DECLARATION

This project report is my original work and has not been presented for a degree in any other University.

KARINGITHI GRACE GATHONI (MRS.)

This project has been submitted for examination with my approval as University supervisor.

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DEDICATION

To my husband Cripus Karingithi
and children: Hannah
Paul and
Peter
ACKNOWLEDGEMENTS

This project was written with the help and cooperation of many individuals to whom the author owes a great deal of credit and wishes to express sincere appreciation.

Most sincere gratitude goes to Mrs. Kithinji for her tireless guidance, patience and encouragement she gave me from the beginning to the end of the study.

A lot of thanks also go to Professor Patel and Dr. Maritim who gave useful lectures on research methods and Dr. Ingule who also gave useful lectures on statistics.

The author is indebted to the City Education Officer, Head teachers and class teachers of the schools that participated in the study for their cooperation.

A lot of thanks to Miss Florence Muthoni who typed this project.

It would be incomplete to leave out my husband Crispus Karingithi, who gave encouragement and assistance whenever he could.
Last but not least, my gratitude go to my children Hannah, Paul and Peter, who patiently stayed on their own when I was out doing the research and writing this project.
This research was a survey of teaching aids used by Home Science teachers in teaching Home Science, in six primary schools of Northern Division in Nairobi District. Noting that teaching aids enhance understanding and retention of content, the researcher wanted to investigate the available teaching aids and their use.

The major objectives were to find out (1) The teaching aids used (2) The acquisition, improvisation and storage of these teaching aids (3) The problems teachers face in acquiring and using the various teaching aids.

The sample was randomly selected so that two schools were taken from schedule A (the pre-Independence schedules) two from schedule B, one from schedule C and one from assisted schools. Home Science teachers of standard 4, 5, 6, 7 and 8 were respondents both to the questionnaires and the interviews administered by the researcher.

The results of the study were that:

1) The major teaching aids used in teaching Home Science were books which were both the officially recommended by Kenya Institute of Education and not officially recommended by Kenya Institute of Education or any other authorised body. The other teaching
aids used were charts and realia such as foodstuffs, pieces of materials and household utensils.

2) Majority of the materials used are bought although a few were made jointly by teachers and pupils.

3) About ninety two percent of the materials are stored in the classroom cupboards which all classes had, although there were other storage systems such as staffroom and Home Science room.

4) Problems encountered were many, but the major ones were lack of time, lack of funds and lack of proper guidance from Kenya Institute of Education, for example on which resource people to invite.

All these implied that with the wide syllabus, the use of intensive teaching aids, as Kenya Institute of Education intended, would affect the syllabus coverage negatively.
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CHAPTER ONE

1.0 INTRODUCTION

Before independence when the primary education was up to standard eight and candidates did Kenya African Preliminary Examination, Home Science was an examinable subject for girls. It was under the name Domestic Science. After Kenya African Preliminary Examination was replaced by Kenya Primary Examination in 1962 and the primary schools education was reduced from eight years to seven years, Domestic Science was removed from national examination. Although it was still part of the primary school curriculum, most teachers used the Domestic Science periods for teaching other subjects such as Maths and English which were considered important examinable subjects, in order to cover the syllabus. As a result of this Domestic Science died slowly.

With the introduction of 8-4-4 system of education in 1984, Domestic Science was revived under the name Home Science. It was included in the national examination which is done at the end of eighth year (Kenya Certificate of Primary Education) as part of the technical subjects. This time Home Science was made compulsory for both boys and girls.

Once again Home Science had become an important subject in primary school curriculum due to the
emphasis on practical subjects. As such it was important that Home Science be taught properly in primary schools. This would be possible with the help of appropriate teaching aids.

1.2. STATEMENT OF THE PROBLEM

The Ominde Commission of 1964 stated that the main purpose of teaching Domestic Science was the training of visual and manual co-ordination, which started in primary class I - III and forms an important part of English medium techniques.\(^1\) As a result of this there was no need for domestic science to be an examinable subject.

The report of Kenya National Committee Objectives and Policies (1976) chaired by Peter Gachathi, pointed out that the syllabus and content of primary Education have little relevance to the real social and economic environment in which the school leavers will live and work.\(^2\)

The question had therefore been raised as to whether such adaptive skills such as needlework, carpentry, art and craft could be usefully taught in primary schools to enhance the ability of the school leavers to adapt to these circumstances.
As a result of the recommendation in the report on the "second University" Commission chaired by Mackay (1981) the system of education was changed to the 8-4-4 system of education. This meant that the national Examination would be done at the end of the eighth year. It also changed from certificate of primary education to Kenya certificate of primary Education which contains six different examination papers. Home Science is part of the technical subject paper. As a result of this there is much emphasis on Home Science in primary schools.

The Home Science subject included practicals which form part of continuous assessment.

The introduction of the 8-4-4 system of Education required Home Science to be taught to both boys and girls unlike in the past, when it was taught to the girls only. So the Home Science teacher finds that he/she is faced with the problems of a large group of students including boys who regarded it as a woman's subject.

Proper use of teaching aids could assist the Home Science teacher in handling the large classes more effectively. The teacher should be able to select the appropriate teaching aids and have the knowledge and confidence in the use of the teaching aids chosen.
In other words the teacher should have the interest of learning how to use the available teaching aids effectively. If a teacher is imaginative, he/she would do a better job even without very expensive teaching aids.

Where the teaching aids were not available the teacher should improvise using the locally available materials. The teacher has to take great care of the teaching aids. This could be done by storing them properly so that they were not damaged by heat or rain. If a teaching aid is out of order it should be repaired in good time, for example a radio, cooker and sewing machine.

