

AVAILABILITY AND UTILIZATION OF
INSTRUCTIONAL MATERIALS IN BUSINESS
SUBJECTS

BY

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DECLARATION

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



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CERTIFICATION

This thesis titled "Availability and Utilization of Instructional Materials in Business Subjects" by Esther Mojoyinade Adedijo meets the regulations governing the award of the degree of Master of Education (Business Education) of Ahmadu Bello University and is approved for its contribution to knowledge and literary presentation.



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DEDICATION

This work is dedicated to AanuOluwapo, Omokorede Adedijo and the unborn generations.

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I am most grateful to the Almighty God who granted me grace to go through this programme successfully, to Him alone be all glory and majesty.

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ABSTRACT

Instructional materials are invaluable for enrichment purposes in teaching and learning situation. Good performance in the subjects are ensured as a result of its utilization. This is the reason why foreign educators and in recent times Nigerian educators advocated for their use in teaching learning processes. Despite this, instructional materials in teaching are often neglected in the teaching of business subjects. It appears that out of numerous problems facing the teaching and learning of business subjects, non availability of instructional materials seems to be too pronounced. It was therefore thought necessary to investigate the utilization of instructional materials in teaching of business subjects in Osun and Oyo States College of Education. The study, was undertaken to find out the availability of instructional materials in the colleges, to enumerate how useful instructional materials are; to examine how often instructional material are used in classroom situation; to identify problems encountered during usage and steps taken to find solutions to the problems encountered while using instructional materials in teaching. Sixteen (16) teachers and eight hundred and fifty (850) students formed the population of this study. The sample for the study was (16) teachers and (265) students. This survey study was carried out in five weeks. T-test statistic was used for the analysis of data. The result showed that instructional materials are not adequate, those that are available were not made use of while teaching. It was found that instructional materials are useful and important to the teaching and learning business subjects being skilled subject. The findings also revealed that

when and where some of these materials are available certain factors militate against their use to promote affective teaching and learning. These include inadequacy of materials, too much teaching load for the teachers, constant power failure and lack of spare parts to replace the damaged ones. Based on these findings, it was concluded that effective utilization of instructional materials has great impact on the mastery of business subjects, promote students interest in the subject and encourage teachers' efficiency; and that instructional materials in the colleges are not sufficient. Based on the findings and conclusion drawn, it was recommended that more instructional materials should be supplied to the Colleges by the government; private organisations, philanthropists, individuals as well as the parents and teachers association should take the concern to assist the government in the purchase, supply and maintenance of equipment and materials. More business subject teachers should be employed to the Colleges. Textbooks, Workshops, Seminars and Conferences to acquaint teachers with the knowledge of how to operate, use, as well as improvise instructional materials should be organised. Lastly the teachers should be mandated to use instructional materials while teaching.

Esther Mojoyinade Adedijo

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DEFINITION OF TERMS

Some words were used, in this study and their definitions have been provided in accordance with how they are used in the context of this study.

Audio-Visual Materials: Anything that present visual and auditory symbols to promote teaching and learning such as charts, pictures, slides and filmstrip etc.

Business Education: Is a programme of economic education which provides or equips a student with knowledge, marketable skills and attitudes needed for initial employment and advancement in business occupations.

Business Subjects: These are courses specified by the National Commission for Colleges of Education (NCCE) to be offered. It includes, Shorthand, Typewriting, Principle of Accounts, Office Practice, Business Law, Business Mathematics, Statistics, Marketing and so on.

Equipment/Facilities: Refers to the business machine in use and other consumable items. For example, typewriters, dictating machines, word-processors, calculators, typing sheets etc.

Instructional Materials: All kinds of resources for teaching purposes. It will also be taken to include all kinds of instructional media. For example, radio tape recorder, charts, motion pictures etc.

Imported Materials - This term is used to denote those instructional resources which are not made by the teachers or students or by both of them, but are brought into the country.

Locally made materials:- This include all instructional resources which are made by teachers or students or jointly by them. It includes all instructional material provided within the country.

Non-Printing Materials: These are audio-visuals such as sound-motion pictures, slides, tape cassettes, models that are used to enhance teaching and learning.

Perception:- Opinion held by the teachers and students on the use of instructional materials.

Print Material- Audio-visuals that are in books forms or paper such as books graphics, maps, pictures and photographs.

Usefulness: Any materials that stimulates teaching and learning environment.

Utilization: Application of Instructional materials in the classroom situation to make teaching more effective.

Chapter 1

INTRODUCTION

1.1 Background Information to the Study

Year after year there is a continuing process of changing. According to Ajayi et al (1988), due to technological advancement there has been changes in educational methods and materials. These changes throw challenge to education in particular to fulfil the need of changing society. Hence, Educational Institutions increase in student enrolment, new methods of teaching and so forth. In an attempt to solve these educational problems innovative approaches are being introduced and developed. One of such innovative approaches is the integration of instructional materials into the educational system, particularly in the Colleges of Education.

Presently, an urgent need calls for effective and frequent use of instructional materials in Teachers' Education. Owing to present advancement in education, a variety of instructional materials are therefore needed to support and improve teaching and learning activities in the Colleges of Education as profitable assets. Apart from listening to the teacher while teaching, students, can watch films filmstrips, slides, tape recorder, discs and many other projected materials.

In the past audio visual aids like radio were used in education to assist the teacher in motivating students or aiding the teacher to explain a complex idea or concept. Today audio visual materials are to improve and increase the efficiency of the teacher and the students learning process.

Business Education serves as a means by which an individual develops understanding and skills which enables him to enter business world and be self reliant. It has a very definite vocational objectives such as provision of training for specific type of jobs to develop and use these skills in environment of business.

The nation's new philosophy of education which is based on integration of the individual into a sound effective citizen makes it imperative for business education programme to reflect the new economic and social order as well as satisfy the societal needs and aspirations.

Developing the individual into a sound effective citizens would demand the use of appropriate resource materials applicable to the different competencies of business subjects. Oladunjoye (1981) observed that modern business office is changing rapidly as a result of advancement in technology.

The changing phase in office equipment and setting should be reflected in the programmes which have as their objectives the preparation of teachers who will in turn go out to prepare youths, for initial office employment.

The mission of teaching is to effect change in people. These changes can only come as a result of sincere understanding of teaching and learning situation. Abubakar (1984) stated that teaching and learning is a three way drama partnership: students being actors; instructional materials as the scripts that must be assimilated and acted upon, while the teachers are the directors or catalytic agents who bring the actor and the scrip together under the desire to create maximum performance. For this to happen, therefore, knowledge of instructional

materials is essential as this will give him (teacher) a wide choice of selecting appropriate material to use that will facilitate learning.

It is the researchers opinion that every business educator not only in Oyo and Osun States but all over the country (Nigeria) would recognise the importance of instructional materials and make adequate use of them in every classroom situation. Since instructional material is useful in teaching/learning situation and the production of properly trained and competent NCE (Business Education Teacher) is equally important. It is pertinent to find out how available and adequate the materials are for both teachers and students and the utilization of it.

1.2 Statement of the Problem

Experience has shown that when audio visual materials are used, students interest are aroused, the lesson becomes real, students participate more actively and retain much more than when other and more traditional method of instruction are relied upon solely.

The provision of instructional materials in the classroom will provide the students with learning experience which the lecture method or print only will not afford him. These materials are invaluable for enrichment purposes or for use with students who have poor educational background.

Business subjects are skilled oriented courses which need be taught using equipment as well as instructional materials. The teacher of business needs to adopt instructional materials to improve, to protect, to enlighten and broaden the learners scope thereby involving them in teaching and learning process, and

ensuring that the courses are taught according to the curriculum using equipment obtainable in the business cycle.

Application of instructional material though very important in the teaching and learning of business subjects is most neglected. One wonders, why much attention had not been given to the use of instructional materials in our colleges. Could it be that the teachers are not aware of the materials needed for their subjects?, where it can be collected or lack of appropriate knowledge of improvisation?. Is it that they themselves are not able to handle the available ones? Could it be that the students do not need any material to aid them? It is against this background that the present study seeks answers to the above questions.

1.3 Objectives of the Study

The objectives of this study are stated as follows:

1. To find out availability of the instructional materials for the teaching and learning of business education subjects in our colleges.
2. To enumerate how useful instructional materials are to the teaching and learning of business education subjects.
3. To examine how often teachers of business subjects use instructional materials while teaching.
4. To identify problems encountered while using instructional materials.
5. To find out steps taken to find solutions to the problems encountered while using instructional materials.

1.4 Research Questions

This study seeks to provide answers to the following questions:

1. What instructional materials are available for teaching and learning of business subjects?.
2. What are the roles of instructional materials in the teaching/learning of business subjects?.
3. How often do business education teachers use instructional materials while teaching?.
4. What problems are encountered by the teachers while using instructional materials?.
5. What steps are being taken in finding solutions to the problems encountered in the use of instructional materials?.

1.5 Null Hypotheses

This research work is centred around the following null hypotheses:

1. There is no significant difference in the mean score of responses of teachers and students as to the instructional materials available for the teaching/learning of business subjects.
2. There is no significant difference between the mean scores of the responses of the teachers and those of the students on the usefulness of instructional materials in the teaching and learning of business subjects.
3. There is no significant difference in the mean score of teachers and students as to how often the available instructional materials are used.

4. There is no significant difference between the mean scores of the responses of the teachers and students on the problems encountered by teachers in the usage of instructional materials while teaching?
5. There is no significant difference between the mean scores of the responses of the teachers and those of the students on the steps taken in finding solution to the problems encountered while using instructional materials.

1.6 Significance of the Study

Expectedly, this research work will be of advantage to the Ministries of Education in Oyo and Osun States which have established the Colleges of Education for the training of teachers. It will enable them to know the adequacies or otherwise of instructional materials in the school of Business Education. This study will be of benefit to the schools as they will be informed about the position of instructional materials for the teaching of business education subjects in order to find ways of improving the situations. This study will create awareness in the teachers and students as to the impact of instructional materials in teaching and learning process thereby making effective use of those that are available and make alternatives or improvised for those that are not available.

1.7 Assumptions of the study

The researcher makes the following assumptions:

1. The respondents will be truthful and faithful in their responses
2. The instruments for data collection will measure what they are supposed to measure.

3. The Colleges of Education is important to the states as it is the major source of training NCE (Business Education) teachers in the states.
4. Instructional materials used by teachers during lessons enhance effectiveness of instructional programme and promote interest in the learners.

1.8 Scope of the study

This study has as its focus the availability and uses of instructional materials in the teaching/learning of business education subjects in Colleges of Education in Oyo and Osun States. It is basically concerned with the frequency of use of instructional materials to the teaching and learning of business subjects. The study is limited to business education courses offered in the School of Business in the Colleges of Education of the two states. It is also limited to the teachers and students in the schools, non-academic staff working in the School of Business Education are not included. Furthermore, it is limited to the use of questionnaire as instrument for collecting data.

1.9 Limitations

The following limitations were noted for this study:

- (i) This study did not investigate the influence of exposure, gender, experience, background as well as environment on the use of instructional materials.
- (ii) The researcher has no control over the responses of the subjects used for this study.

Chapter 2

REVIEW OF RELATED LITERATURE

2.1 Introduction

The purpose of this chapter is to review the literature related to the topic under investigation. Literature will be reviewed under the following sub-headings: Historical Development of Business Education in Nigeria, Business Education Equipment and facilities, preparation of Business Education Teachers; Intrinsic and extrinsic values of Instructional Materials, Instructional Materials and student performances in examination, and availability of instructional materials in schools and colleges.

2.2 Historical Development of Business Education In Nigeria

According to Gana (1987) Business Education is as old as the history of education in the country (Nigeria). Ulinfun (1982) subscribes to this view when he observed that, 'no doubt, business education has been in existence since the birth of man, at least in an informal sense. In the pre-literate society up to the modern times people have used their business skills and knowledge informally acquired in prototype business institutions and transactions. They have always engaged themselves in production, exchange, storing, transporting and so forth.

No one can specifically state when the formal type of business education started in Nigeria.

Aina (1977) stated that prior to government involvement in business education, vocational education was left in the hands of private individuals who operates on profit basis. According to him,

the inability of private business schools to meet the upsurge demand for business training introduced business education into formal secondary schools education in Nigeria. When response from government did not supply the demand soon enough, private enterprises met the children by organizing profit making schools which remain the dominant influence in business education at both secondary and post secondary types of vocational training. As the economy expanded, urbanization brought more people from farms to cities, resulting in increase demand for clerical and office occupations with implication for education.

While tracing the inclusion of Business Education into Nigeria's educational system, Taiwo (1979) reported that, Business Education in Nigeria dates back to 1891 when McCallum recommended the inclusion of business education subjects in secondary school curricular. McCallum suggested, a curriculum embracing English, (including grammar) geography and history and commercial arithmetic. The recommendation above was with special reference to rapid calculation and abbreviation methods, geometry and geometrical drawing, mensuration, algebra, shorthand, and book keeping to be included in the school curriculum in the public school.

