lack of interest by academic staff ranked highest (25%) with lack of interest by administrative staff a close 23 percent. On a two-column, least adverse effect evaluation (Table 35) administrative staff ranked much higher than academic staff with a rating of 46 percent to 33.3 percent respectively. It was found that Teaching Hospital Units reported having more support from administrative staff or rather the staff that performed the administrative duties. Teaching Hospital Units were directly responsible to the Provosts or other staff who, because they were doctors themselves, had a high appreciation of the role of the media in medical

education. University-Wide Units reported less support from the Deans or other purely administrative staff who were felt not to have had sufficient appreciation of the role of the media in education to allocate larger sums of money, or other forms of support including physical facilities, to the media units. Lack of interest by academic staff ran high on the two-column, least adverse evaluation (33.3%) because in many of the units academic staff had not been exposed to any media at all, there being no media stocks or systems to be exposed to. Also academic staff did not have sufficient information regarding what was available that they could use since there were no catalogues printed and distributed. The only catalogues that were found available were software catalogues but they were available in only 15.4 percent of the universities.

The problems considered to have had the least adverse effect were those that were closer to the media directors/specialists which could be dealt with on an individual basis. How much they affected the media unit depended to a large extent on the media directors/specialists themselves.

Summary

The data indicate that:

1. Media use elements had not been provided in the instructional areas as is necessary for effective media use.

2. There were hardware available, but they were concentrated, in terms of number, to 44 percent or four of the universities with media.

3. The small universities had a very narrow range in hardware formats.

4. In terms of item:student ratios, the ratios were very low. Out of the total 23 hardware formats only six showed relatively good ratios in any university of between one item to 250 students (1:250) and one item to 500 students (1:500). In all the others, one item of hardware was available to between 750 and 3,000 students. The selected American universities showed better ratios across more hardware formats.

5. There were inadequate records of software holdings in terms of numbers of items. However, only two software formats (films and slides) showed substantial spread across the Nigerian universities.

6. Software collections were concentrated in 33

percent or three of the universities.

7. Specialized/Production facilities had more spread across University-Wide Media Units but Teaching Hospital Units showed greater concentration on darkroom and graphics/transparency facilities.

8. Teaching Hospital Units had more developed facilities. They had better physical facilities to house specialized facilities.

9. Generally, darkroom and graphics/transparency facilities showed the highest utilization levels and television showed high utilization levels in Teaching Hospital Units.

10. There were Specialized/Production facilities located in Mass Communications and Language Departments, in Centres for African/Nigerian Cultural Studies and in Agricultural Extension services.

11. Qualified personnel were not adequate to cover the needs of media units.

12. Budgets were inadequate to cover the needs of media units.

13. The problems that had the most adverse effects on media units were related to import restrictions.

14. The problems that had the least adverse effects

were those that could be dealt with on an individual basis through proper planning and through more cooperation.

15. Maintenance facilities are necessary to maintain equipment in good working order. Data have identified lack of spare parts as a most serious problem. Media directors identified maintenance as one of the specialized areas with acute shortage of qualified personnel. Trained electronics or maintenance technicians prefer to set up private maintenance shops which are more lucrative as compared to service conditions in university media units.

CHAPTER V

CONCLUSIONS, SUMMARY AND RECOMMENDATIONS

The purpose of this survey was to determine the extent to which the 13 established Nigerian universities had set up educational media units to support their instructional and training programs. The primary goal thereafter was to identify problems that were hindering the development of educational media and to make recommendations that would contribute towards resolving such problems. The investigation covered the major facets of educational media systems. It sought to determine the availability of those physical facilities necessary to create suitable environments for effective media use, the presence of Specialized/Production facilities and their levels of sophistication and utilization, the availability of hardware and software in a wide range of formats, and the availability of the personnel and budget to cover the needs of media units. This section sums up the findings from which conclusions are drawn and recommendations made. The recommendations are presented in the early section in

general terms and are then made with reference to the specific facets of educational media.

Perhaps the one most noticeable common factor among all media directors and specialists that the investigator interviewed or consulted with was their enthusiasm in seeing to the development of educational media. There was, however, a sense of frustration, at not being understood or appreciated in their role, when they spoke particularly about the university administration. But as the data have indicated, lack of interest by administrative staff was not rated as having had a strong adverse effect on the development of educational media facilities (see Table 24). In fact, it had less adverse effects than interest by academic staff on a single column evaluation. This investigation strongly believes that this frustration was due, to a very large extent, on the absence of coordination of efforts. These media directors and specialists were working very much on their own singly. Within the same university there was not sufficient coordination of efforts even between media specialists located in different units. There was no coordination between media units and other faculties in terms of media needs and to enhance overall planning. In a wider perspective, there was no forum for inter-university consultation between media specialists. This aspect is crucial to the development of

educational media in the universities because the expertise in the different areas of educational media in Nigeria reside in the universities. Coordination within and between universities would tap ideas and expertise available in all the universities and increase productivity in the efforts to develop educational media. Cooperation within universities would increase the focusing of efforts towards common goals and allow participation by other interested people to reduce the pressure on media directors.

There was some amount of difficulty experienced by media directors and specialists in dealing with administrative staff, but this difficulty is understandable. Administrative staff perform managerial or coordination functions and are not experts in educational media. While media directors and specialists need to appreciate this position, they must also work towards selling their plans to these administrators through more thorough needs assessments and through justification of needs by the presentation of clear and detailed specifications.

The following general suggestions are made with respect to the preceding section. This researcher suggests:

1. that steps be taken to set up a consortium with membership restricted to Nigerian universities and that arrangements be made to facilitate the circulation of materials among members.
2. that a forum or an organization be established either as part of the consortium or independent of it to:
   a. exchange ideas and information that would help in the development efforts,
   b. structure strategies for achieving common goals and solving common problems or that would assist in solving problems of individual member universities,
   c. draw up educational course structures or other programs in educational media for inclusion in instructional programs at all levels of education,
   d. initiate research in educational media,
   e. provide consultation services to individuals, industry and government,
   f. form a pressure group to assist in getting through plans that would help in the development of educational media not only in the

universities but nationwide.