Therefore it is necessary to find out the types of teaching aids that teachers use in teaching Home Science in the implementation of 8-4-4 system of Education. So the researcher tried to find out how the Home Science teachers select the teaching aids, how they use them and how they are stored after use. The research also tried to find out whether the teachers improvise teaching aids using the locally available materials.

1.3. OBJECTIVES OF THE STUDY

1. To identify the types of teaching aids that are used by Home Science teachers.

2. To investigate the criteria used by Home Science teachers in the selection of teaching aids.
3. To find out whether the Home Science teachers use
the community resources around the school as teaching
aids.

4. To find out whether the Home Science teachers get the
teaching aids from Teachers' Advisory Centres.

5. To investigate how the Home Science teachers store
their teaching aids for future use.

6. To find out how the Home Science teachers maintain
and repair their teaching aids.

7. To identify the problems Home Science teachers
encounter in acquiring the teaching aids.

1.4 DEFINITION OF TERMS

The terms that are used in the research can have
different definitions in other circumstances. It is for
this reason that some of the terms commonly used in the
research are defined below.

Teaching Aids: These are materials that the teacher uses
to maintain the interest and enthusiasm in pupils as he/she
communicates with pupils during the lesson. They make the
teaching effective.

Resource Materials: These are teaching/learning aids that
assist the teacher when teaching or pupils when they
are learning, for example books, audio-visual aids, community resources just to mention a few.

**Resource persons:** These are people who are specialized in certain areas, in the neighbourhood/community. They are available means of bringing demonstrations and specialized information into the classroom.

**Realia:** These are real things or objects that are used as specimens.

**Walking Trips:** These are visits that are taken by pupils to the neighbourhood of the school. The pupils and the teacher walk to the place being visited. For example post office, a resource person or to a dispensary.

**Field Trips:** These are visits to areas that are far from the school. The pupils need transport because the distance is far. They can visit a farm, museum or dairies.

**Acquisition:** Process of obtaining materials, selecting and ordering. They can be obtained through purchase, exchange as gifts or borrowed materials.

**Storage:** Room for, or means of keeping the resources
after use against damage.

**Accessibility:** Refers to ease or difficulty in obtaining the teaching aids.

**Maintainance:** Means of keeping in good order without damage for use when needed; it involves repairing or preventing from damage or replacing.

**Improvisation:** This is an invention or production of representation of the real thing.

**Library:** An organized collection of books and non-book media in a school for reading, studying, consultation and other general uses by teachers and pupils. It can be under the care of a teacher, trained or untrained. Generally, this study will look at library as a school library; this can be a building, a room or rooms for keeping and using books and other non-book materials.

1.5 **SIGNIFICANCE OF THE STUDY**

The findings of this study can form the basis of future researches on the teaching aids in rural areas.

Findings will reveal the teaching aids that are currently available for teachers' use and the one that
need improvisation. Such information will help those who are not aware of the existence of such aids as well as improvisation.

Although the research was limited to six primary schools in Northern Division in Nairobi, the findings may apply to other areas in Nairobi.

1.6. **LIMITATIONS OF THE STUDY**

1) Although a lot of research on teaching aids has been done in America, very little research has been done on teaching aids in Home Science in developing countries. Here no research had been done on teaching aids in Home Science because the only one which was done by Wamani (1987) was on improvisation of teaching aids in secondary schools.

2) The present study is limited to six primary schools selected in Northern Division in Nairobi, District and so the results may not apply to other areas.
FOOTNOTES

1. Ominde; The Kenya Education Commission,

2. Peter Gachathi; Report of Kenya National Committee
   On Educational Objectives and Policies

3. Ministry of Education: Education Annual Report,
2.1 LITERATURE REVIEW

The term "Teaching Aids" refers to resources that aid the teacher in communicating with the learners. Froebel (1926) declared:

To learn a thing in life and through doing is much more developing, cultivating and strengthening than to learn it merely through the verbal communication of ideas.¹

Teaching Aids are also referred to as teaching materials such as textbook, encyclopedia, reference books, radio, resource people and trips just to mention a few. Teaching materials help the teacher to improve his/her instruction by involving the pupils to more than one sensory organ.²

Teaching aids refer to Audio-visual materials which increase learners' motivation. The resulting education, moreover becomes emotionally stimulating as well as intellectually rewarding. The motivation is increased or stimulated because of audio-visual materials concreteness and interest, continuity of thought that is fostered when words are coupled with explanations in pictures and sounds. The studied care and artistry that have gone into the particular presentation.³

Audio-visual (Teaching Aids) provides the pupils with experiences that are fresh, exhilarating, delightfully new and varied. This freshness and variety may be numbered among the most important contributions that
can make to our teaching.

Teaching aids appeal to pupils of varied abilities, they encourage active participation, give needed reinforcement, widen the range of students' experience and assure order and continuity of thought. 4

Comenius (1967) said:

The foundation of all learning consists of representing clearly to the senses, sensible objects so that they can be appreciated easily.

The eye is the most important gateway to the mind. For most people the visual impression is the one which can be most easily interpreted, is the most readily understood to other sensory experience. Teaching aids encourage and develop the use of hearing, sight, touch, taste and smell. The teacher encourages the co-ordination of these sense impressions and their use in thinking and reasoning. Page (1958) reckoned:

... a man who is apt to teach will devise some ingenious method of enlightening the mind of his pupils so that he shall hold on the ideas as with a manly grasp and make it his own for ever.