Aina (1977) further reported that, the Phelpsstroke funds of United States of America in 1920 in co-operation with the International Education Board, was set up by the colonial administration to formulate a policy on vocational education. This resulted in the subsequent establishment of the First Clerical Training Centre at Osogbo in 1930.

Omolola (1968), Fafunwa (1970) stated that, St. Andrew's College Oyo founded in 1896 was known to have taught among other things, simple accounting (book keeping) to teacher trainers, some who later, on their own learnt typewriting and shorthand during holidays.

Between 1940 and 1960 the missions, particularly, Roman Catholic, established schools for training girls as secretaries. In 1955, the secondary modern schools were introduced to give pre-vocational business training. Eight colleges were opened to train teachers at a cost between \$.5- \$1m. Cookey - Gam (1984) writing the history of various schools that started business education in Nigeria, stated that, in 1942 St. Paul's Commercial College Aba, and Central Commercial College Enugu were established to formally train pupils for clerical jobs. In the same year St. John Boscus College, Ubiaja was established followed by St. Augustine's Secondary Commercial School, Onitsha in 1947 and Secondary School of Commercial in Owerri 1948.

Aina (1977), Oladunjoye (1985) agreed that, between 1955 and 1958 government participation in business education become noticeable in the then Western Region. When in 1958 government sought the assistance of Ohio University, Athens, in the United States of America to provide high level manpower to teach in the secondary commercial schools already established. This led to the subsequent establishment of Technical Colleges now, The Polytechnic Ibadan and Adeyemi College of Education, Ondo as well as the Olunloyo College of Education Ibadan.

Fafunwa (1974) reported that, 'the Ashby Commission on higher education in Nigeria (1960) called for among other things professional education, to train people for subjects like accounting, business administration, insurance, banking and a sound professional education such as middle management and secretariat training'. This recommendation marked the commencement of direct government involvement in business education at the post-secondary institution such as polytechnics and the universities. The University of Nigeria Nsukka started training business education teachers at degree level in 1962; while Ahmadu Bello University Zaria joined in 1976. Other universities such as Benin, Port-Harcourt, River State University of Science and Technology and University of Cross River State, Uyo have had their business education programme approved by their respective senates and National Universities Commission and the programmes have taken off in various forms.

Some universities for example Ilorin, and Ile-Ife tried to run the business teacher education programme but could not take off due to some logistic reasons mainly finance (Aliyu 1995). The older universities, Nsukka and Zaria have started post-graduates programmes in Business Education up to doctoral level. While University of Benin is making effort to start her master degree in business education.

Aliyu (1995) opined that, most of the Nigerian's Polytechnics and Colleges of Technology are offering business administration courses with a few of them **running business teacher education programme.**

All the Federal Colleges of Education Technical at Yaba, Gombe, Portiskum, Gusau, Bichi and Asaba have business teacher education courses in their programmes. Some of the other Federal Colleges of Education and some State-owned Colleges of Education now have business education courses in their programme.

2.3 Business Education Equipment and Facilities

The importance of equipment and other classroom facilities in the teaching of skilled subjects such as business education subjects cannot be over-emphasized. Most business subjects are practical subject which no amount of theoretical work can produce efficient students without practical aspects of it. Teaching business subjects without equipment and materials would amount to teaching in abstraction which has no place in skill development. A good teaching method is less effective without appropriate instructional materials.

Many people have decried lack of equipment and instructional materials in our schools and colleges and have attributed the poor performances of students to this fact. Fafunwa (1970) agrees to this, while commenting on the problem of facilities, equipment and teacher thus.

... of all the educational problem that beset the African countries today none is as serious and as agonising as the competent teacher. The demand for more and better schools; the need of the child and his environment; the crying need for appropriate textbook and other instructional materials; the desirability of training in vocational and technical skills and indeed the overall problem of preparing future citizens of African who will be fully oriented to their environment cannot be effectively accomplished without the aid of competent teacher'.

Aremu (1977) in his study of business education in the secondary school of Western states of Nigeria (in United States of America), found that, there were no adequate office machines available for instructional purposes. He concludes his study by recommending that modern office machine should be provided in order to appraised students on their job roles. Okorie (1979) stated that, 'in most Nigerian schools one finds that essential materials are not available, hence many of the teachers resort to using whatever materials or equipment they can find to enable them teach a particular course(s) instead of a total cancellation of the course(s)'.

Obi (1990) observed that, equipment in schools are grossly inadequate. Supporting this view Akujobi (1981) concluded from his study that facilities, equipment and/or machine were insufficient and inadequate for instructional purposes, and, therefore, recommended that all Business/Commercial Education Schools should have adequate and up to-date equipment, machines and materials.

Anyaduba (1984) stressed that, the quality of instruction in business education has been hampered by inadequate facilities and equipment. Aliyu (1995) opined that the selection of facilities and equipment and media requires careful planning and consultation if the highest benefits are to be derived from their use. To obtain such benefits, criteria for selection of equipment have been suggested by William (1966) thus: Thus equipment;

1. should be representative of equipment in the employing business community.
2. should reflect trends in its use in the employing community.

3. should be appropriate and adequate for the instructional use of which it is to be put.
4. should be selected with a consideration for all costs factors not the unit price of the lowest ladder alone.
5. selection should be accompanied by teaching and learning aids to ensure its most effective use in classroom.

In addition to the above criteria, Aliyu (1995) observed that, a study of student need and those of the employing establishment served, may add to the efficiency of selecting and using of physical facilities and aids for instructional purpose.

All the above attested to the fact that business education subjects fall under vocational and technical education which is skilled oriented and as such equipment and materials are essential aspects of its instructional process. They seem to stress standard in the selection of equipment and materials, but this researcher feels that training of the teachers as to the technicalities involved in handling these instructional materials need be stressed also. If the teacher knows how to operate, what to operate and how to maintain these instructional materials he/she will not find it difficult to incorporate them into teaching/learning process.

2.4 Preparation of Business Teachers

Kinder (1965) opined that, 'the mission of teaching is to effect changes in people. These change can only come as a result of sincere understanding of teaching/learning situation. For the intended learning to take place, the teacher

must communicate effectively with the learner'. For this to happen, he contended that, 'the knowledge of instructional material is essential as this will give the teacher a wide choice of selecting appropriate material to use that will facilitate learning'.

Teaching to Akujobi (1981) is essentially a means of guiding students in securing the amount and quality of experience which will promote the optimum development of their potentials. He further asserted that:-

- - a child at birth is endowed with a lot of potentials and when directed the child develops specific potentials which is acceptable in his society. The quality of the guide or director (the teacher) in many cases determines the quality of the students. A qualified teacher will produce a qualified students while an unqualified teacher will produce his own kind.

Mays (1972) on teacher's roles describes the teacher as a kind of social catalyst and a promoter of social change in the deprived community. The extent of the varying public interest about the teachers' job is aptly conveyed in the following statements. By comparison with many other professional works the teachers' situation is one which a wide variety of people are interested in his performance of his role. These people have very diverse opinions as to how he should be carrying out his duties and what these duties ought to be. The Business Education teacher according to Mays (1972) is the key persons in Business Education programme. His primary role is that of aiding students in the development of actual literacy, occupational skills, desirable personality traits and related knowledge and competencies acceptable in the social environment.

Obikoya (1976) in his evaluative study of the validity of business education programmes in meeting the vocational business need of the graduants in the Western State of Nigeria revealed that, there was a shortage of qualified business education teachers in the then, Western State of Nigeria. As a result he recommended that business teacher education programme be established in Nigerian universities.

Commenting on the shortage or lack of adequate teaching staff Fafunwa (1976) reiterated that, great difficulties are encountered in providing adequate teaching staff at secondary schools. On the staffing position in our vocational schools, Aghenta (1982) holds the view that, 'one can safely conclude that the vocational schools lack experienced and specialist teachers who should know the advantages of practical skill training and use adequate training facilities in which students would be exposed to appropriate experiences.

The researcher, agree with that the observation made by Tonne and Nanassy (1970) as stated in Davies and Oladunjoye (1987) that business teachers are expected to have:

- i. the skills and attitudes for all educated persons;
- ii. competency in business or in some phase of it;
- iii. a knowledge of principle and methods of teaching; and
- iv. a general cultural education.

As a leader, the business teacher exemplifies in consumership. The business teacher plays an active role in community affairs and his appraisal of the job market in which students will seek employment, the importance of adequate

preparation of business teachers for their particular functions cannot be over-emphasized. Allen (1976) summarized the recommendation of a study entitled 'the requirement of teacher education in the next decade' which stated:

the teacher education institution begins to determine whether the traditional curriculum base; mathematics, science, english social studies, can adequately prepare students for our society. The commission would endorse efforts to develop new alternative curriculum models. For example, a curriculum might be organized around aesthetics technology, human relation and communication. Such a curriculum based should be just a part of general experience of the business teacher. The concentrated educational speciality of the business teacher includes the total talents in teaching for maximum occupational intelligence, expertness or skill and comprehensive appreciation of economics.

A strong case was, therefore made of the imperatives need for teacher education to include general education, specific specialized subject mastery and psychology and general education study. The U.S. National Association of Business Teacher Education Wolverson (1982) study guidelines included a list of the competencies a Business Education Teacher should possess as follows:

- i. understanding key concepts such as awareness of Business Education as guidance;
- ii. historical development of modern business education;
- iii. philosophy and objective of business education ;
- iv. the business teacher as leader of and a participant in business;
- v. population and occupational foundation of business education;
- vi. related general education foundation and phases of business education;
- vii. work experience in business education;
- viii. evaluation of business education by various groups;

- ix. guidance and counselling foundation of business education;
- x. basic factors to consider in curriculum plan, and
- xi. curriculum planning in various types of educational institution.

The furtherance of these skills and abilities as observed by Haward (1965) will of course prepare business teacher to teach effectively and have a definite place in their college preparation.

In order to be effective, a teacher has to know more than the subject matter, to qualify to teach a skill subject, teachers should possess the knowledge, skills and the attitudes desired of all educated persons as well as adequate knowledge of his/her students. A teacher should therefore, keep abreast with new techniques, skills and research developments in his field, as this will certainly help him in his daily activities in the classroom.

2.5 Intrinsic and Extrinsic Values of Instructional Materials

The emphasis placed on the importance and the need of instructional materials in teaching by educators, psychologists and field teachers has been established by researchers. Marvin (1973) subscribes to this, when he stated that 'it has been proved that instructional materials can be used effectively not only in classroom teaching, but also in informal and non-formal education such as in health education for the masses, open education, agriculture education to farmers, public enlightenment, industrial and military training to mention a few'. In other words instructional technology has transformed educational opportunities in both the developed and the third world countries.

Fafunwa (1986) in the discussion of the application of modern techniques in teaching noted that:

the realities of the problems involved in trying to provide quality education side-by-side with expansion in educational opportunities in Nigeria have become more evident today. With the new system in our educational system (6-3-3-4) schools and colleges have witnessed an astronomical increase in enrolments but the number of qualified teachers have not kept pace with the students' population. With the desire therefore, to provide quality education there is the need for the government to intensify its efforts towards the use of modern techniques in teaching. Teachers have learnt that the art of teaching requires, knowledge of how to produce, select, an appropriate instructional materials in order to better explain new subjects contents that modern development demands.

If more senses are involved in the learning of a concept, it is more likely that it will be remembered longer. Patterson (1962) confirms this, when he asserted that, 83% of information is received through sight and that 50% of information both seen and heard is remembered in contrast to 20% of information heard only. Instructional materials are used in raising the quality of instruction. Supporting this view, Schramm (1977) wrote:

'The developing countries in particular have seen 'new media' as a way to raise the quality of instruction faster than it could be raised by increasing and upgrading the teacher corps, to supplement even good teaching, with learning experiences impossible to create locally and to extend the teaching of education to areas where schools and teachers are not otherwise available'.

Erickson (1965) listed six advantages in using educational media in education thus:

- i. Instructional media provide the teacher with the means of extending the horizon of experience. This means that students are provided with first-hand experience even while sitting in the classroom. They;

- ii. provide meaningful sources of information.
- iii. provide the teacher with interest compelling springboards into a wide variety of learning activities.
- iv. assist the teacher in overcoming the physical difficulties of presenting subject matter.
- v. provide the teacher with rich sources of students' purpose when communicative materials are used.
- vi. provide the teacher with a lot of tools to carry out diagnostic research and remedial work demanded by up-to-date instructional purpose.

Hawkrige (1966) and Schramm (1977) conducted many researches on Instructional Television, programmed instruction and film, instructional radio and on the simplest media such as filmstrips, slides and audio tape. The findings emphasize the value of these materials and equipment in teaching and learning process.

The rationale for use of instructional materials is based upon the obvious fact that no one medium of communication is adequate for the task of providing information and concepts which are unambiguous to students. Only the use of a wide variety of materials - the multi media approach - can ensure that the weakness of any given type of material will be compensated for by the strengths of one or more of the other materials.