3. that media directors/specialists:
   a. seek more active cooperation and coordination within each university for more integrative development,
   b. adopt a public relations approach, in terms of thorough background work, to convince parties concerned of the need for and the benefits to be derived from the planned use of educational media.
   c. ensure the circulation of information, particularly to academic staff, indicating services available to them in the form of catalogues or brochures.

In the following section, recommendations are presented with specific reference to those major facets of educational media which were covered by the survey.

Research studies have identified those elements that are necessary to create suitable environments for the effective use of educational media. Lighting is most crucial to any instructional environment and more so in one where media are used. Among those practices that provide suitable lighting are the use of devices to control

illumination levels to suit varying light requirements and darkening devices to eliminate natural light and thus provide suitable brightness/contrast ratios (BCR). Acoustic treatment on floors and ceilings reduces noise and reverberation, thereby promoting good listening environments.

In projection systems the use of both front and rear projection formats provides flexibility. Rear projection allows the use of higher levels of illumination than front projection. Both formats provide flexibility in the fact that they are suited to different requirements in terms of the instructional space. The suitable projection environment includes the availability of a projection screen to match the requirements of the viewing area in terms of type and size of screen. Providing fixed front projection screens ensures that the screens are in the proper position at all times for all projection needs. Large group areas require public address systems and devices for multi-media integration and control as well as the control of illumination levels at the podium.

It was found that no effort had been made in Nigerian universities to provide these suitable environments for the effective use of educational media. This re-

searcher believes that the main problem hindering the provision of these environments is the absence of expertise in the design of instructional areas for multi-media use. Emphasis has been placed on this aspect of educational media, as was evident in the three selected American universities, because of research findings regarding these environments. The following suggestions are therefore made with regard to the provision of suitable environments for multi-media use.

1. That Nigerian universities identify any available personnel in that area of expertise to offer some guidance in this regard as an initial start.
2. That at a more professional level, Nigerian universities should make contact with experts who have proven practical experience in this field in foreign universities. This is particularly necessary in view of the fact that from the findings of this researcher, this field is comparatively new and there are no personnel with the proven practical experience to undertake consultation at the professional level that this area demands.

3. That such experts be brought in as consultants in the early stages to be involved with need assessment and the drawing up of educational specifications and before architects start their designs. One cannot overemphasize this point, especially for those universities still planning their instructional facilities.
4. That efforts be made in conjunction with Deans and university authorities to remodel existing instructional areas in each faculty to accommodate varying group sizes so that the media can be more effectively utilized at least as a stop-gap measure.

Hardware stocks in Nigerian universities were not evenly distributed. Hardware were concentrated in 44 percent or four of the Nigerian universities that had hardware stocks. Of the total 121 cassette recorders available, 101 of them or 83.5 percent were located in only four universities. Sixty-eight slide projectors or 70.1 percent of the total stock of 97 pieces were to be found in only three or 33.3 percent of the universities. The data indicated that the most utilized media system was the front projection system. All the universities with media, or 100 per-

cent, had 16MM projectors and front projection screens were to be found in 90 percent of them with overhead projectors in 80 percent of the universities. In terms of stocks of hardware, the smaller Nigerian universities were limited in the range of stocks in different formats.

The analysis of stocks of hardware available to 1,000 students indicated very low stocks in terms of their effect on instruction. The larger universities with wider format stocks had poor hardware:student ratios. Overall, Nigerian universities showed hardware stocks had low hardware:student ratios. Only two items, slide projectors and cassette recorders, showed ratios as good as one item of hardware to about 250 students. Even then, only one of the items was used for general classroom instruction.

The three selected American universities showed better item:student ratios. Seventy-five percent of their hardware with the best item:student ratios were above the best ratios of any Nigerian university in any format. The range in their hardware items was between one item to 300 students (1:300) and one item to 50 students (1:50). There was also a clear relatedness between the formats that showed a concentration on the projection system for classroom instruction.

There was insufficient data on holdings of software in Nigerian universities. While the data indicated the availability of films in most universities, the movie projector format was not in the hardware with relatively good item:student ratios. Holdings of software also indicated that only two formats, films (84.6%) and slides (76.2%), were to be found in more than 75 percent of the universities with media.

The following suggestions are made regarding hardware stocks and software collections.

1. That efforts need to be made by each university to establish more accurately the actual stocks of hardware and the software collections available.
2. That stocks and holdings be documented, catalogued and properly stored and that these catalogues be circulated.
3. That the range in media formats be expanded especially in the smaller universities.
4. That more hardware be acquired with a view to reaching item:student ratios of 1:200 or better.
5. That a conscious attempt be made to promote balancing through the acquisition of hardware

in those formats that are more generally needed in classroom instruction, and through complementing hardware stocks with relevant software holdings.

There was a duplication of Specialized/Production facilities at media units that served the whole university community and media units that served Teaching Hospitals. This was understandable in view of the fact that Teaching Hospitals were physically far removed from the main campuses. However, in some universities the same specialized facility demanding sophistication in equipment and personnel was to be found at three or more locations. Such facilities included television and film. Teaching Hospital Units had concentration in darkroom (75%), graphics and transparency (75%), and television (58.3%) production facilities. University-Wide Units had more spread across their units. In terms of development, Teaching Hospitals had more developed specialized facilities mainly because better physical facilities had been provided to house them. Generally, darkroom and graphics/transparency production was relatively more developed. Most facilities were in the second stage of development with a range of between 33 percent and 61.9 percent of all the Specialized/

Production facilities falling into this stage of development. Levels of utilization were highest in darkroom and graphics/transparency production facilities. This would indicate that, so far, these were the two most viable Specialized and Production facilities with television being viable mainly in the Teaching Hospital Units.