Communicating an idea is not a simple process because each listener brings a different set of variables to the situation, that is learners are variables. Each
one of them brings her/his own set of experiences and purpose to the situation and though everyone in the group may have had some common experiences no two individuals interpret them exactly the same way. Each learner is involved in creating his/her own world and so, that world shares certain commonalities with others. It is his/her unique world and in its totality can not be shared entirely with anyone else.

Learning has been described as a modification of behaviour through experience in such a way that pupils behave differently after it has taken place. In other words, the teacher and the learner have communicated. The measure of success in this process is the extent to which the ideas that one is trying to transmit are understood, that is recreated in the mind of the learner in such a way that he can incorporate what he has discovered into his own scheme of things and relate it to the world as he perceives it. Verbal facility is only one of the skills required. Modern teachers must also be conversant with instructional media (materials) and their application in the learning process. This is because youngsters use all of their senses as they learn. Thus they develop a growing storehouse of experiences upon which to draw and upon which understandable abstractions of reality can be based. Creative teachers aid this process by providing a wealth of experiences.
Experiences that will make it easier to move from known to unknown with some measure of confidence. Initially in this process, words are less important than experiences. Learners must acquire first the kind of concrete experiences and background that will enable them to perceive, to interpret and to assimilate facts, concepts, ideas and skills. Dale (1966) declared:

"Life is too short to sample all of it by direct sense experience. We must also live on symbolic mediated level but the symbols used must always rest firmly on a rich base of experiences. We must therefore concern ourselves with how we can keep our teaching of Home Science from being over verbalistic."

It is up to the teacher to foresee learning problems and to equip oneself with means to breathe life in abstractions to excite others so that they will want to learn and will have confidence that they can learn. The rewards are many, they will come each time a face lights up with unspoken massage of interest and understanding.

This can only be done by the use of teaching aids to assist the teacher to communicate effectively. Teaching aids provide a common starting point and a common path to follow. They help to get people to thinking on similar lines the same subject. By studying a situation or a picture with which you are trying to communicate,
you can enter into an experience to which you can both relate your conversation. Teaching aids can be very effective, but it does not mean that you need a lot of expensive equipment.

The American Association of Schools (1975) says that:

"With a quality media programme a school can challenge its members to participate in exciting and rewarding experiences that satisfy both individual and instructional purposes."8

Media here is a combination of resources including people, materials, machines, facilities, and environment as well as purposes and processes. Teachers' textbooks have therefore ceased to be the only source of information in the classroom as Lawton et al. (1971) view it. Lawton and his colleagues further feel that now teachers have a duty of knowing all available teaching aids, selecting appropriate ones for their pupils' needs and guiding pupils in the use of the aids so as to obtain information.9

"Objectives and teaching strategies imply materials. Although materials can be for any purpose, some types are better suited for one cluster of objectives than others."10

There are four groups of teaching aids:
I READING MATERIALS

These include textbooks, encyclopedia, reference books, magazines, manuals, newspapers' cuttings, programmed materials and dictionaries.

Fenton (1967) expresses his strong view that textbooks are good for learning of facts and generalizations which can easily be evaluated by quizzes and others, he quickly adds that textbooks largely ignore the development of inquiry skills and values. He does not however hesitate to point out that in all learning facts have to be learned first before any other skills can be developed and that these facts should be basic guide, but for examination purposes they are easily forgotten.¹¹

Textbooks are a main reference or guide and therefore reading materials as supplementaries. It is the textbooks that will indicate what a teacher must teach and what children have to learn. In other words most textbooks organize instruction so that it can be followed sequentially.

The researcher intended to find out the reading materials that were available for teaching Home Science and their qualities.
II NON-READING MATERIALS

The researcher considered these to be audio-visual materials like films, filmstrips, tapes, transparencies radio, television, charts, graphs and tables. These exclude aids like realia which fall in a section of their own as per this research.

It has to be pointed out that these resources are not completely non-reading materials because they always have titles (captions) and other writings that require reading. In other words, they are materials which depend heavily on sight and sound, but not the interpretation of written words. Lawton (1971) says that:

"The growth of a variety of teaching approaches had been aided by the variety of visual and audio-visual aids available to teachers."¹²

Romiszowski (1968) supports this when he says that visual aids are used because some objects can not readily be shown as they might be too large, too small, too expensive, too dirty, too dangerous, too delicate or they only come out at night or are hidden, for example the alimentary canal.¹³ Essentially he is suggesting that there are visual representations for things with these qualities.

The researcher tried to find out the audio-visual materials that were used by Home Science teachers in primary schools.
III COMMUNITY RESOURCES

There are many resources in the community which can be used by teachers when they are teaching. For example resource persons, markets, industries, post offices, police stations and so on.

Michaelis (1968) says that:

"The community is a laboratory for first hand inquiry into human activities."  \(^{14}\)

Jarolimek (1967) divides the community into two types. The first are those that bring part of the community to the class such as resource people. The second are those that take the class to the community. For example walking trips, field trips and surveys.

The researcher looked at these two aspects of the community resources. Michaelis (1968) says that all these resources can give first hand information and can also be used to enhance inquiry. He suggests that a teacher needs to first make a brief survey of the community to acquaint himself with the nature of the community. Pupils can also assist in this survey so that essential community resources can be utilized to the maximum. \(^{16}\).
Trips develop observation whereas resource people help to develop interviewing skills in the pupils. These trips can be to the market, local industries, hospitals, post office and museums. Resource people can include tailors, doctors, nurses, family life educationists and nutritionists to mention just a few.

According to Kenya Institute of Education (K.I.E.) community resources should play a major role in teaching Home Science.