Subscribing to this Soremekun (1975) stated that,

'- - research concerning the use of various learning resources has resulted in the general conclusion that where audio-visual materials are used, learning environment is highly stimulating and the students appear to take a greater interest in learning - such materials are

invaluable, for enrichment purposes or for use with students who have had poor educational background.

Anything that facilitates teaching/learning activities should be used at every level of education. Instructional materials have been found to be facilitators of learning, hence their use should be encouraged and emphasized especially in skill oriented subject like Business Education subjects.

The researcher subscribed to the statement made by Agun (1976) after a research work on importance of audio visual instruction in the Associateship Diploma in Education in Nigeria University that, 'a teacher can use teaching aids in various ways to make his instructional effort more productive in terms of students learning and growth'. The teacher can, for instance, use them to arrest and sustain attention to help him present facts and information, teach concepts and principles, guide thinking and induce transfer of learning. Similarly, the present study seeks to examine the importance of instructional materials to the teaching and learning of business subjects.

Medahunsi (1981) used four secondary schools in Ogun State, Nigeria for an experimental research, in his investigation on instructional media Dilemma. Utilization of Audio-Visual materials. Two schools were taught with audio - visual materials while the other two were taught without audio - visual, two types of test items were given to both groups of schools, before and after the exposure. The findings reveals that the students taught with audio visual materials performed better than those that were taught without audio-visual materials. Hence, he concludes that:

- i. audio visual materials can increase learning by helping to arouse and sustain interest, motivate, present information in a variety of ways and provide the kind of experiences which allow for the transfer of knowledge and skills to a new tasks.
- ii. because of the visual experience and the interest created from such a presentation, the media can also enable students to learn more and remember a larger amount for a longer time than similar students taught without instructional materials.
- iii. Instructional materials offer todays educators some unique capabilities for meeting the problems of the increasing population.

Commenting on the need for instructional materials in classroom, Awoniyi (1988) opined that, instructional materials cannot only simplify many aspects of study but can also quicken the interest and widen the experience of the students. He further stated that the Committee of the National Society for the study of Education reviewed the accumulated research in audio-visual education in 1949 and reported that research supports the following claims for properly used of materials. They;

- (1) supply a concrete basis for conceptual thinking and hence reduce meaningless word responses of students.
- (2) have a high degree of interest for students.
- (3) supply the necessary basis for developmental learning and hence make learning more permanent.
- (4) offer a reality of experience which stimulates self-activity on the part of students.

- (5) develop a continuity of thought; this is especially true of motion pictures.
- (6) contribute to the growth of meaning and hence to vocabulary development, and
- (7) provide experiences not easily secured by other materials and contribute to the efficiency, depth, and variety of learning.

In the same vein Dike (1994) outlined eight contributions of audio-visual resources to education generally. This include, stimulating experience, basing learning experience in sense experience, providing sources of information, extending experience, individualising instruction, providing tools for diagnostic and remedial work, affording students an-active role and making learning permanent. instructional materials increase learning effectiveness since learners are more likely to retain and recall with ease a greater percentage of what they hear, see and manipulate, at the same time the rate of learning can be increased.

If instructional materials is so vital to teaching/learning process like these, the researcher, looking at the main objectives of business education which is the acquisition of basic skills to function in the world of works, is of opinion that business education will benefit immensely. If appropriate instructional materials are used effectively, several teaching sections whereby students themselves participate and interact with these materials will make them have some sense of self-fulfilment and self direction which will go in no small measure to prepare them for the world of works which business education subjects suppose to give.

2.6 Instructional Materials and Students Performance in Examination

It is tradition to blame students who fail their examinations. In this respects students have often been treated as scape goats. Teachers, too, are not spared, they have always been blamed for the performance of students. Recent research findings revealed however, that the performance of students in any examination is a function of many variables.

It has been shown that lack of use and non-availability of instructional materials in our schools rank high among those factors which deter the educational progress of students. Idowu (1974) and Shodeinde (1976) in their separate research, investigated on the use of non-projected audio-visuals in the teaching of history in the post-primary institution in Zaria town. They observed that, most of the teachers were not experienced in the handling of audio-visual equipment in their classroom teaching. They also noted that some of the materials like maps, and charts being used in the schools were old and out-of-date. They noted and confirmed that audio-visuals in teaching allowed for easier comprehension and clearer understanding.

Akolo (1976) asserted that only 10% of those who go to primary schools are successful in the common entrance examination to secondary school. According to him, this is as a result of failure of most teachers to employ instructional materials while teaching. Ji (1978) subscribes to this, when he reported that 89% of students in the study he carried out in Gboko, Benue State confirmed that the teacher did not use any audio-visual materials while teaching.

Similarly, Bobini (1978) in her study on the availability of audio-visual aids in teaching English in post primary institutions in Zaria revealed that 61.5% of the teachers used only textbooks and the chalkboard in teaching. The study also revealed that only about 15.4% of the teachers made word-cards and flash-cards with their students. Iwoh (1978) on the uses of audio-visual in selected Teachers Training Colleges in Kano State stated that, audio visual forms an integral part of teaching and learning process: When it is applied, learning becomes greatly stimulated and students appear to develop keen interest in learnings.

Abdullahi's (1987) study on the utilization of instructional media in selected Grade II Teacher Training Colleges in Kaduna State confirms the findings of other researchers before him. His stated objectives for the research was to find out whether instructional media were available in the colleges, the problem of physical facilities for their use and administrative problems within the school. The researcher used two sets of questionnaire. The test items in the questionnaire were both structured and unstructured. The data collected were analysed using percentages. He stressed that, the problems that were related to the students learning including, insufficient facilities, poor management of the allocation for the purchase of teaching equipment and materials, inadequate human resources, lack of human relation between parents and principal. Based on these findings, he recommended that, more instructional equipment and materials be supplied to the colleges, that the damaged ones should be repaired, the lock-up ones be made available for the use of teachers and students. The weakness of Abdullahi's study are, first, he did not state whether the hypotheses of the study were null or

alternative, instead he mixed the hypotheses as null and alternative. Secondly, the sampling technique used to select the respondents were not explained, these make the conclusion based on the responses questionable.

Abdullahi's research is related to this study in that, the two projects centered around teachers' education, but the level of training differs in the sense that this present one is directed towards NCE teachers; whereas his, was directed towards Grade II Teachers.

If this condition of lack of instructional materials and ineffective use of the available ones is not attended to on time students performances in examinations will continue to be poor.

2.7 Availability of Instructional Materials in Schools and Colleges

The type and amount of instructional materials available or expected in a school and their appropriateness or relevance to teaching/learning process should be the concern of the Ministry of Education using the guideline stipulated by the National Commission for Colleges of Education (NCCE). Kahl (1966) subscribes to this, when he stated that, 'since materials and equipment are the tools by which teacher tries to improve the teaching and learning process, these tools must be provided for by the school at the right time and place, so that teacher can teach effectively'.

Taidi (1978) in her study of availability of audio-visual materials in the teaching of English Literature recommended that the number of students in a

particular class or stream should be proportionate to the available teaching facilities and materials so as to guarantee effective usage.

Bekaiye (1979) used 10 secondary schools in Lagos and Kwara States to investigate the use of audio-visual materials in teaching typewriting and shorthand. 5 schools each from the two States were used. Research questions were formulated, the instrument used for data collection were questionnaire and structured oral interview with tables and percentages as tools for data analysis. The findings revealed:

- (i) Inadequacies of audio-visual materials in the selected schools.
- (ii) The few ones available were not extensively and effectively used.
- (iii) Lack of time and electricity poses problem to usage.

Similarly, Ike (1980) conducted a research on factors affecting the use of instructional materials in the classroom teaching in schools and colleges in Imo State. The Institutions were grouped into schools and Colleges with population of 500 and under and schools and colleges with population of over 500. He came out with comparative analysis of the schools as follows: Institutions with students population of above 500 have more maps, globes diagrams, chart, bulletin boards, graphs, models, radio sets, television, flat pictures, etc than those with students population of 500 and under.

- (ii) There were more posters, slide projectors, records players, cartoons and overhead projectors in those institutions with students population below 500 than in those institution with population above 500.

- (iii) It was also revealed that there were general insufficient instructional materials in schools and colleges in Imo State and that the size of the institution did not necessarily influence the availability of instructional materials in such institution.

On frequency of use of instructional materials Ike (1980) revealed that, the available materials in the schools were not employed in teaching learning process. In the present study the availability of instructional materials will be examined in line with the standard set for colleges of Education by the National commission for Colleges of Education.

A related study was carried out by Bala (1983) on the availability and utilization of non-print instructional media at Ahmadu Bello University, Zaria, Nigeria, in Wisconsin, United States of America. He used simple random sampling to select 300 respondents for his study. He used 9 faculties out of 11 Faculties at ABU then. The questionnaire used for data collection was a modified version of the one used by Famokogbon in a similar study. Though the researcher analysed his data descriptively using tables and percentages and did not formulate any hypothesis for his study, of significance is the finding that 31.4% of the respondents said the media were available in their department and the rest 23.2% said they were not even familiar with the media listed. Despite the fact that there were considerable number of non-print instructional media in the University, the data revealed that, those which were available were not being used for teaching, as 72% of the respondents indicated to have never used any media in teaching.

The Bala's study was similar to this as both studies sought to discover the availability and uses of instructional materials in educational institution in Nigeria. However, there were a number of differences, while Bala's study was directed toward University this study is directed toward Colleges of Education. Moreover, Bala's study covered a part of instructional material which is non-print media. This study however, grew up as a result of the call from Bala's study asking for research works in the availability and utilization of instructional materials in Nigerian Institution of higher learning (Colleges of Education inclusive).

Abdulwahab (1984) on availability and utilization of print and non-print instructional materials in Technical and Vocational schools in Sokoto State, Nigeria developed and use two set of questionnaires as instrument for data collection for principals and teachers, the data were analysed using percentages. The findings revealed also that, print and non-print instructional materials are not available in Technical and Vocational Institution in Sokoto State. Few available ones are effectively utilized and most of them were imported from outside the country. In the present study the students are included, taking into consideration their significance in the teaching/learning situation, which is lacking in Abdulwahab's study.

In a survey of audio-visual materials in Post-Primary Institution in Kaduna State conducted by the Institute of Education, Ahmadu Bello University, Zaria (1984). It was revealed that only two Colleges have flannel board, most schools have bulletin board in their classrooms, but they were not fully utilized. In some

schools and colleges, some equipment and materials are locked up in the store and used occasionally in teaching/learning process.

Aliyu (1995), used stratified random sampling of 372 students, 118 principals of secondary schools, 52 Business Education teachers and 4 Ministry of Education officials giving a total of 546 respondents. The null hypotheses formulated for the study were tested using chi-square statistical technique, the study revealed among its findings an inadequate provision of materials equipment and infrastructure in most schools by the appropriate authorities.

In order to enhance the study of business education subjects, there is the need for adequate supply of physical facilities, equipment as well as other instructional materials as these will afford students to be taught with the right equipment and materials. The Federal, State and local governments, as well as the parents and Teacher's Association, coupled with individuals, groups, organisations and philanthropist should rally round to solve this problem of inadequacies of teaching/learning facilities.

Chapter 3

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

In this chapter, the design of the study is discussed, the population and the sample for the study were described. Also discussed are the instruments for collecting data, and data gathering procedure.

A pilot study on the research was carried out, the data analysis technique employed for the study were also presented.

3.2 Research Design

The research method used in this study was survey. In doing this a two group design was adopted with the first group being the teachers while the students formed the second group. The survey method was adopted because the information required for the study are already in the colleges, so what the researcher did was to measure (survey) the appropriateness or otherwise of the available information/materials.

3.3 Population for the Study

The population of this study comprises of (16) teachers and 850 students in the school of Business Education in Colleges of Education at Ilesa in Osun State and St. Andrew's College of Education Oyo in Oyo State.

3.4 Sample Size and Sampling Procedure

In educational research, it is not always possible to manipulate a whole population especially if such population is very large. Afolabi (1993) explains that since most educational phenomena consist of large number of units, an investigator cannot always interview, test or observe each unit.

For this research, all the teachers (16) in number teaching in the school of Business Education were used as the sample. For the students, (265) out of (850) formed the sample. This is as recommended by Krejcie and Morgan (1970) in the table for determining sample size from a given population.

Two types of sampling procedures were used to draw the samples for the study. These include proportional sampling which involves selecting units at random from each stratum (level) in proportion to actual size of the population, and the simple random sampling technique in which each member of the population has an equal chance of being selected to represent the population. This was done by the use of hat drawn method. This technique was used to select the respondents in each of the levels of the students. The two sampling procedures are used because of the different levels involved.