Language laboratories were available in 92 percent or 12 of the universities. However, the equipment was of the reel-reel format that is being discontinued in favor of the cassette format.

The following suggestions are made with regard to Specialized/Production facilities.

1. Efforts should be made to better coordinate the establishment of these facilities and to make more thorough needs assessments to justify their establishment.
2. This researcher believes that it is necessary to place facilities where they will serve groups with the same felt needs. Grouping will:
   a. allow the growth of facilities in the direction of more sophistication since such is not possible if they are allowed to simply multiply.

b. cut down on overall cost particularly of cost related to equipment, personnel and maintenance.

c. prevent the underuse of such Specialized/ Production facilities, which again increases costs.

d. provide better facilities because of the sophistication for training of media personnel across the groups. Mass communication departments and faculties of education could train their personnel at the same facility.

3. Suitable physical facilities must be provided to house these specialized facilities and provide good work environments. As was the case with facilities for the use of media, experts should be utilized also in this area.

4. Language laboratories should be upgraded to the cassette format especially because they will become more and more difficult to maintain in view of present trends in audio tape systems. In any case, the cassette system is more convenient and easier to store. Master audio tapes

can be kept in the reel-to-reel format.

Media personnel available in universities and the training of media personnel both constitute areas of concern. The staffing situation regarding trained media personnel was better in Teaching Hospital Units. Course work showed undue emphasis on theoretical aspects even in the training of media personnel. This researcher believes that it is left to Nigerian universities to provide training in this area. Most students of educational media now study abroad. This number is, however, not enough to make any impact except in the sense that they in turn become trainers. This can be possible only if service conditions are attractive enough to retain them at the universities. The situation affects the professional technical staff, especially those outside of Teaching Hospital Units, because they are seen in terms of status rather than performance. Media specialists who hold degrees fall into the lecturer and senior staff category and do not have the same problems. Unfortunately, for media units to run smoothly, these technicians must be available to carry out production and maintenance.

This is an area for the forum suggested above to work on since the same problem exists in all the universities

nationwide. If media directors/specialists appreciate the role of these technicians, then they should seek to improve their working conditions. The forum should look into this aspect. Media directors should also explore the possibility of using student assistants.

Data were not available regarding annual budgets for the relevant period of time for which they were requested. In interviews with media directors and specialists, this researcher identified two other related areas that deserve some attention. Media directors felt dissatisfied not only with the budgeting system, but also with the process of getting materials and equipment purchased. They indicated that the process of purchasing equipment through central purchasing units was unnecessarily long and caused very long delays from the approval stage through to delivery. They also indicated that the system by which they had to purchase equipment and materials, through contractors usually registered with the universities, involved wastage of finances through higher pricing practices by such contractors. Since these aspects were not investigated, but appear to have strong negative effects, this researcher believes that they should be investigated with a

view to determining how equipment and materials can be more easily purchased to eliminate these higher pricing practices. In terms of larger budgetary allocations, a better presentation of needs to indicate benefits that could derive from meeting those needs would generate more support from administrative staff.

Media directors indicated that they had low operation budgets. University authorities should pay more attention to attempts to develop media facilities in view of research findings elsewhere, in terms of the potential in educational media to solve instructional problems. Larger budgetary allocations should be provided towards developing facilities since such allocations could in fact represent savings in the long run.

Responses regarding problems that had affected the development of educational media in Nigerian universities indicated six problems that had adverse effects to between 50 percent and 78 percent of the respondents on a single column, most adverse evaluation. On a two column, most adverse evaluation the same problems had adverse effects to between 71.4 percent and 100 percent of the respondents. Three of these problems have already been dealt with in the preceding sections. The other three

that have not been dealt with include import restrictions, lack of spare parts and equipment not being available for purchase. The data indicate that these problems have resulted from government action to reduce the drain on foreign exchange reserves. Although certain concessions had been made for educational institutions, media directors found it difficult to obtain the necessary permission and foreign exchange. Media directors thus relied on entrepreneurs who did not have the expertise or the motivation to provide after sales maintenance and provide spare parts. This is an area in which Nigerian universities should make collective efforts to find a lasting solution. The forum suggested above should study the problem thoroughly and arrive at a solution that can be acceptable to the government. This could be in the form of relaxing the restrictions so that educational institutions generally can find it easier to purchase equipment directly through foreign agents or manufacturers. Restrictions regarding the participation of foreigners in certain businesses imposed with the indigenization scheme, could also be relaxed to allow reputable foreign manufacturers of educational media hardware and media systems to establish agencies in Nigeria or in some way allow better flow of these equipment into

educational institutions. We cannot expect any appreciable development in educational media with the benefits to education to be derived if educational institutions continue to be starved of the media they need. The suggested forum, working with other interested parties including government, should arrive at a suitable solution.

The suggestions set out above are not exclusive. They represent the findings and evaluations by this researcher. The following are suggested as areas for further research.

1. Budgeting and budget allocations and the effects this has on the development of educational media,
2. What organizational changes need to be made to facilitate the grouping of specialized facilities and to allow more cross-discipline registration.

APPENDIX A

Questionnaire

A SURVEY OF EDUCATIONAL MEDIA AND TECHNOLOGY

This survey is designed to provide information on present media facilities and future plans in Educational Media and Technology in Nigerian universities. It covers the following areas: physical facilities, equipment software, personnel and finance. The questions and statements below are to be answered by checking (✓) the line of the response which best describes that aspect of Educational Media and Technology in your institution or by completing the blank spaces where data need to be supplied. Please complete the questionnaire in every detail. Explanations and definitions have been inserted which may be helpful in interpreting words and phrases.