IV REALIA AND REPRESENTATION OF REALIA

Michaelis (1968) sees realia as real objects or things such as specimens, clothes or materials, utensils, foods equipment and laboratories. They are important in teaching Home Science because children can retain more of what they see then they can retain the knowledge and understand more where they can see real things.

The researcher tried to find out whether the primary schools that were being visited had a Home Science laboratory and whether they were equipped for the teaching of Home Science.
2.2. GENERAL FACTORS TO CONSIDER IN USING TEACHING AIDS

Firstly, Romiszowski (1968) says that in using teaching aids the inclusion of irrelevant details should be avoided, secondly the teaching aids should concentrate on a specific point and should not include a lot of information.\(^ {17} \)

The teacher has to bear in mind as Ryazo Ito et. al. (1981) say that media or teaching aids do not dictate their use, only a teacher can decide upon the methods to use to employ the media. In other words, even with the teaching aids available, a teacher would still need to be thoughtful enough to know how to use the teaching aid during instruction.\(^ {18} \)

In using pictures the teacher should allow pupils to view the picture at the same time, otherwise it would be distracting if pictures were passed round the class while the teacher continued with the lesson. This is because the pupils will not be able to listen critically and look at the picture at the same time. The posters should be pinned on the wall or notice board in the class after use to act as a summary or reminder to the pupils of what has been learnt.
In using chalkboard, various writers feel that though universal, it is the most difficult teaching aid to use and one that has been most misused.

The teacher should write legibly on the chalkboard, he should write large letters for all pupils to see and to read. The work should be neatly organized and not crowded. Only simple illustration pictures should be drawn on the chalkboard.

Thirdly the room should be well lit to avoid glare. Finally the teacher should avoid obstructing pupils from seeing what he has put on the chalkboard.

In using Audio-visual materials the teacher should realize that the main idea is to bring to the class sounds and visuals which are significant to the learning process. The Audio-visual materials should supplement what is in the textbooks. Resources such as films, televisions are good where motion is important for comprehension. They make things immediate, they can increase or reduce size, they can bring distant things to the classroom. However, it has to be noted that they can give distorted information to pupils especially in cases where they magnify things that can otherwise not be seen by the naked eyes or they reduce things that are otherwise too large. The teacher is therefore
to ensure that he explains the actual states of things before they watch the films.

Jarolimek (1967) observes that in using textbooks, the teacher should bear in mind that although the children use the same textbooks, they do not have the same reading and intellectual ability. The teacher should note the difficult vocabularies in the textbook and explain them to the pupils before the reading begins. He/she should prepare follow up questions and provide additional books. Most important is that the slow readers should get special assistance.  

In the use of realia and presentation of realia, the teacher should allow children to handle the realia although he can simply demonstrate the use of fragile ones without the pupils handling them. The realia should be related to the area or unit of study.

Michaelis (1968) says that demonstrations should take into account the level of the pupils so that the highlighted ideas can be grasped. Again demonstrations should not be too long as this can lead to the loss of interest. Finally follow up activities should be organized.

Turning to the community resources, Jarolimek (1967) says that resource persons invited should talk on topics
that are related to what the class is learning. The teacher has to inform the resource persons long in advance, give them the topic, tell him the time available and the questions for discussion. The pupils also need to be informed on this.  

Trips if poorly planned can be wasting of time to both the teacher and the pupils. This is why Michaelis (1968) says that walking trips are easily planned, they save time and also make pupils critical observers of their immediate environment. He, however feels that trips should be planned with specific purpose in mind and things expected after the trip stipulated before pupils go out. Things like questionnaires should therefore be prepared before hand.  

SELECTION OF THE TEACHING AIDS

The teaching aids can be available in plenty, but the teacher needs some insight in the selection of appropriate teaching aids to use if his/her lesson is to be a success.

It is vital at this point to consider some of the factors that would guide a teacher in the selection of appropriate teaching aids. This is why Wendt (1957) says that:
"We teachers need to understand what each of the teaching materials will do and use it where it has greatest strength." 23

Various authors have varied factors that they feel should be considered in selection, for example Romiszowski (1974) Olson (1974), Jarolimek (1967) and Machaelis (1968).

1. Teaching aids should tally with the objectives to be achieved.

2. Teaching aids should involve the use of as many sensory perceptions as possible.

3. They should be suited to the developmental ages of the children. For example young children still need a lot of concrete things to explain a point, while the older people can quickly grasp abstract information without use of the concrete examples.

4. The teaching aids should cater for individual differences.

5. The teaching aids should be evaluated to ensure that they are up-to-date and also of good physical quality, e.g. books should be well printed, bound, whereas audio-visual aids need to have good quality sounds.

6. The available time for use of the teaching aids need to be considered, it would be of no use taking a 45-minutes film to a 30-minute lesson.

7. The sequential arrangement of the materials should be considered.
8. The level of difficulty of the instructional materials must be appropriate to the maturity of the children who are going to use them. They should not be too difficult or too simple.

9. The content of the material should be authentic, clear and should lead to ease of the understanding and help to develop critical thinking without leading to confusion.

10. The effort and expenses involved in using the material must be considered. Some materials can serve the same purpose of cheaper costs than others and also with less effort.

11. The popularity and authenticity of the suppliers of materials. Some suppliers might sell sub-standard teaching aids because they are only after financial gains.

12. Availability of the required resources can also limit a teacher's use of certain resources, especially if the supply is low.

13. Instructional methods to be used by the teacher can also dictate the choice of media, for instance the use of television or radio will be limited if teaching method is group discussion.

14. Teachers' character can influence the use of certain resources and not others. The teacher's fear or liking for certain aids will hinder or help their usage in a lesson.
15. Finally the selected materials or resources need to be those that will arouse interest in pupils, give accurate information/impression of size and depth, save teacher's time, help memory and stimulate imagination.