Table 3.1 Population and Sample size per level

Level	POPULATION		SAMPLES	
	Oyo	Ilesha	Oyo	Ilesha
NCE I	90	115	28	36
NCE II	173	224	58	70
NCE III	103	145	32	45
TOTAL	366	484	114	151

3.5 Instrument for Data Collection

The instrument used for data collection was questionnaire. Questionnaire was used because it was possible to administer it to a large group simultaneously as the two schools are not in same place. Other reasons for using questionnaire for this research was that questionnaire is considered more reliable as the information collected from the respondents are considered as genuine because he/she puts them into writing himself or herself. By that the possibilities of doubting of facts and ambiguity are erased.

Two separate sets of questionnaire was administered, one for the teachers and the other one for students. Both sets of questionnaire are in four sections. Section A contains bio-data, section B contains statement on availability and utilization of instructional materials in the teaching and learning of business subjects which the subjects responded to, section C, deals with measures taken to find alternatives to foreign produced instructional materials.

3.6 Pilot Testing of the Instrument

The instrument was developed and validated by professionals in the field of Business Education. Also the supervisor of this research work, did some work while the instrument was being developed. Consequence upon the comments and recommendations of these professionals, some adjustment were made on some items of the questionnaire. In addition, a pilot test was carried out using teachers and students of Federal Government College Technical, Bichi, Kano State which is a

similar institution to the one used in actual study, 15 students and 5 teachers responded to the items.

In the course of computing the reliability coefficient of the instrument, some of the items were rated low and so had to be replaced while others were amended.

The reliability estimate of 0.83 was arrived at using Spearman-Brown formular. The figure arrived at according to Spearman-Brown formular is highly reliable.

3.7 Procedure for Data Collection

During the process of administering the instruments, the researcher was personally involved assisted by some teachers in the two Colleges of Education. The students were made to understand the purpose of the exercise and were also assured of confidentiality of the information they would provide. The respondents were then given enough time to complete the questionnaire after due clarification had been made. All the 16 copies of the questionnaire filled by the teachers and 265 copies filled by the students were collected back by the researcher and were used for the study.

3.8 Data Analysis

Frequency distribution and percentage analysis of data were used in this study. The data collected were analysed using t-test statistical technique. This was used for analysing the data because it seeks to establish differences between the

means of two variables. The analysis was done with the help of computer at the Data Processing Unit of the Institute for Agricultural Research (IAR), ABU, Zaria.

Rejection or retention of the null hypothesis were at 0.05 level of significance.

Chapter 4

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter presents the description of the analysis and discussion of findings. The five null hypotheses were tested using *t*-test statistic. After testing the hypotheses, the results and discussion of the findings were then presented. A significance level of 0.05 was used as basis for rejecting or retaining the hypotheses.

4.2 Data Analysis

Two schools, one in Osun State and the other one in Oyo State are involved in the study. Eight teachers were taken from each of the schools. The total number of students taken from the two schools were two hundred and sixty-five (265). Out of this, one hundred and fifty one (151) or fifty seven percent (56.98%) were from Osun State while the remaining one hundred and fourteen (114) or forty-three percent (43.02%) were from Oyo State College of Education. Among the teachers 13 were males while the remaining three (3) were females. There were eighty-nine males students (89) and one hundred and seventy six (176) females students.

Fifty percent of the teachers involved in the study had Master Degree which were either M.A. or M.Ed. Twenty five percent (25%) had Bachelors degree which were either B.Sc. or B.A. or B.Ed while only one teacher had M.Sc. and Ph.D with two having the H.N.D. as their highest qualifications. Forty-four percent

(43.8%) of the teachers have 15 years and above experience on the job while thirty-one percent (31.3%) have served within ten and fourteen years. The remaining twenty-five percent (25%) were between nine and thirteen years. On the part of students forty-seven percent (46.8%) were in part two, twenty-nine percent (28.7%) were in part three, while twenty-four percent (24%) were in part one.

An assessment of the availability and utilization of instructional materials was carried out in section B of the questionnaire. The responses of both the teachers and the students on available instructional materials in the two Colleges are tabulated in frequencies and percentage in the table below:

Table 4.1: Availability of Instructional Materials Per College

Instructional Materials	OSUN STATE COLLEGE OF EDUCATION, ILESA										ST. ANDREW'S COLLEGE OF EDUCATION, OYO									
	TEACHERS					STUDENTS					TEACHERS					STUDENTS				
	Available		Not Available		Available		Not Available		Available		Not Available		Available		Not Available		Available		Not Available	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
a	7	87.5	1	12.5	100	66.2	51	33.8	6	75	2	25	78	68.4	36	31.6				
b	8	100	0	-	120	79.5	31	20.5	8	100	0	-	76	66.7	38	33.3				
c	6	75	2	25	80	53	71	47	5	62.5	3	37.5	60	52.6	81	47.4				
d	3	37.5	5	62.5	76	50.3	75	49.7	1	12.5	7	87.5	57	50	57	50				
e	2	25	6	75	70	46.4	81	53.6	4	50	4	50	54	47.4	60	52.6				
f	1	12.5	7	87.5	48	31.8	103	62.2	0	-	8	100	20	17.5	94	82.5				
g	0	-	8	100	50	33.1	101	66.8	0	-	8	100	30	26.3	84	73.7				
h	2	25	6	75	76	50.3	75	49.7	3	37.5	5	62.5	50	43.9	64	56.1				
i	5	62.5	3	37.5	69	45.7	82	54.3	5	62.5	3	37.5	50	43.9	64	56.1				
j	7	87.5	1	12.5	80	53	71	47	6	75	2	25	30	26.3	84	73.7				
k	3	37.5	5	62.5	64	42.4	87	57.6	4	50	4	50	40	35.1	74	64.9				
l	0	-	8	100	47	31.1	104	68.9	0	-	8	100	40	35.1	74	64.9				
m	1	12.5	7	87.5	56	37.1	95	62.9	0	-	8	100	35	30.7	79	69.3				
n	1	12.5	7	87.5	64	42.4	87	56.6	1	12.5	7	87.5	42	36.8	72	63.1				
o	0	-	8	100	87	57.6	64	42.4	0	-	8	100	34	29.8	80	70.2				

LIBRARY

From table 4.1 above, one could make an inference that instructional materials such as Tape recorder, opaque projector, overhead projector, slides and filmstrips, motion picture and audio tape recorder are almost non-existent in the two schools. Although this study is purely a descriptive rather than a comparative one, yet there is no significant difference in terms of the available instructional materials in the two colleges. However, while teachers in Osun State College of Education scored overhead project was 12.5%, teachers in St. Andrew's College score was none at all (0%).

Another significant finding revealed by this study as indicated in table 4.1 is that students population has nothing to do with the number of instructional materials. This could be seen in the case of the two Colleges with population of (484) and (366) respectively and having the same type of materials.

The general condition of textbooks and chalkboard in the responses of the groups in the table shows that the schools were not lacking in the mentioned items. This could be seen in the table. However, the teacher responses on the availability of pictures and photographs was not encouraging as could be seen from expressed frequencies on the table. The responses of the students tended to portray a near adequate situation of the mentioned items. This same expression could be noticed in the case of charts availability in the schools. Majority of the teachers and students were of the opinion that Television set were not adequately provided in the two schools. The case is the same for slides and filmstrips as shown in the table. However, most teachers and students felt that posters were adequately supplied to the schools.

Based on these findings, it is crystal clear that instructional materials are lacking in the school of Business of the two Colleges. This findings tends to confirm similar findings by Medahunsi (1982) in his study of four schoos in Ogun State. Hawkrige (1966) and Schramm (1977) also came out with similar findings in their study.

Apart from the adequacy or otherwise of these instructional materials, the researcher, also, investigated the frequency of use of the available instructional materials in the schools. Table 4.2 shows the frequency of use as expressed by the two groups. The options "very often and, 'often' were added together while 'sometimes' and 'rarely' were added together for 'not often'.

Table 4.2: Use of Instructional Materials in the Colleges

Instructional Materials	OSUN STATE COLLEGE OF EDUCATION, ILESA						ST. ANDREW'S COLLEGE OF EDUCATION, OYO									
	TEACHERS			STUDENTS			TEACHERS			STUDENTS						
	Often used		Not Often used	Often used		Not Often used	Often used		Not Often used	Often used		Not Often used				
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%				
a	7	87.5	1	12.5	9	6	142	94	7	87.5	1	12.5	8	7	106	93
b	4	50	4	50	51	33.8	100	66.2	5	62.5	3	37.5	52	45.6	62	54.4
c	7	87.5	1	12.5	90	59.6	61	40.4	6	75	2	25	67	58.8	47	41.2
d	3	37.5	5	62.5	54	35.8	97	64.2	3	37.5	5	62.5	60	52.6	54	47.4
e	2	25	6	75	68	45	83	55	2	25	6	75	40	35.1	74	64.9
f	3	37.5	5	62.5	49	32.5	102	67.5	2	25	6	75	50	43.9	64	56.1
g	0	-	8	100	31	20.5	120	79.5	1	12.5	7	87.5	31	27.2	83	72.8
h	6	75	2	25	37	24.5	114	75.5	4	50	4	50	28	24.6	86	75.4
l	1	12.5	7	87.5	27	17.9	124	82.1	0	-	8	100	27	23.7	87	76.3
j	0	-	8	100	39	25.8	112	74.2	0	-	8	100	31	27.2	83	72.8
k	0	-	8	100	08	5.3	143	94.7	0	-	6	100	10	8.8	104	91.2
l	2	25	6	75	25	16.6	126	83.4	2	25	6	75	35	30.7	79	69.3
m	0	-	8	100	41	27.2	110	72.8	0	-	8	100	30	26.3	84	73.7
n	3	37.5	5	62.5	49	32.5	102	67.5	3	37.5	5	62.5	40	35.1	74	64.9

From the above table the teachers responses on the use of textbooks in the table is in contrast with that of the students. While majority of the teachers said that textbooks were often used, almost the same percentage of the students respondents said that textbooks were not often used in the schools. There was an equal division of the teachers on the use of posters in the schools but the students tended to favour the fact that posters were being used as instructional material. Majority of respondents in the two groups agreed that the chalkboard is often used as instructional materials in the two schools.

Bulletin board, picture and photographs charts including Television are rarely used as instructional materials in the schools, this situation probably arise because of the inadequacies of such items in the schools.

However, there was a sharp contrast in the group responses on the use of stop watch in the affected schools. While majority of the teachers said that stop watch were used, majority of the students had a contrary opinion. Both group agreed that overhead projectors, opaque projectors and audio tape recorder were rarely used in the schools. All the teachers said that motion picture were never used. This fact was collaborated by seventy-three percent (73.2%) of the students who said that motion picture were rarely used as instructional material in the schools.

The likely problems encountered while using instructional materials in the schools were also investigated by the researcher. This was the last part of section B in the questionnaire used for the study. The probable problems as perceived by the respondents in frequencies and percentages are shown in table 4.3.

Table 4.3: Perceptions of Problems Encountered in the Use of Materials

Problems Encountered in the Use of Instructional Materials	OSUN STATE COLLEGE OF EDUCATION, ILESA						ST. ANDREW'S COLLEGE OF EDUCATION, OYO									
	TEACHERS			STUDENTS			TEACHERS			STUDENTS						
	Agreed Freq.	%	Disagreed Freq.	%	Agreed Freq.	%	Disagreed Freq.	%	Agreed Freq.	%	Disagreed Freq.	%				
a	3	37.5	5	62.5	55	36.4	96	63.6	4	50	4	50	43.1	64	56.1	
b	3	37.5	5	62.5	68	45	83	55	3	37.5	5	62.5	40	35.1	74	64.9
c	7	87.5	1	12.5	75	49.7	76	50.3	6	75	2	25	77	67.5	37	32.5
d	5	62.5	3	37.5	80	53	71	47	6	75	2	25	70	61.4	44	38.6
e	7	87.5	1	12.5	67	44.4	84	55.6	7	87.5	1	12.5	70	61.4	44	38.6
f	4	50	4	50	71	47	80	53	5	62.5	3	37.5	67	58.8	47	41.2
g	3	37.5	5	62.5	60	39.7	91	60.3	1	12.5	7	87.5	50	43.9	64	56.1
h	0	-	8	100	42	27.8	109	72.2	1	12.5	7	87.5	50	43.9	64	56.1
i	1	12.5	7	87.5	40	26.5	111	73.5	0	-	8	100	50	43.9	64	56.1
j	6	75	2	25	45	29.8	106	70.2	6	75	2	25	40	35.1	74	64.9

It could be seen from the above table that both teachers and students agreed that lack of the students' interest was a major problem in the use of instructional materials in the schools. Neither did the two agreed that lack of time could have been a problem. However, too many students in the class was seen by both groups as a major problem encountered in the use of instructional materials. Lack of stable electricity, too much work load for the teacher were seen as problem to the use of instructional materials coupled with this is the inadequacy of audio-visual materials which the respondents felt is a limiting factor in the use of instructional materials. Majority of students thought that some teachers do not know the functions of some of these instructional materials. This was in contrast with the teachers opinion that this was not really the problem.