General Information

1. Name of University: _____
2. Title of Media Service Program: _____
   (e.g. Education Media Center)
3. Population served: _____ (specify number)
4. Position of Respondent: _____ Director
   _____ Media Specialist
   _____ Librarian
   _____ Co-ordinator
   _____ Other (specify)
   _____

5. When was your media service program established? ____(year)

6. Were the media needs of your institution assessed before the establishment of the program?

7. Was a document prepared that specified the types and number of buildings (including sketches); equipment; materials and personnel required, prior to the establishment of the program? ____Yes ____No

8. Does your institution offer academic courses in Educational Media and Technology? (Audio Visual)?

9. Is there any specific person who is in charge of the media services program?

10. Does this person teach educational media courses? ____Yes ____No

11. Is the same person in charge of the academic program in Educational Media and Technology? ____Yes ____No

PHYSICAL FACILITIES

a. Individual Viewing and Listening Area

(Refers to a small area set aside where individuals can view or listen to audiovisual materials on their own. Usually treated to reduce noise, it has individual carrels or booths supplied with headsets and viewing consoles.)

12. Does your institution have such an area? ____Yes ____No

13. If no, will such an area be provided in the next 2-3 years? ____Yes ____No

14. If your answer to item 12 is yes, specify the number of such areas. _____(number)

15. What is their total seating capacity? _____(persons)

16. Please check (✓) from the list below those items that are now to be found in each individual station and those that will be provided in the next 2-3 years?

NOW	FUTURE	
___	___	Carrel
___	___	Chair
___	___	Audio Console
___	___	Headset
___	___	Viewing Console
___	___	Lighting at each station
___	___	Light dimmer at each station
___	___	Noise reduction treatment

b. Small Group Area

(Refers to a room used for instructional purposes for groups of less than fifty (50) persons. It usually contains facilities for the control of light levels, darkening materials such as curtains or shades, a projection screen and a television set.)

17. Does your institution have such a room? ____Yes ____No

18. If no, will such a room be provided in the next 2-3 years?
____Yes ____No

19. If your answer to item 17 is yes, specify the number of such rooms. _____(number)

20. Please check (√) from the list below, those items that are now to be found in each of the rooms and those that will be provided in the next 2-3 years.

NOW	FUTURE	
___	___	facility for front projection
___	___	fixed front projection screen
___	___	facility for rear projection
___	___	television set
___	___	light dimmers
___	___	darkening facility (curtains, shades)
___	___	noise reduction treatment

c. Medium Group Area

(Refers to a room used for instructional purposes for groups of less than 150 persons. It usually contains facilities for the control of light levels, darkening materials such

as curtains or shades, a fixed front projection screen and television sets.)

21. Does your institution have such a room? ____Yes ____No

22. If no, will such a room be provided in the next 2-3 years? ____Yes ____No

23. If your answer to item 21 is yes, specify the number of such rooms. _____(number)

24. Please check (✓) from the list below, those items that are now to be found in each of the rooms and those that will be provided in the next 2-3 years.

NOW	FUTURE	
___	___	facility for front projection
___	___	fixed front projection screen
___	___	facility for rear projection
___	___	television sets
___	___	light dimmers
___	___	darkening facility (curtains, shades)
___	___	noise reduction treatment

d. Large Group Area

(Refers to a room used for instructional purposes for groups of up to 500 persons. It usually contains facil-

ities for the control of light levels, darkening materials such as curtains or shades; and facilities for both front and rear projection. It may also contain a public address system or have the ceiling and walls treated to enhance the voice of an instructor.)

25. Does your institution have such a room? ___Yes ___No

26. If no, will such a room be provided in the next 2-3 years? ___Yes ___No

27. If your answer to item 25 is yes, specify the number of such rooms. ____(number)

28. Please check (√) from the list below those items that are now to be found in each of the rooms and those that will be provided in the next 2-3 years.

NOW	FUTURE	
___	___	facility for front projection
___	___	front projection booth
___	___	fixed front projection screen
___	___	facility for rear projection
___	___	television sets
___	___	light dimmers
___	___	darkening facility (curtains, shades)
___	___	noise reduction treatment

NOW	FUTURE	
___	___	sloped floor (or stepped)
___	___	teacher's platform
___	___	treated for voice projection
___	___	public address system
___	___	light control from teacher's position
___	___	control of media at teacher's position

e. Auditorium

(Refers to a room or hall specially designed for stage or film presentations, concerts, recitals, lectures and audiovisual features and presentations.)

29. Does your institution have such a room or hall? ___Yes

___No

30. If no, will such a room be provided in the next 2-3 years?

___Yes ___No

31. If your answer to either items 29 or 30 is yes, please check (✓) from the list below those items that are to be found in the Auditorium and those that will be provided in the next 2-3 years.

NOW	FUTURE	
___	___	facility for front projection
___	___	front projection booth
___	___	fixed front projection screen
___	___	facility for rear projection
___	___	television sets
___	___	light dimmers
___	___	darkening facility (curtains, shades)
___	___	noise reduction treatment
___	___	treated for voice projection
___	___	public address system
___	___	speaker's podium
___	___	light control at speaker's podium
___	___	multi-media control at speaker's podium
___	___	sloped/stepped floor
___	___	preparation area
___	___	ventilation
___	___	air-conditioning

EQUIPMENT

32. Please provide an estimate in number of units of the amount of media equipment now available at your institution and of the amount that will be available in 2-3 years. Where any of the items are not now available or will not be available write N/A.