**SOURCES OF TEACHING AIDS**

Teaching aids can be provided to teachers or schools by various bodies. For example Teachers Advisory Centre, Ministry of Education, Ministry of Health and local community.

The researcher therefore tried to find out the various bodies that provide supplies to the schools and teachers with the teaching aids that they use. These aids can be gifts, purchased (bought), exchanged or loaned. First, materials can be loaned to the teacher or a school for a given period of time. Secondly, some materials can be purchased by the schools although some commercial organizations can supply materials to the school. Some resources can be in the community, for example resource persons in the community and utensils. These aids can be obtained from the community by the teachers if need be.

However, it would be appropriate if the school had their own varied materials to avoid inconveniences of borrowing.
STORAGE

Storage of the teaching aids is vital if the materials are to be used over a long time. If they are carelessly kept, they get easily damaged or they are not easily found incase they are needed again for future use by the teacher or pupils.

Ruck (1975) is of the opinion that open storage is good for easy accessibility of all. He feels that storage in drawers, cabinets and containers should be avoided as far as possible. If resources have to be stored in these enclosed places, then transparent material should be used for packaging. All the resources materials should be classified sequentially before storage.

MAINTAINANCE OF THE RESOURCES

American Association of school libraries (1975) reports that:

Good maintainance contributes largely to the comfort and efficiency of learners, teachers and staff. It also plays an important part in commercial and efficient management...

Further classified maintainance into three types:

1. Preventive maintainance that ensures longer life of materials and equipment.

2. Periodical inspection of all materials and equipment to prevent defect and repair damage.
3. Replacement of worn out materials and equipment whose repair would be more expensive than purchases.26

It is important that schools maintains the radios and equipment such as sewing machines and cookers. This can be done by servicing them regularly. The materials which are out of order should be repaired as soon as possible.

2.3. TEACHERS PERCEPTION OF THEIR NEEDS FOR RESOURCES/TEACHING AIDS

Under this section, attention is drawn to teachers' access to resources, their knowledge of how to use the resources/teaching aids and the influence of the syllabus on the use of the teaching aids. If the teacher has limited access to teaching aids, he might develop a negative attitude to their use.

American Association of Schools Libraries (1975) points out that:

"The users' first point of convenient materials in the media centre in his school".27

The teachers' media centre in schools would be convenient especially if he is ready to improvise. Again teachers will use the given resources according to their knowledge
and confidence. For instance, if a teacher does not know how to operate a projector he might not show films often, if he is not interested in learning how to operate the projector. This therefore leads to the overuse of some teaching aids chalkboards, textbooks and theirs. Ryozo et. al. (1981) rightly argued that:

"Teachers who have teaching aids, but lack interest may be poor instructors."^{28}

In other words, a teacher should have interest of learning how to effectively use all the available resources, without any bias. This goes further to say that imaginative teachers can do a better job even without using expensive resources.

"In the final analysis, what matters most is the knowledge, creativity, energy and devotion of teachers who makes the best use of whatever is available."^{29}

This implies that the success of the instruction with or without teaching aids depends on the teacher. It has to be noted that this does not wholly imply that a teacher can always successfully pass his subject content without necessarily using aids as Ryozo et. al. (1981) indicated:
"The more media is available to the teacher the more chances students have to fully comprehend the subject".  

Essentially, the suggestion is that the availability of the materials increases the chances of comprehension but that all depends on the imaginative nature of the teacher.

Teachers access to resources, knowledge of use, syllabus pressure, personal inclinations to a certain teaching aid are therefore some important factors that influence a teacher's perception of his needs for aids.

2.4. IMPROVISATION

Saunders (1974) says that:

"The aids you make yourself with your teaching and audience in mind will often be far more effective than costly materials designed for another situation".

Apart from the fact that the teacher makes the teaching aids with the audience in mind, improvisation can also take place in a case where the teaching aids are not available.

Alternatively, teaching aids as Saunders puts it might be available but not suitable for the circumstances
of the teacher and pupils.

It is important for the teachers to improvise by using the locally available materials such as food stuffs, clothes. and so on.

Teachers could meet with parents and arrange the ways of raising funds to buy the materials which can be used to make teaching aids. The parents who are able can contribute some of the locally available materials such as food stuffs to be used for cookery.

2. Compton's Encyclopaedia, Britanica, Division of Encyclopaedia.


4. Ibid; P. 152.


26. Ibid., p. 55.
27. Ibid., p 63.
29. Ibid., p. 225.
30. Ibid., p. 227.
31. Ibid., p. 227.
33. Ibid., p. 42.
CHAPTER THREE

DESIGN AND PROCEDURE OF THE STUDY

3.0. INTRODUCTION

The foundation of this study is in chapter one and two. Chapter one dealt with introduction, statement of the problem, objectives of the study, limitations and significance of the study. Chapter two dealt with the review of the related literature.

The third chapter deals with the detailed procedure used for data collection, the population, sampling technique, the tools used during the study, the administration of the instruments to the respondents and the plan for data analysis. Generally this was a survey design and only descriptive statistics such as frequency tables and percentages were used in data analysis shown in chapter four.

3.1. INSTRUMENTATION (TOOLS USED)

The tools used were:

1) Questionnaires
2) Classroom observation schedule
3) Interview schedule

1. Questionnaires

There were two parts of the questionnaire as indicated on Appendix III. The first part dealt with
general or routine information such as the name of the school, number of pupils and so on. Part two dealt with the main aspects of the research on teaching aids. Some of the questions were YES/NO, others were multiple choices from which one or several responses could be given, and others were open-ended to allow teachers to express themselves briefly.