In section C of the questionnaire, the responses of the respondents on usefulness of the instructional materials was examined. Table 4.4 shows the frequency and percentage distribution of the two groups on the listed instructional materials.

Table 4.4: Usefulness of Instructional Materials in the Colleges

Instructional Materials		TEACHERS				STUDENTS			
		Useful		Not Useful		Useful		Not Useful	
		Freq	%	Freq	%	Freq	%	Freq	%
a.	Textbooks	14	87.5	2	12.5	143	54.0	122	46.0
b.	Chalkboard	15	93.7	1	6.2	175	66.0	90	34.0
c.	Bulletin Board	13	81.2	3	18.8	133	50.2	132	49.8
d.	Picture and Photograph	12	75.0	4	25.0	151	57.0	114	43.0
e.	Charts	12	75.0	4	25.0	130	49.1	135	50.9
f.	Television	11	68.8	5	31.2	121	45.7	144	54.3

Instructional Materials		TEACHERS				STUDENTS			
		Useful		Not Useful		Useful		Not Useful	
		Freq	%	Freq	%	Freq	%	Freq	%
g.	Slides and Filmstrip	11	68.8	5	31.2	101	38.1	164	61.9
h.	Posters	11	68.8	5	31.2	87	32.8	178	67.2
i.	Demonstration Stand	13	81.2	3	18.8	115	43.4	150	56.6
j.	Stop Watch	13	81.2	3	18.8	112	42.3	153	57.7
k.	Audio Tape Recorder	11	68.8	5	31.2	99	37.4	166	62.6
l.	Opaque Projector	9	56.2	7	43.8	97	36.6	168	63.4
m.	Overhead Projector	10	62.5	6	37.5	119	44.7	146	55.1
n.	Audio Tape Recorder	9	56.2	7	43.8	150	56.6	115	43.4
o.	Motion Picture	10	62.5	6	37.5	177	66.8	88	33.2

From table 4.4 above, the two groups agreed that textbooks, chalkboard, bulletin board, pictures, and photographs, audio tape recorder and motion pictures are very useful for instruction in the schools. The consensus could be attributed to the awareness and exposure of the named items in the society by the students and the teachers. They could therefore visualize their usefulness as instructional materials even when they were not available in the affected school.

The responses of the students and the teachers to the following items do not tally, charts television, slides and filmstrip, posters and demonstration stand, opaque projector, overhead projector and tape recorder while the teachers agreed that these materials were very useful for instructions in schools. The students responded negatively. This may probably be due to lack of students exposure to their usefulness as they have never come across/experienced it in their learning activities. As noted earlier on, most of these items were lacking in the schools. There is a possible obscurity to their usefulness among the students.

The next set of questions were aimed at examining the importance of instructional materials in the affected schools. Table 4.5 shows the frequency and percentage of respondents agreement or disagreement.

In table 4.5 the strongly agreed and agreed option were merged together while disagreed and strongly disagreed were merged together for agreed and disagreed respectively.

Table 4.5: Importance of instructional materials in Colleges

Questions on the Importance of Instructional Materials		TEACHERS				STUDENTS			
		Agreed		Disagreed		Agreed		Disagreed	
		Freq	%	Freq	%	Freq	%	Freq	%
a.	Instructional material are essential in teaching Business Subjects.	14	87.5	2	12.5	42	15.8	223	84.2
b.	Use of instructional materials make learning shorter	14	87.5	2	12.5	191	72.1	74	27.9
c.	Audio visual improves students performance.	14	87.5	2	12.5	195	73.6	70	26.4
d.	Use of instructional materials makes students learn more.	11	68.8	5	31.2	166	62.6	99	37.4
e.	Instructional materials have negative effects on performance.	5	31.2	11	68.8	101	38.1	164	61.9
f.	Instructional materials are aids to learning rather than learning.	13	81.2	3	18.8	153	57.7	112	42.3
g.	Instructional materials aid teaching.	14	87.5	2	12.5	175	66.0	90	34.3
h.	Provision of instructional materials will enhance acquisition of skills.	14	87.5	2	12.5	197	74.3	68	25.7

The centrality of instructional material to the teaching of business subjects was affirmed by the teachers responses shown in the table. The students do not seems to share this view as could be seen by their negative response to the

question. Both respondents agreed that permanent learning duration could be shortened by the use of instructional materials; such use it could be argued, may improve the students performances and students could learn more in the classrooms. The respondents disagreed that the use of instructional materials have negative effects on the students performance. Rather they agreed that instructional materials were aids to learning and that such materials assisted teachers of business subjects to carry on their task more efficiently. The respondents also believed that the provision and adequate use of instructional materials could enhance students performance, acquisition of skills and other necessities for business subjects.

The last section of the questionnaire examined the respondents perceived solution to the problems encountered in the use of instructional materials in the schools. Table 4.6 shows the percentage and frequency of agreement and disagreement to the suggested solution by the respondents.

Table 4.6: Solutions to the problems on the use of Instructional Materials in Collges

Suggested Solutions to the Problems		TEACHERS				STUDENTS			
		Agreed		Disagreed		Agreed		Disagreed	
		Freq	%	Freq	%	Freq	%	Freq	%
a.	Business teachers should be encourage to improvise.	13	18.2	3	18.8	177	66.8	88	33.2
b.	Funds must be made available for improvisation by government.	14	87.5	2	12.5	180	67.9	85	32.1
c.	Audio-visual workshop is to be organised for business teachers.	14	87.5	2	12.5	168	63.4	97	36.6
d.	Teachers and students to cooperate in the improvisation.	12	75.0	4	25.0	163	61.5	102	38.5
e.	P.T.A. to provide materials & funds for improvisation.	7	43.8	9	56.2	121	45.7	144	54.3

The respondents felt that for efficient and effective improvisation, the teacher requires encouragement in terms of funds and materials. The funds they seem to agree should come from the government. Both students and teachers should work in co-operation for proper improvisation. These could be seen from the relatively higher percentage for agreement for the relevant questions in the table.

4.3 Testing of Null Hypotheses

Five null hypotheses were formulated and tested in the study. These were aimed at examining the availability of instructional materials and the frequency of their uses and their perceived importance. The problems encountered in their uses were also investigated.

The t-test statistical technique was used for these tests. The use of this procedure was informed by the need to test for differences between the means of two independent variables. The t-test according to Roscoe (1969) is the most suitable statistical method for this purpose.

Null Hypothesis I:

There is no significant difference in the mean score of responses of the teachers and students as to the instructional materials available for the teaching and learning of business subjects.

The scores of the respondents - teachers and students on availability of instructional materials were computed using t-test statistic. The result are presented in table 4.7 below.

Table 4.7: T-test on Availability of Instructional Materials

Variables	N	Mean	SD	SE	DF	T-Value	P	T-Critical
Teachers	16	29.375	7.873	1.968	279	2.37	0.018	1.960
Students	265	34.970	9.224	0.567			P<0.05	

A computed T-value of 2.37 was found to be significant at Alpha = 0.05 with df 279. This shows a high significant difference. The null hypothesis is therefore rejected.

The respondents agreed that most of the listed materials were not available. This finding is in agreement with similar findings by Okorie (1979) who stated in his findings that most schools in Nigeria lack essential materials and equipment for Business Education. Aremu (1977) also came out with similar findings in his study of schools in Western States of Nigeria.

Null Hypothesis II:

There is no significant difference between the mean score of responses of the teachers and those of the students on the usefulness of instructional materials to the teaching and learning of business subjects.

To test this hypothesis the scores of the respondents, teachers and students were summed up and t-test was applied. The result is shown in table 4.8.

Table 4.8: T-test on usefulness of Instructional Materials

Variables	N	Mean	SD	SE	DF	T-Value	P	T-Critical
Teachers	16	45.750	18.940	4.735	279	3.28	0.001	1.960
Students	265	35.834	11.215	0.689			P<0.05	

The t-test value observed for the test was 3.28 at alpha 0.05 with df 279, the teacher mean score is 45.750 while the students is 35.834. This implies significant difference. The null hypothesis is thus rejected.

The level of agreement of students on the usefulness of the listed instructional materials to the teaching of business subjects was lower than that of the teachers, this could be because most of the students have never actually interacted with these materials in their lecture or in any aspect of their studies while the teachers on their own part had better knowledge and were suppose to be the target users. Their high score is therefore in line with their orientation.

Null Hypothesis III:

There is no significant difference in the mean score of responses of the teachers and students as to how often the available instructional materials were used.

To test this hypothesis, the mean scores of both groups in the section on the frequency of use of instructional materials were taken and the t-test procedure was applied. The result is shown below:

Table 4.9: Test on Frequency of use of Instructional Materials

Variables	N	Mean	SD	SE	DF	T-Value	P	T-Critical
Teachers	16	25.375	9.299	2.307	279	0.10	0.917	1.960
Students	265	25.589	7.870	0.433			P>0.05	

The observed t-value of 0.03 was found not significant at Alpha 0.05 at df 279. The null hypothesis is therefore retained.

From the table, it was discovered that slight differences existed between the two groups in their perception of the problems encountered in the usage of instructional materials. Teachers were discovered to be overloaded in this study. All the respondents shared this opinion. This finding is in line with that of Obikoya (1976) who had earlier stated that there is a shortage of business education teachers in Nigeria. Fafunwa (1976) also emphasised this shortage in his study of business education in Nigeria.

Null Hypothesis V:

There is no significant difference between the mean scores of the response of the teachers and those of the students on the steps taken in finding solution to the problems encountered while using instructional materials.

The scores on suggested solution by the two groups was used in the test of this hypothesis. The result of the t-test used is shown in table 4.11.

Table 4.11: T-Test on Solutions to Problems of Usage of Instructional Materials

Variables	N	Mean	SD	SE	DF	T-Value	P	T-Critical
Teachers	16	14.562	6.011	1.503	279	1.03	0.306	1.960
Students	265	13.049	5.710	0.351			$P > 0.05$	

Table 4.11 shows that no significant difference exists between the mean score of the teacher and that of the student at Alpha 0.05. The null hypothesis is thus retained.

This result shows that both groups of respondent have the same perception on possible solution to the problems encountered in the use of instructional materials in the affected schools. In all the suggested solution in section D of the questionnaire, the respondents agreed that all could be effective if the measures were carried out.

4.4 Discussions

Among the objectives of this study was the identification of instructional materials available for the teaching and learning of business subjects in the affected schools. From the analysis of the data collected for this study, it was discovered that apart from chalkboard, textbooks and bulletin board, all other listed instructional materials were grossly inadequate where they exist.

This study was also to identify the usefulness of instructional materials in the teaching of business subjects and how often the available materials were used. The teachers were discovered to rate the usefulness of instructional materials very high. This finding was discovered to be in line with the findings of Hawkrige (1966) and Schramm (1977) in which they emphasize the value of instructional materials and equipment in business education. Marvin (1973) also came out with similar findings where he emphasized the need for using instructional materials in both formal and informal education. However, because of the inadequacy of those

materials, it was discovered that the frequency of the usage was very low among the respondents.

Some of the major problems identified in this study were the near total non existence of these materials in the affected schools and lack of sufficient teachers to handle the subjects. This led to overloading the available teachers with work load. It was also discovered that students population per class was relatively too high and there were no spare parts for the existing instructional materials.

The respondents were of the opinion that some of the problems could be solved by encouraging teachers to improvise. Other suggestions as ways out of the problems include provision of funds and instructional materials by the concerned authorities. The idea of leaving such provision in the hands of parents and teachers association was not encouraged by the respondents.

Chapter 5

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter contains the summary of the major findings, conclusion drawn from the entire study is also presented in this chapter, followed by some recommendation emanating from the findings.

5.2 Summary of Finding

The study focuses on availability and uses of instructional materials in the teaching and learning of business subjects in Osun and Oyo States Colleges of Education. It is based on the assumption that instructional materials used during the lesson enhances effectiveness of instructional programme and promotes interest in the learners. One of objectives of the study was to find out how useful instructional materials are to the teaching and learning process.

A review of literature related to the study was carried out under the following sub-headings, Historical Development of Business Education in Nigeria, Business Education Equipment and Facilities. Preparation of Business Education Teachers; Intrinsic and Extrinsic values of instructional materials; Instructional Materials and students performances in examination and Availability of Instructional Materials in schools and Colleges. Five null hypotheses were generated and tested at 0.05 significance level. Instrument used for data collection was questionnaire. T-test statistic was used as statistical tool for data analyses. Hypotheses 1 and 2 was

rejected while hypotheses 3, 4 and 5 were retained. One of the major findings of this study is the non existence of many of these materials in the schools under study.