NOW	FUTURE	
___	___	a. 35MM cameras
___	___	b. 2X2 cameras
___	___	c. large press camera
___	___	d. camera lenses
___	___	e. 8MM movie cameras
___	___	f. 16MM movie cameras
___	___	g. 8MM movies projectors
___	___	h. 16MM movie projectors
___	___	i. slide projectors
___	___	j. sound filmstrip projectors
___	___	k. silent filmstrip projectors
___	___	l. overhead projectors
___	___	m. opaque projectors
___	___	n. multi-image programmers
___	___	o. record players
___	___	p. cartridge tape player/recorders

NOW	FUTURE	
___	___	q. reel to reel tape player/recorders
___	___	r. cassette tape player/recorders
___	___	s. cassette duplicating machines
___	___	t. Zerox type copiers
___	___	u. thermal copiers
___	___	v. front projection screens (permanently fixed)
___	___	w. front projection screens (portable)
___	___	x. public address system (permanently fixed)
___	___	y. public address system (portable)
___	___	z. main frame computers
___	___	aa. mini computers
___	___	bb. micro computers

SOFTWARE

33. Please provide an estimate (in number) of the amount of software now available at your institution, and of any additional amount that will be provided in the next 2-3 years. Where any of the items are not available, or will not be available, write N/A.

NOW	FUTURE	
___	___	a. films
___	___	b. filmstrips

NOW	FUTURE	
___	___	c. slides
___	___	d. flat mounted visuals
___	___	e. transparencies
___	___	f. records
___	___	g. audio tape recordings
___	___	h. video tape recordings
___	___	i. computer programming for computer assisted instruction

34. Indicate in percentages, the acquisiton of software via the methods listed, as at now and in the next 2-3 years.

NOW	FUTURE	
___	___	% purchased
___	___	% received via loan
___	___	% produced in-house
___	___	% other
100%	100%	% Total

SPECIALIZED FACILITIES

a. Television Facility

35. Does your media program have a television facility?

___Yes ___No

36. If yes, please select from the following three scenarios the one that best describes the instructional television facility in your media program.

First Scenario: The television facility consists of a portable camera and recording system (or several such units) used for single-camera recording of lectures, experiments or
( ) demonstrations. The facility has an inventory of less than 25 individual pieces of equipment excluding microphones, cables, etc.

Second Scenario: The television facility includes the first scenario as well as a distribution system that is centralized. This may be a studio or a particular space where record-
( ) ing takes place. With additional video monitors and recorders, the facility has an inventory of between 25 and 50 individual pieces of equipment that include studio lights.

Third Scenario: The television facility includes the two previous scenarios and may have more than one studio. It has color and an inventory
( ) of more than 50 individual pieces of equipment that include telecine, light dimmers and special effects generation.

37. Please check (✓) the means of transmission distribution in your television facility or that will be available in the next 2-3 years.

NOW	FUTURE	
___	___	tape distribution
___	___	RF. cable distribution
___	___	within the building
___	___	outside the building
___	___	video/audio distribution
___	___	to television station

NOW	FUTURE	
___	___	campus TV broadcast station
___	___	micro-wave or satellite

38. Please indicate the number of the following items of equipment in your television facility and in plans for the next 2-3 years. (PORTABLE EQUIPMENT ONLY)

NOW	FUTURE	
___	___	monitors/receivers (B/W)
___	___	monitors/receivers (color)
___	___	cameras (B/W)
___	___	cameras (color)
___	___	1/2" VTR/Players
___	___	3/4" VTR/Players
___	___	1" VTR/Players
___	___	2" VTR/Players
___	___	light kits
___	___	portable studio/van

39. Please supply data or check (✓) those items that are available or that will be available in the next 2-3 years. (STUDIO)

NOW	FUTURE	
___	___	ceiling height (in feet)
___	___	total number of rooms

(types of rooms - to follow)

(types of rooms)

NOW	FUTURE	
___	___	master control
___	___	production control
___	___	telecine
___	___	editing
___	___	video-tape
___	___	studio 30 X 30
___	___	studio 30 X 40

(supply number)

___	___	cameras (B/W)
___	___	cameras (color)
___	___	video recorders (B/W)
___	___	video recorders (color)
___	___	telecine (B/W)
___	___	telecine (color)
___	___	lights
___	___	dimmers
___	___	special effects

b. Film Production Facility

40. Does your media program have a film production facility?

___ Yes ___ No

41. If Yes, please select from the following three scenarios the one that best describes the instructional film pro-

duction facility in your media program.

First Scenario: The film facility has one or more 8MM
( ) film cameras with a room equipped to develop 8MM film.

Second Scenario: The facility has the above scenario
( ) as well as the capability to shoot and to develop 16MM film.

Third Scenario: The facility has all of the above as
( ) well as editing capability, including sound recording of both 8MM and 16MM film.

42. Please check (√) from the following list those items that are to be found in your facility and those that will be available in the next 2-3 years.

NOW	FUTURE	
___	___	super 8MM camera
___	___	16MM camera
___	___	film processing facility
___	___	editing facility (silent)
___	___	editing facility (sound)
___	___	8MM sound projector/recorder
___	___	16MM sound projector/recorder
___	___	animation camera
___	___	editing room
___	___	workroom

c. Radio Station

43. Does your media facility have a radio station?

___Yes ___No

44. If Yes, please select from the following three scenarios the one that best describes the radio facility in your media program.

First Scenario: The facility has a single studio with at least one tape machine. It has some
( ) method of gathering and transmitting news and also has music transmission.

Second Scenario: The facility has multiple equipment such as audio machines and has multiple rooms that include a master control room
( ) and at least two studios. It may have facilities for newscasts and on-air interviews.

Third Scenario: The facility includes both scenarios above as well as stereo production. It has additional rooms, additional pieces of equipment, multi-track audio equipment and a performance studio. It has news teletype and on-air telephone interviewsing.

45. Please check (√) from the following, those items that are now available in your radio facility and those that will be available in the next 2-3 years.

NOW	FUTURE	
___	___	AM transmission
___	___	FM transmission
___	___	wired transmission
___	___	carrier current transmission
___	___	stereo broadcast
___	___	master control room
___	___	news studio (Number of such) _____

NOW	FUTURE	
___	___	on-air studio (Number) _____
___	___	teletype machine
___	___	telephone interview system
___	___	broadcast cartridge machine
___	___	broadcast audio tape machine

d. Audio Facility

46. Does your media program have an audio facility separate from the radio facility? ____Yes ____No

47. If Yes, please select from the following three scenarios the one that best describes the audio facility in your media program.