In all, there were 8 sub-headings to the questionnaire and each sub-heading had several items. There were 45 items in the questionnaire.

2. Classroom Observation Schedule:

There was a 14 item instrument which also consisted of two parts. The first one examined general information, the second part sought to verify the teaching aids teachers use. It was to be completed by the researcher during class observation of the teachers concerned.

A copy of the classroom observation schedule can be seen in Appendix III.

3. Interview Schedule:

There was a ten item instrument which dealt with teachers' reasons for using teaching aids. The researcher also sought to find out the factors that hindered teachers
from using the teaching aids. Some of the questions here were open-ended and others called for YES/NO responses, (Appendix III)

3.2. POPULATION DESCRIPTION AND SAMPLING TECHNIQUES USED

Home science subject is taught in the upper section of primary schools (that is from standard 4 - 8) in the whole country. The population of this study therefore, was taken from teachers, teaching the upper primary section.

The sample of this study consisted of six schools which were selected from the population of 41 schools in Northern Division in Nairobi. These six schools excluded those schools which did not have standard 8, special schools and special units such as deaf and dumb, mentally retarded and so on.

The selection of the sample was based on pre-independence schedules as follows:

Schedule C - formerly European high cost schools.
Schedule B - formerly Asian Schools
Schedule A - formerly African schools with few facilities and the newer Assisted Schools - These are given teachers by the government, but the community maintains the
the schools. For example Catholic Sisters and Asian Communities are their sponsors.

The researcher selected two schools from group A, two from group B one from group C and one Assisted school. All these schools were taken from Northern division in Nairobi.

Only teachers who were teaching Home Science from standard 4 - 8 were the subjects of the study. From each school four Home Science teachers were used in the study. Since there were six schools the total sample of the study was made up of 24 Home Science teachers.

Pupils of standard 4 and 8 were the subjects during observation by the researcher. This direct contact with the teaching aids as they were used during the lesson was the researcher's concern.

Only four Home Science lessons were observed to check the utilization of teaching aids. This was done in two schools.

3.3. METHOD OF DATA COLLECTION

The following paragraphs give a detailed procedure of the data collection procedure that was used. Apart
from the tools described in 3.2, the researcher was given a letter by the coordinator. After this the researcher went to the City Education office to ask for a written permission to visit the City Commission schools. The researcher also wanted to get a list of primary schools in Northern Division so that she could select her sample.

It was after obtaining these documents, that the schools of study were visited the first time. On this visit to each school, the letter from City Education officer was given to the headteacher as an introductory letter. He/She was left with a copy of the letter for record purposes. During this visit a specific date was fixed for the second visit when the researcher could meet the Home Science teachers.

At the second visit, the questionnaires were given to the teachers under the study. The researcher went through the questionnaire with the teachers explaining to them what they were supposed to do. During this visit the teachers gave the researcher a date when she would collect the questionnaires.

Four teachers (two from standard 4 and two from standard 8), were observed while they were teaching in
the class. These teachers were from two primary schools.

Four teachers (two from standard 5 and two standard 7) were interviewed. These teachers were from two primary schools. The whole research took the above form until all the information was collected.

3.4. DATA ANALYSIS PLAN

After data had been obtained the researcher dealt with items in the instruments and tabulated those that could be tabulated. The analysis was under such headings as selection, supply, storage of teaching aids, and problems faced in the use of teaching aids. Tallying was first done to determine the number of respondents to each variable as per the tables. The results were then converted into percentages. After each table, the researcher wrote a brief discussion basing all arguments on the information on the tables.
CHAPTER FOUR
DATA ANALYSIS AND INTERPRETATION

4.0 INTRODUCTION

The purpose of this study was to find out the teaching aids used by teachers in teaching Home Science in primary schools in Northern Division in Nairobi. This chapter shows the statistical analysis of information collected. Descriptive statistics were used, that is frequency tables and percentages. From this analysis interpretation was done leading to the discussion of tabulated information.

4.1 SELECTION OF TEACHING AIDS

The objective here was to find out the criteria used by Home Science teachers in the selection of teaching aids. Below is the table showing the results:

Table IV. 1 Showing the criteria used in the Selection of Teaching Aids

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Number of Teachers out of 24</th>
<th>Percentage of teachers using each selection criterion</th>
<th>No Response (Percentages)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson objectives</td>
<td>22</td>
<td>91.7</td>
<td>8.3</td>
</tr>
<tr>
<td>Nature of the topic</td>
<td>22</td>
<td>91.7</td>
<td>8.3</td>
</tr>
<tr>
<td>Class size</td>
<td>7</td>
<td>29.2</td>
<td>70.8</td>
</tr>
<tr>
<td>Age of pupils</td>
<td>19</td>
<td>79.2</td>
<td>20.8</td>
</tr>
<tr>
<td>Expense of material/ Effort</td>
<td>2</td>
<td>8.3</td>
<td>91.7</td>
</tr>
<tr>
<td>Time available</td>
<td>13</td>
<td>54.2</td>
<td>45.8</td>
</tr>
</tbody>
</table>
Table IV 1 shows the criteria that teachers used in the selection of teaching aids. Teachers were allowed more than one response in this selection. Therefore the number of teachers does not add up to 24 teachers or 100% teachers, since one teacher could chose more than one criterion used in the selection of teaching aids.

The table shows that a good majority of the teachers considered lesson objectives and the nature of the topic when selecting the teaching aids. Only 8.3% of the teachers did not think that those two factors were important to consider in the selection of teaching aids.