5.3 Major Findings

The following are the major findings arising from the study:

- (i) On the matter of availability of instructional materials in the Colleges, it was found that most of the listed materials were not available.
- (ii) By assessing the usefulness of instructional materials on the Business subjects, both the students and teachers unanimously agreed that instructional material were useful in the teaching and learning of business subjects.
- (iii) The frequency of usage of the available instructional materials was very low. The respondents agreed that chalkboard and poster are in use and extensively too. They agreed that others were rarely used.
- (iv) Instructional materials can increase learning by helping to arouse and sustain interest, present information in a variety of ways and provide the kind of experiences which allow for the transfer of knowledge and skills to a new tasks.
- (v) The problem encountered in the usage of instructional materials was the inadequacies of the materials.
- (vi) Teachers were also not sufficient to handle the subjects. This led to over loading the available teachers with heavy teaching. It was also discovered that students population per class was relatively too high.

- (vii) There were no spare parts for the existing instructional materials and lastly constant power failure.
- (viii) Fund for improvisation should come from government and students and teachers to co-operate for proper improvisation.
- (ix) On the students academic performance it was revealed that the influence of instructional materials is evidently noted.

5.4 Conclusion

Based on the above discoveries, it was therefore concluded that:

- (i) Instructional materials in the colleges are not sufficient.
- (ii) That the Business teachers are not enough and so the available ones are over worked.
- (iii) That most of the available instructional materials are not often use.
- (iv) That utilization of instructional material has great impact on the mastery of business subjects and can promote students' interest in the subject and encourage teachers' efficiency.
- (v) That despite the state government financial concern, foreign aids, philanthropist donation, and individual donation can still be appreciated in the purchase and maintenance of instructional materials in these Colleges.

5.5 Recommendations

In view of the findings and conclusions of this study the following recommendations are strongly made.

(i) Instructional Materials:

Findings on the availability of instructional materials in the two Colleges of Education revealed that many of the material are not available. It is therefore recommended that the state government should pay more financial and material attention to the supply of the needed instructional materials to the Colleges.

- (ii)** It is also recommended that, private organisations, philanthropists, individuals as well as parents and teachers association should show the concern in assisting the government in the purchase, supply and maintenance of equipment and materials.
- (iii)** More Business Education teachers should be employed to work in the Colleges.
- (iv)** Business Education textbooks should be made available.
- (v)** Workshop, Seminar and Conferences on utilization of instructional materials in the teaching processes as well as courses on how to improvise and use them should be organized by the States' Ministry of Education and the College authorities.
- (vi)** Since utilization of instructional material is revealed as having tremendous influence on the mastery of business subjects and academic excellence of the students, teachers should therefore be mandated to use the materials that are available and made known their needs to the school authority.

5.6 Suggestion for Further Research

- (a) Since the study was confined to Colleges of Education in Osun and Oyo States, the researcher suggests that similar study should be conducted in other States of the Federation. This will further reveal crucial issues on the availability of materials in such colleges, the extent to which they are utilized and their influence on the development of Business Education.
- (b) A study may also be conducted to find out whether students who received instructions with instructional materials perform better academically than those who do not receive instructions with instructional materials.

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SECTION 'B'**Availability and Utilization**

5. Mark x in the appropriate column that best describe the situation of these instructional materials in your school.

	Easily Available	Fairly Available	Not Easily Available	Not Available
a. Textbooks				
b. Chalkboard				
c. Bulletin Board				
d. Pictures and Photographs				
e. Charts				
f. Television				
g. Slides and Filmstrip				
h. Posters				
i. Demonstration Stand				
j. Stop Watch				
k. Tape Recorder				
l. Opaque Projector				
m. Overhead Projector				
n. Audio Tape Recorder				
o. Motion Picture.				

6. How often did your business teacher used instructional materials while teaching? Mark 'x' in the appropriate column as each one,

	Very Often	Often	Sometimes	Rarely
a. Textbooks				
b. Poster				
c. Chalkboard				
d. Bulletin Board				
e. Pictures and Photographs				
f. Charts				
g. Television				
h. Slides and Filmstrip				
i. Stop Watch				
j. Overhead Projector				
k. Opaque Projector				
l. Audio Tape Recorder				
m. Motion Picture.				
n. Demonstration Stand				

7. To what extend do you consider the following as problems encountered by your teacher while using instructional materials.

	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed
a. Lack of students interest.				
b. Lack of Time				

	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed
f. Inadequacies of audio-visual materials.				
g. Lack of knowledge on how to handle the materials.				
h. Teacher has no interest in using them.				
i. Teacher do not know their functions.				
j. Lack of spare parts to replace damaged parts.				

SECTION 'C'

Usefulness to Teaching/Learning Process

8. To what extent do you consider the following materials useful for the teaching and learning of business subjects in your Colleges of Education.

Please Mark 'x' in the appropriate column.

	Very Useful	Useful	Hardly Useful	Not Useful
a. Textbooks				
b. Chalkboard				
c. Bulletin Board				
d. Pictures and Photographs				
e. Charts				
f. Television				
g. Slides and Filmstrip				
h. Poster				
i. Demonstration Stand				

	Very Useful	Useful	Hardly Useful	Not Useful
j. Stop Watch				
k. Tape Recorder				
l. Opaque Projector				
m. Overhead Projector				
n. Audio Tape Recorder				
o. Motion Picture				

9. To what extent do you consider the following as reasons why instructional materials is important to teaching and learning process. Please mark 'x' where appropriate.

	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed
a. Instructional materials are essential in teaching business subjects.				
b. Permanent learning comes about in a shorter period of time when instructional materials are used.				
c. Students performance can be improved when audio-material are used.				
d. Students learn more in the classroom when instructional materials are used.				
e. The use of instructional materials have negative effect on students performance.				
f. Instructional materials are aids to learning rather than learning.				

	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed
g. The use of instructional materials assists the teacher of business to carry on their task more effectively and efficiently.				
h. The provision and adequate use of instructional materials will enhance performance, acquisition of skills, retention of facts and formation of habits that are necessary in business subjects.				

SECTION 'D'

To what extent do you consider the following measures appropriate, solutions to the problems encountered while using instructional materials.

	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed
a. Business teachers should be encouraged to improvise.				
b. Funds must be made available for improvisation by the government.				
c. Audio-visual workshop is to be organised for business education teachers.				
d. Teachers and students to cooperate in the improvisation.				
e. Parents and teachers association to provide materials/funds for improvisation.				

SECTION 'B'**Availability and Utilization**

6. Mark x in the appropriate column that best describe the situation of these instructional materials in your school.

	Easily Available	Fairly Available	Not Easily Available	Not Available
a. Textbooks				
b. Chalkboard				
c. Bulletin Board				
d. Pictures and Photographs				
e. Charts				
f. Television				
g. Slides and Filmstrip				
h. Posters				
i. Demonstration Stand				
j. Stop Watch				
k. Tape Recorder				
l. Opaque Projector				
m. Overhead Projector				
n. Audio Tape Recorder				
o. Motion Picture.				

7. How often did you use instructional materials while teaching? Mark 'x' in the appropriate column as each one.

	Very Often	Often	Sometimes	Rarely
a. Textbooks				
b. Poster				
c. Chalkboard				
d. Bulletin Board				
e. Pictures and Photographs				
f. Charts				
g. Television				
h. Slides and Filmstrip				
i. Stop Watch				
j. Overhead Projector				
k. Opaque Projector				
l. Audio Tape Recorder				
m. Motion Picture.				
n. Demonstration Stand				

8. To what extent do you consider the following as problems encountered while using instructional materials.

	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed
a. Lack of students interest.				
b. Lack of Time.				
c. Too many students in the class.				
d. Lack of electricity.				

	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed
e. Too much load of work for the Teacher.				
f. Inadequacies of audio-visual materials.				
g. Lack of knowledge on how to handle the materials.				
h. Teacher has no interest in using them.				
i. Teacher do not know their functions.				
j. Lack of spare parts to replace damaged parts.				

SECTION 'C'

Usefulness to Teaching/Learning Process

9. To what extent do you consider the following materials useful for the teaching and learning of business subjects in your Colleges of Education.

Please Mark 'x' in the appropriate column.

	Very Useful	Useful	Hardly Useful	Not Useful
a. Textbooks				
b. Chalkboard				
c. Bulletin Board				
d. Pictures and Photographs				
e. Charts				
f. Television				
g. Slides and Filmstrip				
h. Poster				
i. Demonstration Stand				

	Very Useful	Useful	Hardly Useful	Not Useful
j. Stop Watch				
k. Tape Recorder				
l. Opaque Projector				
m. Overhead Projector				
n. Audio Tape Recorder				
o. Motion Picture				

10. To what extent do you consider the following as reasons why instructional materials is important to teaching and learning process. Please mark 'x' where appropriate.

	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed
a. Instructional materials are essential in teaching business subjects.				
b. Permanent learning comes about in a shorter period of time when instructional materials are used.				
c. Students performance can be improved when audio-material are used.				
d. Students learn more in the classroom when instructional materials are used.				
e. The use of instructional materials have negative effect on students performance.				

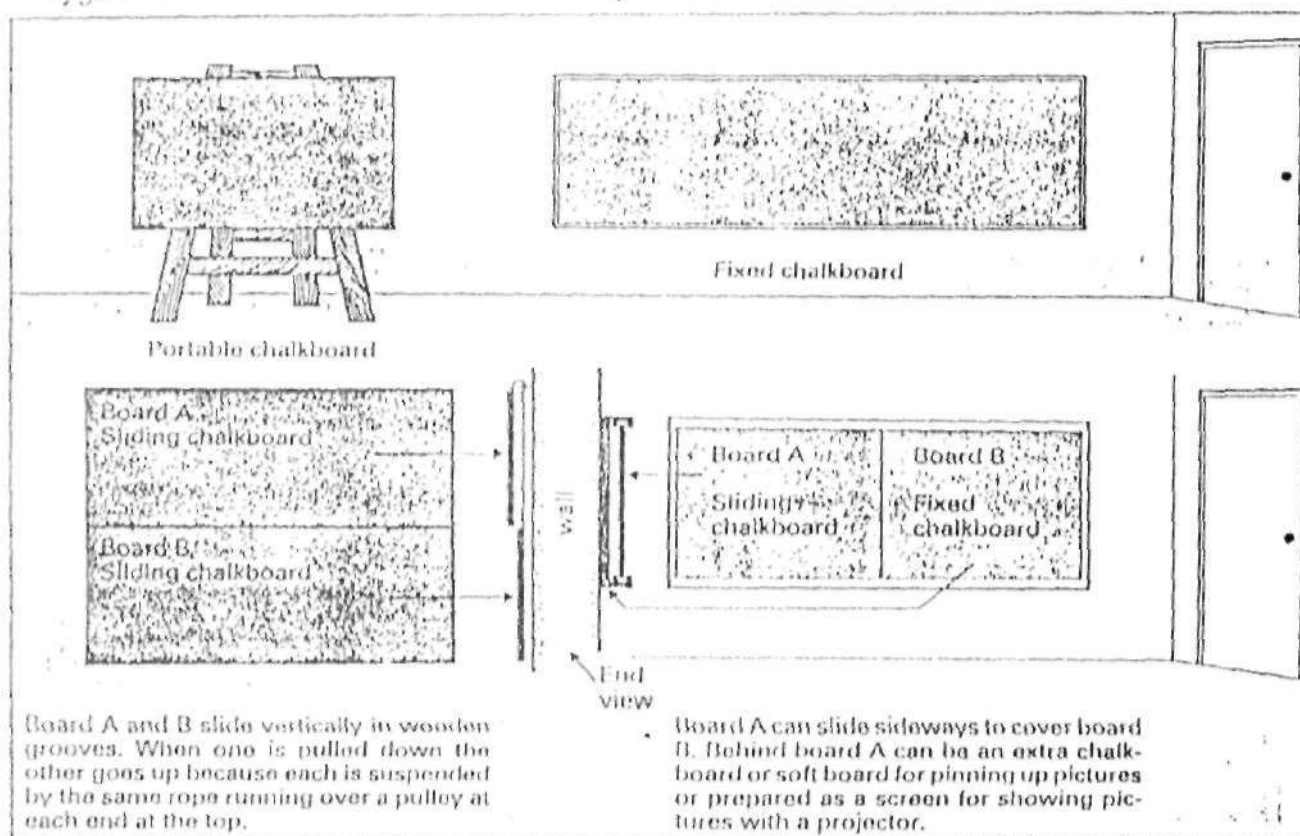
	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed
f. Instructional materials are aids to learning rather than learning.				
g. The use of instructional materials assists the teacher of business to carry on their task more effectively and efficiently.				
h. The provision and adequate use of instructional materials will enhance performance, acquisition of skills, retention of facts and formation of habits that are necessary in business subjects.				

SECTION 'D'

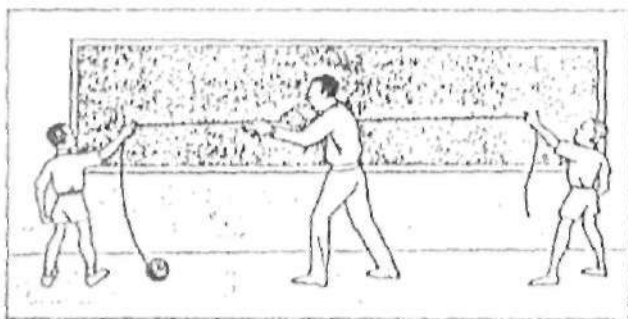
To what extent do you consider the following measures appropriate, solutions to the problems encountered while using instructional materials.