First Scenario: The audio facility is equipped with portable audio recording/playback machines.
( ) It does not have a room specifically designed for audio recording.

Second Scenario: The facility has a studio with the capability for both mono and stereo recording.
( ) There are additional equipment mainly for single track recording.

Third Scenario: All of the above as well as multiple equipment with multi-track production capability of between 4-16 tracks.

48. Please check (√) from the following list those items that are now available in your audio facility and those that will be available in the next 2-3 years.

NOW	FUTURE	
___	___	two or more turntables
___	___	cartridge tape decks
___	___	cassette tape decks
___	___	reel-to-reel tape decks
___	___	tape splicing equipment
___	___	mixer ____number of channels
___	___	control room
___	___	annex booth
___	___	group facility
___	___	treated to reduce noise
___	___	air conditioned

e. Darkroom Facility

49. Does your media program have a darkroom facility?

____Yes ____No

50. If Yes, select from the following three scenarios the one that best describes the darkroom facility in your media program.

First Scenario: The darkroom facility is a temporary darkroom equipped for developing, printing and enlarging black and white still photographs only.

( )

Second Scenario: The facility has a permanent darkroom in addition to the above. It has water temperature control, controlled ventilation and professional darkroom equipment.

( )

Third Scenario: The facility has the above as well as
( ) color developing and printing. It also has slide sorting and mounting capability.

51. Please check (√) from the following list those items that are to be found in your facility and those that will be available in the next 2-3 years.

NOW	FUTURE	
___	___	equipment for developing film
___	___	equipment-printing and enlarging
___	___	black and white photography only
___	___	color developing and printing
___	___	slide sorting
___	___	slide mounting
___	___	controlled water temperature
___	___	controlled ventilation

f. Graphics and Transparency Production

52. Does your media program have facilities for the production of instructional graphics and transparencies?

____Yes ____No

53. If Yes, select from the following three scenarios the one that best describes your facility.

First Scenario: The facility has a copy stand, dry
( ) mount press and paper cutter and can produce simple visuals such as graphs as well as simple transparencies.

Second Scenario: The facility has the above, one or
( ) more drawing tables, a lettering machine, a small diazo machine and a laminator.

Third Scenario: It has the above as well as a photo-
( ) modifying machine, a repro-master and a large diazo machine.

54. Please check (✓) from the following list those items that are now available in your facility and those that will be available in 2-3 years.

NOW	FUTURE	
___	___	two or more drawing tables
___	___	work tables
___	___	paper cutter
___	___	copy stand
___	___	laminator
___	___	dry mounting equipment
___	___	lettering machine
___	___	small diazo machine
___	___	large diazo machine
___	___	photo modifying machine

g. Maintenance Facility

55. Does your media program have a maintenance facility for repairs to the media equipment?

____Yes ____No

56. If Yes, please select from the following three scenarios, the one that best describes your maintenance facility.

First Scenario: The facility carries out preventative
( ) maintenance such as checking and cleaning of equipment. It has tools only for such tasks.

Second Scenario: The facility has a repair shop and carries out cleaning and minor repairs to
( ) media equipment. It has tools and test equipment for these tasks.

Third Scenario: It has a shop fully equipped for testing and repairing all the media equipment.
( ) It can carry out a major overhaul of all such equipment.

57. Please check (√) from the following list those items that are to be found in the maintenance facility and those that will be available in 2-3 years.

NOW	FUTURE	
___	___	basic shop test equipment
___	___	repair equipment to selected media equipment
___	___	repair equipment to all media equipment
___	___	cleaning and checking of equipment only
___	___	minor overhaul
___	___	major overhaul
___	___	one repair area
___	___	separate maintenance and repair areas
___	___	complete test equipment bank

h. Language Laboratory

58. Does your media program have a language laboratory?

____Yes ____No

59. If Yes, what is the total seating capacity of the facility? _____(number)

60. Select from the following three scenarios the one that best describes your language laboratory.

First Scenario: The facility is not housed in a room specifically designed as a language laboratory. It has a 'listen' and 'respond' capability only.
( )

Second Scenario: The facility is housed in an area that was designed as a language laboratory or modified for the purpose. It has a 'record' capability but may not have booths specially designed for a language laboratory.
( )

Third Scenario: The facility has the capabilities above. It is housed in an area specifically designed as a language laboratory. It has a master control console with such functions as simultaneous individual, group or section monitoring and control over all the functions in the language laboratory.
( )

61. Please check (✓) from the following list those items that are to be found in your language laboratory and those that will be made available in the next 2-3 years.

NOW	FUTURE	
___	___	individual booths
___	___	individual microphones
___	___	audio tape, playback only

NOW	FUTURE	
___	___	audio tape, recorder/playback
___	___	individual control dials
___	___	master console
___	___	individual booth monitoring
___	___	selected booth monitoring
___	___	control of functions from console
___	___	light dimmers
___	___	treated to reduce noise
___	___	airconditioned

62. Which of the following facilities that are now not available in your media program does your institution plan to establish in the next 2-3 years? Please check (✓) response.

____ television facility

____ 8MM film production

____ 16MM film production

____ radio station

____ audio recording facility

____ darkroom facility

____ graphics/transparencies production

____ maintenance facility

____ language laboratory

UTILIZATION

63. For what percentage of your institution's normal school day are the following facilities in operation? Please check (√) the appropriate response. (100% would indicate that the facility is in full use from when your institution starts instruction in the morning until it closes. Calculate in quarters by dividing the school day in hours by four (4).)