However, the researcher was of the opinion that class size should be an important factor to consider. This is because with a large class the teacher would have to draw large and legible charts so that every child can see it clearly. Whereas if there are only few pupils in the class, they would sit close to the teacher. So they would be able to see the chart clearly even when it is written with small letters. Therefore, it is important to consider the class size when selecting the teaching aids.
Table IV.2 Showing the reasons why there is need to Select teaching aids carefully as stated by teachers

<table>
<thead>
<tr>
<th>Reasons for selection of each Criterion</th>
<th>Number of teachers out of 24</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Time available</td>
<td>4</td>
<td>16.7</td>
</tr>
<tr>
<td>2. For achievement of objectives</td>
<td>16</td>
<td>66.7</td>
</tr>
<tr>
<td>3. To help good planning and preparation</td>
<td>7</td>
<td>29.2</td>
</tr>
<tr>
<td>4. Age of the pupils helps to prepare motivating teaching aids and hence better understanding</td>
<td>14</td>
<td>58.3</td>
</tr>
<tr>
<td>5. Easily attained aids save time.</td>
<td>2</td>
<td>8.3</td>
</tr>
<tr>
<td>6. Class size help in preparing enough materials for all</td>
<td>4</td>
<td>16.7</td>
</tr>
<tr>
<td>7. No response</td>
<td>6</td>
<td>25.0</td>
</tr>
</tbody>
</table>

The result showed that various teachers gave reasons for selecting the criteria as shown in the previous table.

From the above table it appears that twenty-five percent of the teachers could not support the criteria they had used for selecting their teaching aids. For example 29.2% of the teachers chose class size as an important factor to consider in the selection of teaching aids, but in table IV.2 only 16.7% of the teachers could give appropriate reason for considering class size as an important factor in the selection of teaching aids. It is seen that the majority of the teachers select their teaching aids mechanically.
This was evident during the interview whereby majority of the teachers interviewed complained that they had very many lessons per week and hardly had time to prepare teaching aids. Yet very few teachers chose availability of time as the reason they considered when selecting the criteria they used in the selection of teaching aids.

Thirty three percent of the teachers responded to the fact that they considered the expense of effort involved in preparing and using teaching aids before selecting.

Although a few teachers indicated that easily attained teaching aids are better because they save time for teachers and pupils, the researcher felt that this was a reason that more teachers could have considered since many of them complained about time.

Table IV.3 Showing teachers response to the availability of time to use teaching aids and cover the syllabus

<table>
<thead>
<tr>
<th>Responses</th>
<th>Number of teachers out of 24</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>9</td>
<td>37.5</td>
</tr>
<tr>
<td>No</td>
<td>14</td>
<td>58.3</td>
</tr>
<tr>
<td>No Response</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>100%</td>
</tr>
</tbody>
</table>
The table shows that fifty three teachers lamented that use of teaching aids in the class took a lot of time and so it is impossible to cover the syllabus which is too wide.

Therefore, the teachers noted that although teaching aids help in understanding the topic and hence better retention on the part of pupils, they were too demanding in terms of time and money.

4.2 . SUPPLY

The objective here was to investigate whether Home Science teachers' get their teaching aids from the Teachers Advisory Centre in Nairobi, Kenya Institute of Education (K.I.E.) or local community. Below is the table showing the forum for meeting.

Table IV.4 Showing the Forum for Meeting with Fellow Teachers to share ideas on Production and use of Teaching Aids

<table>
<thead>
<tr>
<th>Forum</th>
<th>Number of teachers out of 24</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teachers' Advisory Centre</td>
<td>9</td>
<td>37.5</td>
</tr>
<tr>
<td>2. Kenya Institute of Education</td>
<td>2</td>
<td>8.3</td>
</tr>
<tr>
<td>3. Local Community</td>
<td>3</td>
<td>12.5</td>
</tr>
<tr>
<td>4. Schools</td>
<td>15</td>
<td>62.5</td>
</tr>
<tr>
<td>5. None</td>
<td>4</td>
<td>16.7</td>
</tr>
</tbody>
</table>
The table above shows the forum teachers use to meet and share their ideas about the production of teaching aids. Teachers were allowed to choose more than one forum in this section. Therefore the number of the teachers does not add up to 24 teachers or 100% of teachers.

Thirty seven percent of the teachers who responded to the questionnaire indicated that, they had visited the Teachers' Advisory Centre. It appears that the Centre is only open to the teachers when they had been invited for a workshop and seminars. This is because although majority of teachers indicated that teachers' Advisory Centre was less than seven kilometres from the schools visited, table IV.4 showed that only 37.5% of the teachers visit the Centre regularly.

Majority of the teachers reported that they usually meet in schools. That is a particular school is chosen as the venue for the meeting.
Table IV. 5 Showing the Frequency of Meetings in Any of the Forums

<table>
<thead>
<tr>
<th>Frequency in Month</th>
<th>Number of Teachers out of 24</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 4</td>
<td>5</td>
<td>20.8</td>
</tr>
<tr>
<td>4 - 8</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8 - 12</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Rarely (only if there is need)</td>
<td>16</td>
<td>66.7</td>
</tr>
<tr>
<td>No Response</td>
<td>3</td>
<td>12.5</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The result indicates that majority of teachers rarely meet. They only meet when there is an urgent need such as setting the Divisional or District mock examination.

This showed that teachers hardly meet to discuss issues on how to improvise and use of teaching aids. As a result of this Home Science teachers use individual method of teaching since they hardly meet to discuss the methods they should use in teaching Home Science.