	Strongly Agreed	Agreed	Agreed	Strongly Disagreed
a. Business teachers should be encouraged to improvise.				
b. Funds must be made available for improvisation by the government.				
c. Audio-visual workshop is to be organised for business education teachers.				
d. Teachers and students to cooperate in the improvisation.				
e. Parents and teachers association to provide materials/funds for improvisation.				

APPENDIX III
Some Types of Chalkboard



16.1 Some types of chalkboard



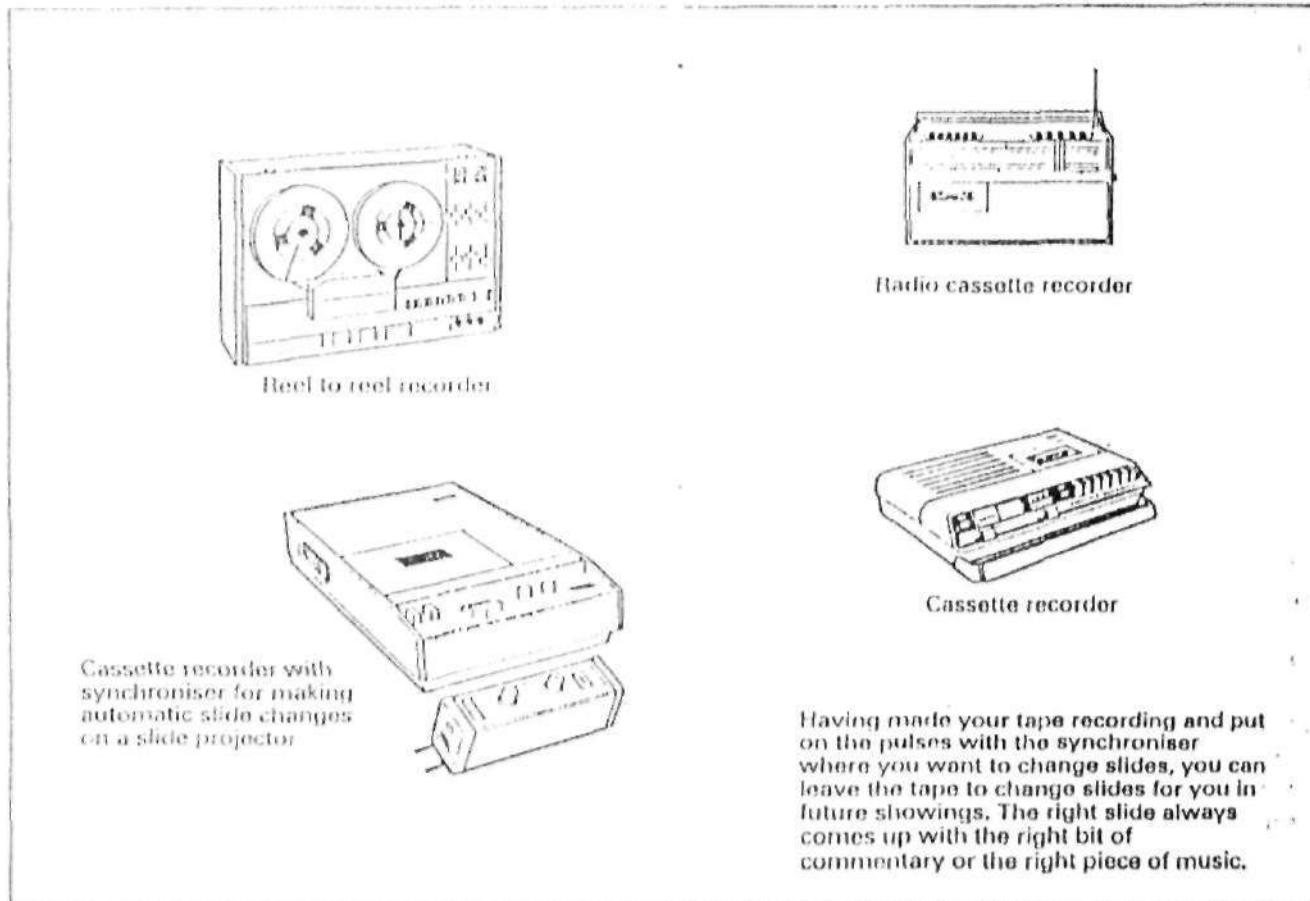
16.2 Putting guidelines on a chalkboard

Scratch the line with a nail.

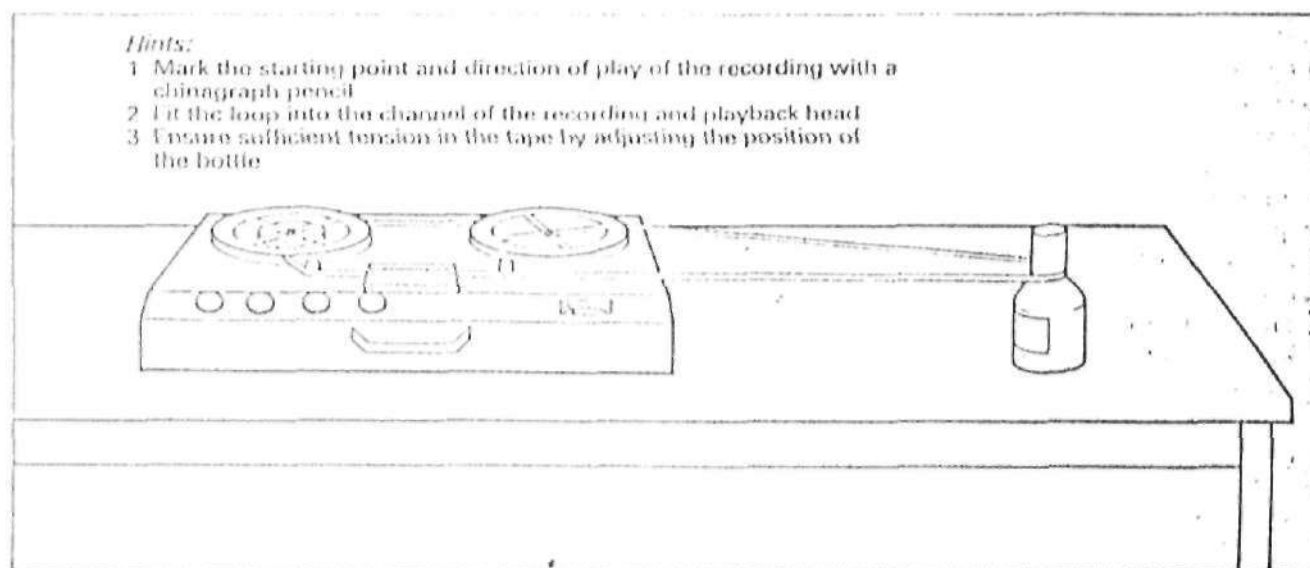
- Look at figure 16.3, which shows the correct stance for writing on the chalkboard at different levels. The feet should be about 40 cm away from the wall on which the board is fixed and the arm should be only slightly bent. The wrist and elbow should hardly move, the movement of the chalk being controlled from the shoulder.

Practice writing by getting a friend to dictate passages for you to write as quickly and as neatly as you can. Criticise your chalkboard writing frequently with reference to the characteristics of good chalkboard writing.