NOW

(0-25%)	(25%-50%)	(50%-75%)	(75%-100%)	
___	___	___	___	a. closed-circuit television
___	___	___	___	b. television studio
___	___	___	___	c. radio station
___	___	___	___	d. darkroom
___	___	___	___	e. language laboratory

64. Do you plan to have any changes in the operation of the facilities in the next 2-3 years?

FUTURE

(0-25%)	(25%-50%)	(50%-75%)	(75%-100%)	
___	___	___	___	a. closed-circuit television
___	___	___	___	b. television studio

Future (continued)

(0-25%)	(25%-50%)	(50%-75%)	(75%-100%)	
___	___	___	___	c. radio station
___	___	___	___	d. darkroom
___	___	___	___	e. language laboratory

65. Provide an estimate of the number of items produced in the following media formats per month of normal operation of your institution. Please check (✓) response.

NOW

(0-10 items)	(10-50 items)	(over 50 items)	
___	___	___	a. graphics
___	___	___	b. transparencies
___	___	___	c. audio tapes
___	___	___	d. slides

66. Do you plan to have any changes in the number of items produced in these formats in the next 2-3 years? Please check (✓) response.

FUTURE

(0-10 items)	(10-50 items)	(over 50 items)	
___	___	___	a. graphics
___	___	___	b. transparencies
___	___	___	c. audio tapes
___	___	___	d. slides

67. Provide an estimate of the number of items produced in the following media formats in the last six months in your institution. Please provide the number of items.

NOW

___ a. 8MM films

___ b. 16MM films

___ c. video tapes

(If no items were produced, write N/A)

68. Do you plan to have any changes in the production of the formats in the next 2-3 years? Please provide number of items.

FUTURE

___ a. 8MM films

___ b. 16MM films

___ c. video tapes

PERSONNEL

69. To whom is the person who is in charge of the media program directly responsible? _____(please specify)

Does your program have the following personnel in employment? Where the answer is Yes, please specify the number of such personnel.

NOW	(Yes)	(No)	(Number)	
___	___	___	___	a. trained television cameramen
___	___	___	___	b. trained cinematographers

Now (continued)

(Yes)	(No)	(Number)	
___	___	___	c. trained photographers
___	___	___	d. trained graphic artists
___	___	___	e. trained electronics technicians

70. Does your program plan to employ any of the following personnel in the next 2-3 years?

FUTURE (Yes)	(No)	(Number)	
___	___	___	a. trained television cameramen
___	___	___	b. trained cinematographers
___	___	___	c. trained photographers
___	___	___	d. trained graphic artists
___	___	___	e. trained electronics technicians

71. Realizing that there may be some overlapping in function, does your program have in employment the following trained personnel to cover the needs in these media services? Where the answer is Yes, please indicate the number of personnel.

NOW	Specialist			Technician			
	(Yes)	(No)	(Number)	(Yes)	(No)	(Number)	
	___	___	___	___	___	___	a. closed-circuit television
	___	___	___	___	___	___	b. television studio
	___	___	___	___	___	___	c. 8MM/16MM film production

Now (continued)

Specialist			Technician			
(Yes)	(No)	(Number)	(Yes)	(No)	(Number)	
___	___	___	___	___	___	d. radio station
___	___	___	___	___	___	e. transparency preparation
___	___	___	___	___	___	f. audio laboratory
___	___	___	___	___	___	g. language laboratory

72. Does your program plan to employ the following personnel in the next 2-3 years to cover the needs in these media services?

FUTURE	Specialist			Technician			
(Yes)	(No)	(Number)		(Yes)	(No)	(Number)	
___	___	___		___	___	___	a. closed-circuit television
___	___	___		___	___	___	b. television studio
___	___	___		___	___	___	c. 8MM/16MM film production
___	___	___		___	___	___	d. radio station
___	___	___		___	___	___	e. transparency preparation
___	___	___		___	___	___	f. audio laboratory
___	___	___		___	___	___	g. language laboratory

73. How many educational media courses are taught in media academic programs? _____ (Number of courses)

74. At what level are the courses taught?

____ undergraduate ____graduate ____ both

75. What is the total number of students that have graduated from the educational media courses? ____ (number)

76. What is the number of students now enrolled in undergraduate level courses and what will the enrollment figure be in the next 2-3 years? ___ Now ___ Future

77. Are there any other media related courses offered elsewhere in your institution? ___ Yes ___ No

78. If Yes, what department(s) offer such courses?

_____ (specify name)

_____ (specify name)

_____ (specify name)

FINANCE

79. Please provide a breakdown (in Naira) of your budget for each of the last three (3) years. Specify for the categories listed.

Total Expenditure	Salaries	Equipment	Software	Repairs	Year
_____	_____	_____	_____	_____	1978/79
_____	_____	_____	_____	_____	1979/80
_____	_____	_____	_____	_____	1980/81

GENERAL

80. Problems may be encountered in effectively running educational media services. Examples of some are listed below. Please rank each problem on a 5-point scale on how adverse an effect it has had on your media program. (most adverse - least adverse)

1	2	3	4	5	
___	___	___	___	___	a. lack of interest by the administrative staff
___	___	___	___	___	b. lack of interest by academic staff
___	___	___	___	___	c. lack of trained specialist and technicians
___	___	___	___	___	d. difficulty in obtaining spare parts
___	___	___	___	___	e. equipment not available for purchase
___	___	___	___	___	f. software not available
___	___	___	___	___	g. import restrictions
___	___	___	___	___	h. frequent breakdown of equipment
___	___	___	___	___	i. low operation budget
___	___	___	___	___	j. space constraints
___	___	___	___	___	k. other (specify) _____
___	___	___	___	___	l. _____
___	___	___	___	___	m. _____
___	___	___	___	___	n. _____

81. Is your institution currently making efforts to improve or further develop the media program? ____Yes ____No

82. If your response is Yes, please rank each of the items listed below on a 5-point scale to indicate its priority in your plan for the next 2-3 years. Please check (✓) response.