17. AUDIO MEDIA

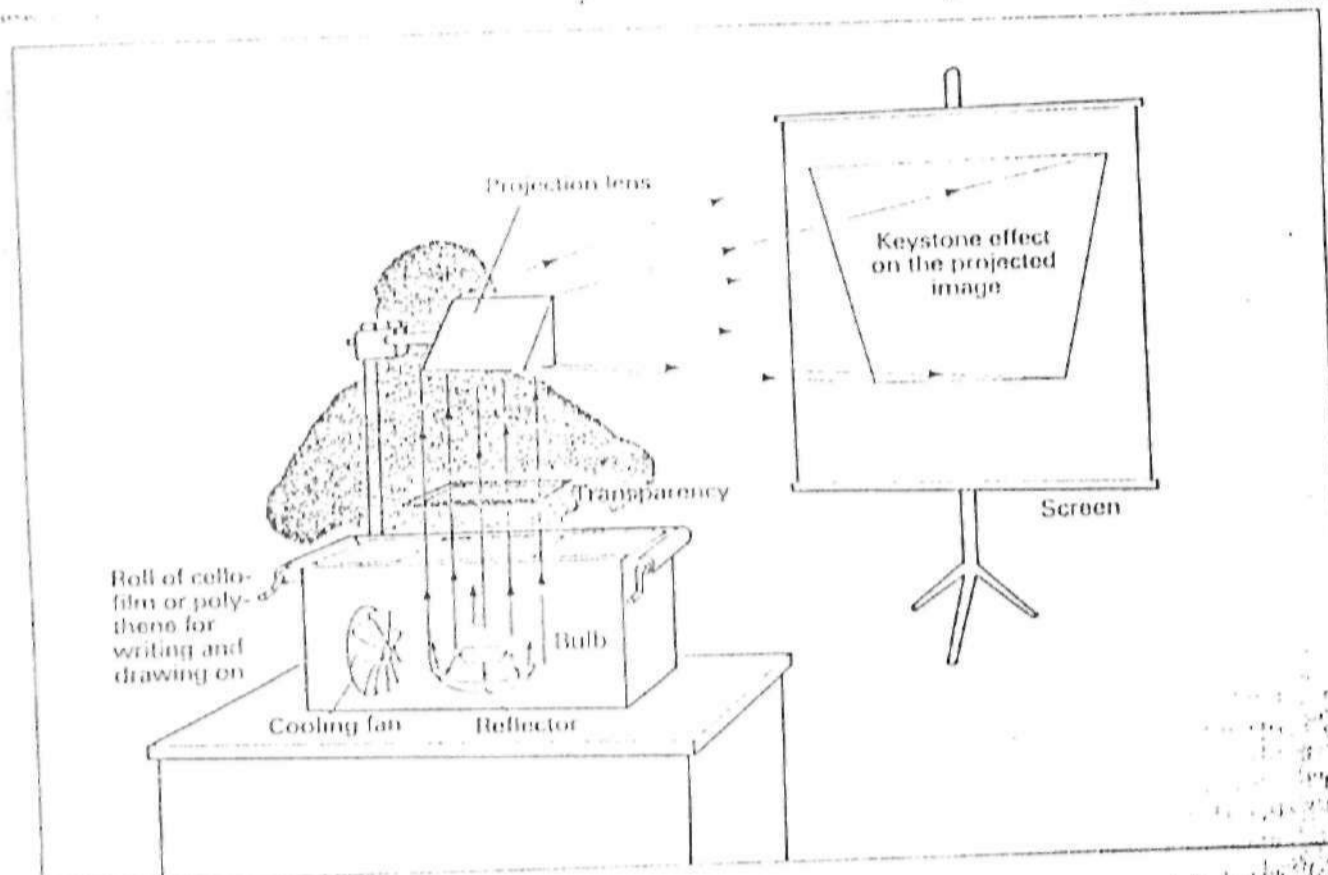


17.6 Some tape recorders



17.7 A home-made tape loop mechanism

APPENDIX V
An Overhead Projector

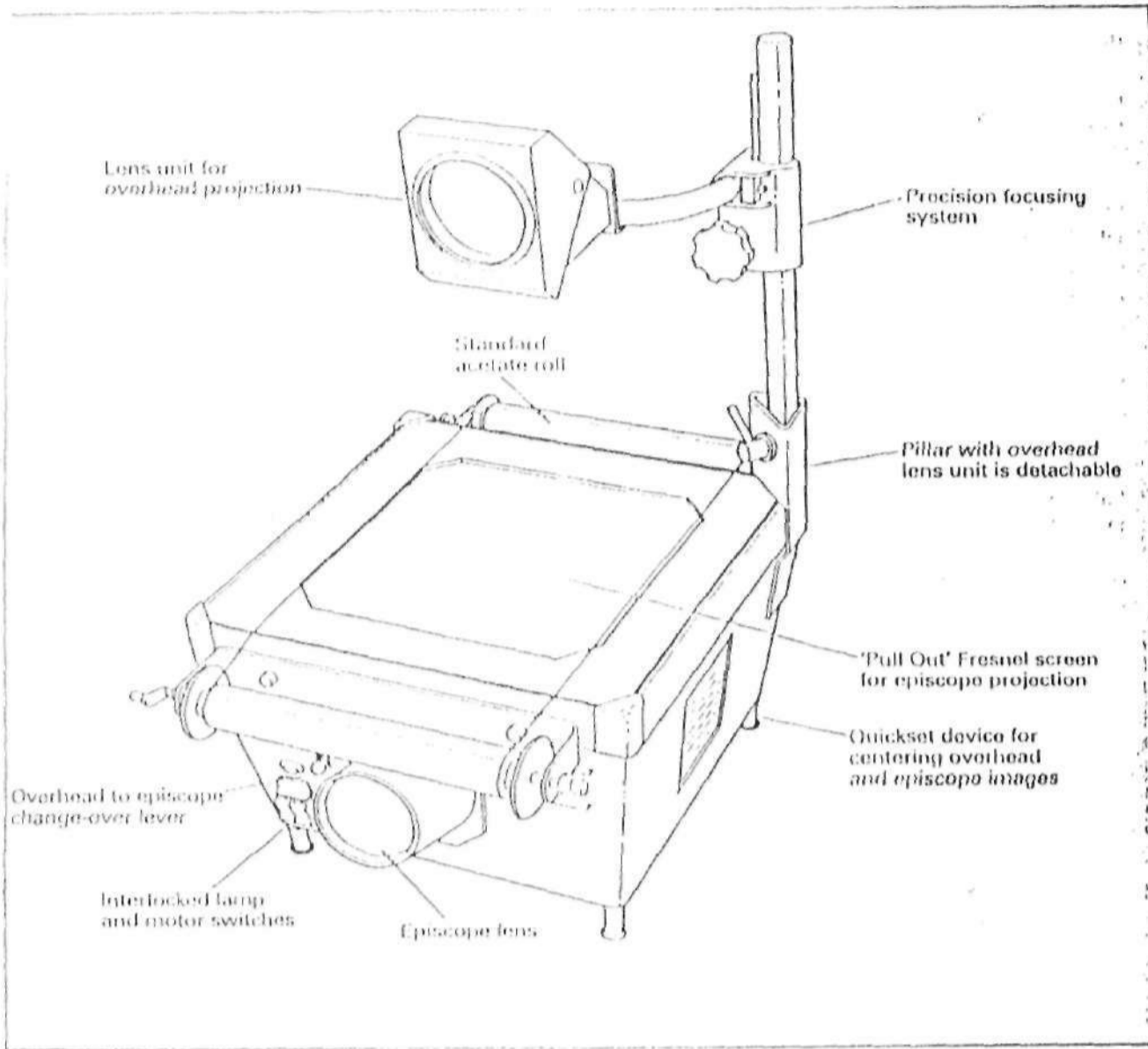


17.12 An overhead projector

81

A combined overhead projector and Epi

7. PROJECTED MEDIA

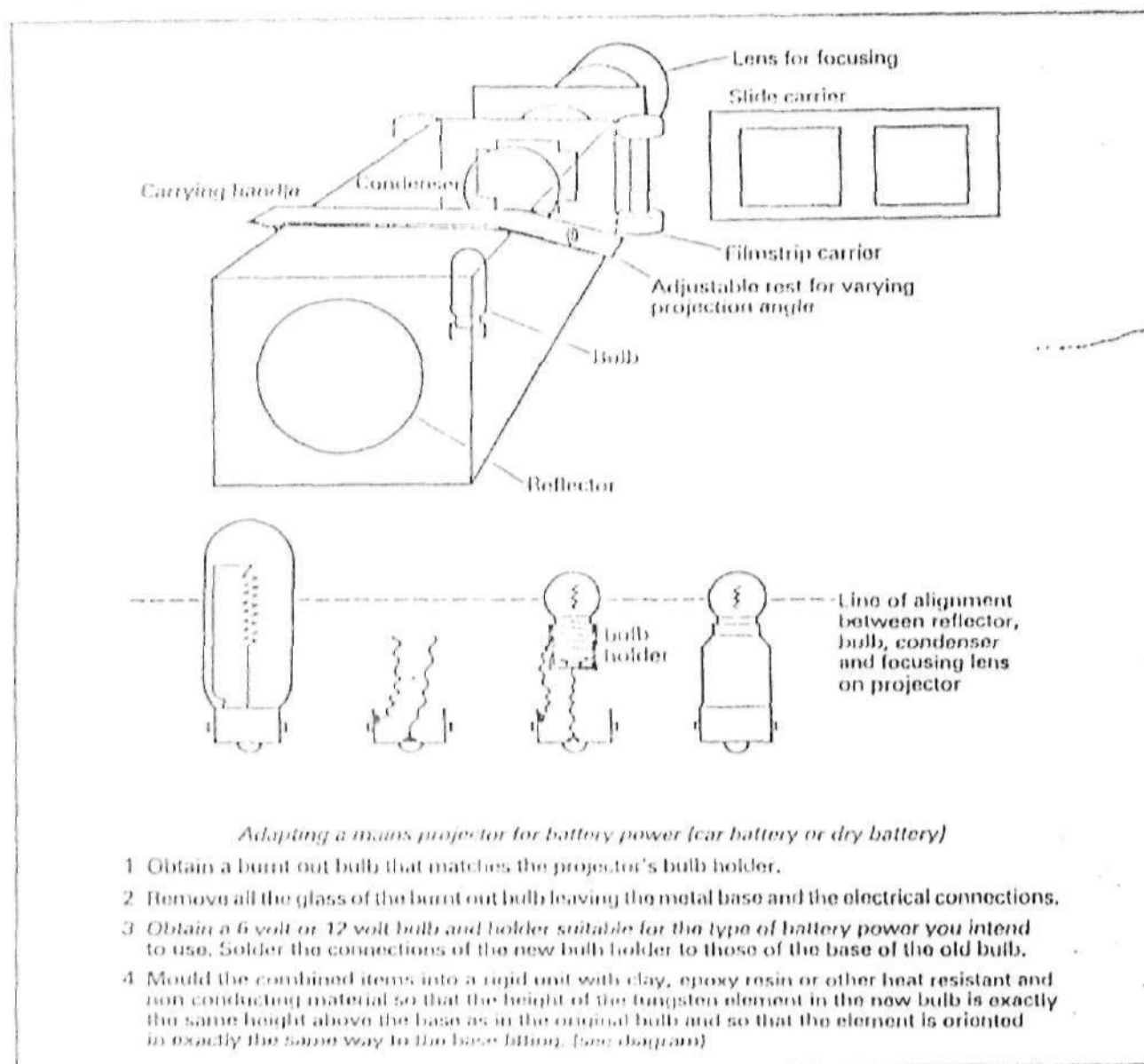


17.13 A combined overhead projector and episcopo

PRACTICAL WORK

82

APPENDIX VII
A slide-filmstrip Projector

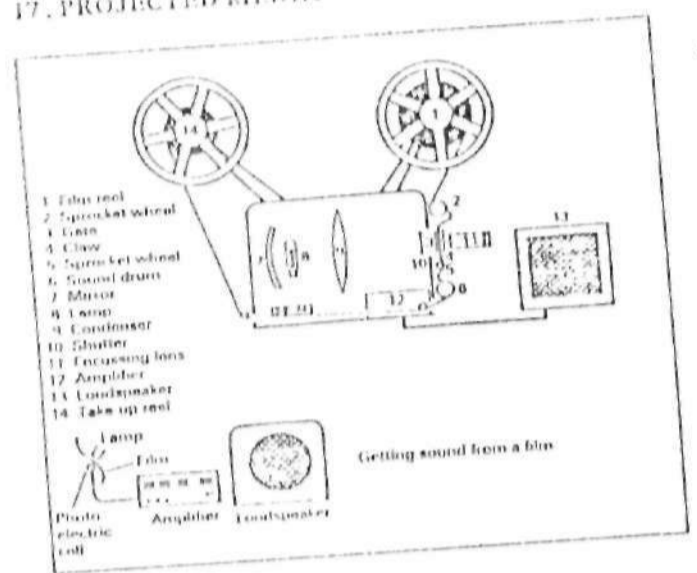


17.16 A slide-filmstrip projector

83

APPENDIX VIII
A cine Projector

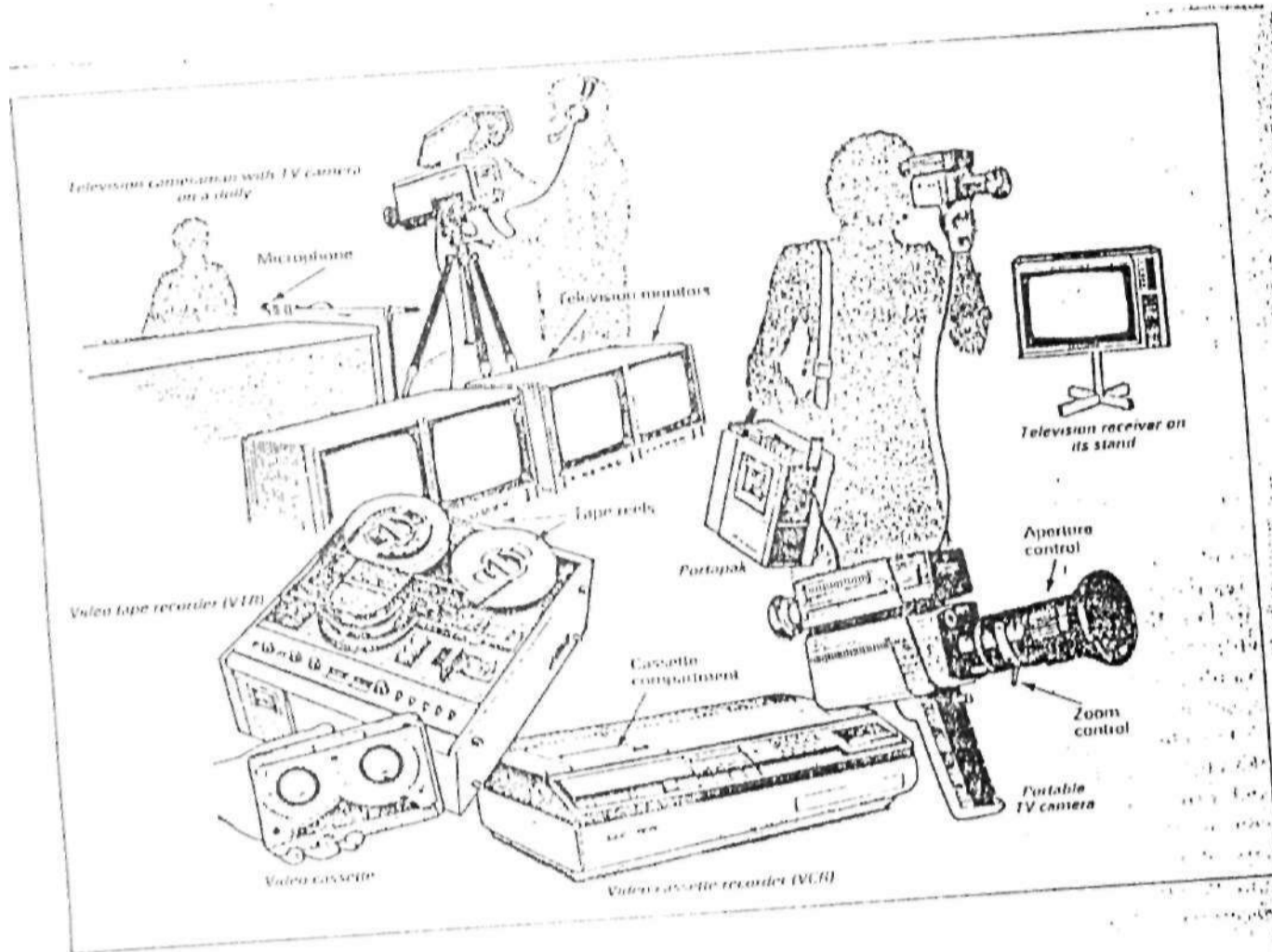
17. PROJECTED MEDIA



17.20 A cine projector

84

APPENDIX IX
Some Examples of Video Equipment



17-24 Some examples of video equipment

85

TABLE 1
Table for Determining Sample Size from a Given Population

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	291
20	19	240	149	1400	292
25	24	250	152	1500	293
30	29	260	155	1600	293
35	32	270	159	1700	294
40	36	280	162	1800	294
45	40	290	165	1900	295
50	44	300	169	2000	295
55	48	310	173	2200	297
60	52	320	177	2400	298
65	56	330	180	2600	299
70	59	340	184	2800	300
75	63	350	187	3000	301
80	66	360	191	3200	302
85	70	370	194	3400	303
90	73	380	197	3600	304
95	76	390	200	3800	305
100	80	400	203	4000	306
110	84	420	207	4500	308
120	88	440	211	5000	310
130	92	460	215	5500	312
140	96	480	219	6000	314
150	100	500	223	6500	316
160	104	520	227	7000	318
170	108	540	231	7500	320
180	112	560	235	8000	322
190	116	580	239	8500	324
200	120	600	243	9000	326
250	132	750	255	10000	331
300	144	900	267	100000	336

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

Source: Krcjcie, Robert V. and McGinn, B. Daryle W. (1970). "Determining Sample Size for research activities," Educational and Psychological Measurement 30, 1970, p. 608.

Figure 1. Relationship between sample size and total population.