(highest priority - lowest priority)

1	2	3	4	5	
___	___	___	___	___	a. increase the physical facilities (buildings)
___	___	___	___	___	b. improve on the media use capability of facilities
___	___	___	___	___	c. develop more in-house production capability
___	___	___	___	___	d. purchase more equipment
___	___	___	___	___	e. acquire more software
___	___	___	___	___	f. employ more trained personnel
___	___	___	___	___	g. solicit more financial support
___	___	___	___	___	h. other (specify) _____
___	___	___	___	___	i. _____
___	___	___	___	___	j. _____
___	___	___	___	___	k. _____

Thank you very much for your time and cooperation in completing

this survey. Any comments that you may have on any items which were not clear or complete would be welcomed.

_____ Please check (✓) here if you would like to receive a profile of the data on your institution.

APPENDIX B

Correspondence

1050 Tremont Street,
Apartment 603,
Boston, MA 02120
February 15, 1982

Dear

Having just returned from Nigeria where I have carried out a research project, I am now in the process of compiling and reporting my findings. The research project, which is in partial fulfillment of the requirements for the degree of Doctor of Education in the area of Educational Media, is attempting to find out what educational media facilities are available to support university teaching in Nigerian Universities.

Nigerian Universities are presently in the initial stages in the whole process of setting up and developing educational media facilities. While a comparison of levels of development within Nigerian Universities would help to indicate what Nigerian Universities are ahead of others in this development process, such a comparison would fail to indicate what higher goals and standards to aim for. Media standards set by professional bodies elsewhere would be useful but only as generalized recommendations.

In view of the above reasons, it was thought that it would be of more benefit to make external comparisons with some universities here in the United States where there are fully developed educational media facilities. Such a comparison should provide greater impact by practically indicating what similar universities in the United States have achieved and perhaps even encourage Nigerian Universities to look further than their traditional sources for much needed assistance.

Your facility was selected as one of three other facilities that would be used for this comparison.

I shall be most grateful if you would assist in the study by completing the enclosed questionnaire. Time permitting, I shall be interested in visiting your facility. Would you let me know if I can do so this summer.

I look forward to an early reply and thank you very much for your assistance.

Sincerely,

Major Advisor: Dr. G. F. McVey

ANDREW A. NKOM

1050 Tremont Street,
Apartment 603,
Boston, MA 02120
22 August, 1980

Dear Sir, Re: A Research Study

As a doctoral candidate at the School of Education of Boston University, I am in the process of selecting a number of Nigerian Universities for a research study. The study, in the general area of Educational Media and Technology, is concerned specifically with the physical facilities now available for the use of Educational Media (Audio-Visual) Equipment.

Research indicates that in Nigeria, attention is now being paid to the acquisition of media equipment without the necessary and corresponding regard for the provision of suitable and adequate physical facilities for the effective use of the equipment. This research study is essential because it will provide information basic to the provision of such suitable physical facilities.

Your assistance, which is necessary for this research study to be successfully carried out, will be greatly appreciated.

To help determine whether or not your institution meets the basic criteria for the research study, kindly answer very briefly the following questions.

1. Does your institution have an Educational Technology Centre? (or an Audio-Visual Centre, Educational Media Centre, etc.)
2. Does your institution provide media equipment for use within the institution?
3. Is such equipment used for classroom teaching?
4. Are there classrooms, lecture halls, language laboratories, etc. specifically designed for the use of this equipment ?
5. For what else is the equipment used?
6. Describe very briefly the services that are provided in your institution?

Please indicate whether or not I have permission to carry out the research study in your institution in the event that your institution is considered an appropriate one for inclusion in this study. I believe that there are definite resulting benefits for those institutions that agree to be involved in this study.

Would you also kindly let me hear from you no later than the end of October, 1980. Thank you very much for your co-operation.

Yours faithfully,

Andrew A. Nkom



Dr. Tunde Kolo
National President

Dr. Adebayo Ogunbi
National Secretary

Mr. J.B. Ioanna
National Treasurer

Nigeria Audio Visual Association
Centre for Educational Technology
Ahmadu Bello University
Zaria, NIGERIA

25th March, 1981.

Dear Colleague,

INTRODUCING MR. ANDREW NKOM

The bearer, Mr. Andrew A. Nkom is a member of the teaching staff of the Advanced Teachers' College, Institute of Education, Zaria. He is currently on a study leave at Boston University, USA to complete a Ph.D. degree.

He is back home on a brief visit to gather data for his research. The study which will take him round all the universities in the country, intends to find out the extent of media support for learning and teaching in these institutions of higher learning. He will explain further on the nature of the study.

Whatever assistance you can render to make his data-gathering effort smooth in your school will be greatly appreciated.

Yours sincerely,

Dr. Adebayo Ogunbi,
(National Secretary).

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VITA

Name: ANDREW ANDARAWUS NKOM

Present Address: 9 A.T.C. Staff Quarters
Advanced Teachers College
P.M.B. 1041
ZARIA, NIGERIA

Date of Birth: 20th June, 1943
Place of Birth: Kaura, Moroa, Kaduna State of Nigeria
Marital Status: Married

Educational Institutions Attended:

1980-1982	Boston University, Boston, MA
1978-1980	Emerson College, Boston, MA
1967-1970	Ahmadu Bello University, Zaria
1963-1966	Advanced Teachers College, Zaria
1958-1962	Provincial Secondary School, Zaria

Qualifications:

1982	Ed.D. Educational Media
1980	M.A. Mass Communication
1970	B.A. (Hons) English (Second Upper)
1966	Nigerian Certificate in Education (Distinction in English)
1962	West African School Certificate

Work Experience:

1970-	Lecturer, Institute of Education Ahmadu Bello University, Zaria
1966-67	Teacher, Kaltungo Teachers College