However, it was encouraging to note that a few teachers met at least once in a term (after every four month).
4.3 IMPROVISATION AND ACQUISITION OF TEACHING AIDS

The objective here was to find out how Home Science teachers acquire teaching aids. The researcher tried to find out whether the teaching aids used by Home Science teachers were bought, made, borrowed, exchanged or given as gifts to the schools. The table below shows the results.

Table IV. 6 Showing Acquisition of Teaching Aids

<table>
<thead>
<tr>
<th>Means of Acquisition</th>
<th>Number of Teachers out of 24</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bought</td>
<td>20</td>
<td>83.3</td>
</tr>
<tr>
<td>Made</td>
<td>11</td>
<td>45.8</td>
</tr>
<tr>
<td>Borrowed</td>
<td>3</td>
<td>12.5</td>
</tr>
<tr>
<td>Exchanged</td>
<td>2</td>
<td>8.3</td>
</tr>
<tr>
<td>Gifts</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No Response</td>
<td>1</td>
<td>4.2</td>
</tr>
</tbody>
</table>

The result indicates that most of the materials the Home Science teachers use were bought as majority of teachers reported. Forty five percent of teachers showed that the materials they use for teaching are locally made by both teachers and pupils.

Minority of teachers indicated that they borrow teaching aids from their fellow colleagues within the same
school. A few teachers showed that they exchanged teaching aids with their friend teachers from the neighbouring school.

Finally it was noted that there was no teaching aids which were given as gifts to the schools visited. Although majority of teachers indicated that teaching aids were bought by both parents and the school, most teachers complained that some parents are reluctant to buy the materials for their children when they are asked to buy by the school. For example, materials for making pyjamases' suit in standard seven.

4.4 STORAGE

The objective was to investigate how the Home Science teachers store their teaching aids for future use. The researcher tried to find out where the teaching aids are stored in the school. For example school, store, Library, staffroom, classroom cupboards, classroom walls or Home Science room. The table below shows the results.

Table IV. 7 Showing the System of Storage

<table>
<thead>
<tr>
<th>System of Storage</th>
<th>Number of Teachers out of 24</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Store</td>
<td>11</td>
<td>45.8</td>
</tr>
<tr>
<td>Library</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Staffroom</td>
<td>6</td>
<td>25.00</td>
</tr>
<tr>
<td>Classroom Cupboards</td>
<td>19</td>
<td>79.2</td>
</tr>
<tr>
<td>Classroom Walls</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td>Home Science Room</td>
<td>3</td>
<td>12.5</td>
</tr>
</tbody>
</table>
Teachers were allowed to choose more than one item in this section. Therefore, the responses can not add up to 24 teachers or 100% teachers.

Majority of teachers indicated that they stored their teaching aids in the classroom cupboards. This was because all the classrooms had cupboards.

It was noted that all the schools visited had a staffroom with tables and chairs for teachers. Only twenty five percent of teachers reported that they stored their teaching aids in the staffroom.

Forty six percent of teachers showed that they stored their teaching aids in the school store. These teaching aids were mostly textbooks and exercise books.

It was noted that all the schools visited did not have a library room. It was encouraging to note that three schools out of the six schools visited had Home Science room where teachers stored their teaching aids. For example, sewing machines and other Home Science equipment such as cookers, scissors, needles and cooking utensils.

All the classes observed (standards 4 and 8) had charts pinned on the walls. However the researcher
felt that those charts are better when they are put at the back to minimize the disruption of pupils' attention during the lesson in which reference is not made to those particular charts.

It was also noted that charts can loose meaning and become part of the wall that does not attract the attention of the pupils. This can happen if the charts are left for a long time on the wall.

4.5 TRIPS AND RESOURCE PEOPLE

The objective here was to find out whether the Home Science teachers use the community resources around the school as teaching aids. This can be done by taking pupils for walking trips (short trips), long trips and by inviting resource persons to address pupils.

Below are the results:

Table IV.8a Showing Trips

<table>
<thead>
<tr>
<th>Trips</th>
<th>Number of Teachers out of 24</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>13</td>
<td>54.2</td>
</tr>
<tr>
<td>No</td>
<td>11</td>
<td>45.8</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>100.00</td>
</tr>
</tbody>
</table>

The results indicates that fifty four percent of
teachers had taken pupils out for short trips or long trips. Forty six percent of teachers showed that they had never taken pupils out for trips because of the problem of finance, transport and time.

<table>
<thead>
<tr>
<th>Resource Persons</th>
<th>Number of Teachers out of 24</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>12</td>
<td>50.00</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>41.7</td>
</tr>
<tr>
<td>No Response</td>
<td>2</td>
<td>8.3</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Half of the teachers under this study showed that they had invited resource persons to their classes, for example policemen, nurses and nutritionists.

A few teachers did not give any response about inviting resource persons. The reason for this might be that they did not know about resource people in their local community.

4.6 AUDIO-VISUAL MATERIALS, REALIA AND READING MATERIALS (GENERAL SUMMARY)

The objective here was to find out the type of teaching aids that are commonly used by the Home Science teachers when
teaching Home Science in the primary schools of Northern Division in Nairobi. Below is a table showing the results:

**Table IV.9 Showing the Audio-Visual Material and Realia in Schools**

<table>
<thead>
<tr>
<th>Audio-visual Materials</th>
<th>Number of Schools out of 6</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio</td>
<td>5</td>
<td>83.3</td>
</tr>
<tr>
<td>Charts</td>
<td>6</td>
<td>100.00</td>
</tr>
<tr>
<td>Cassette player</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Projector</td>
<td>1</td>
<td>16.7</td>
</tr>
<tr>
<td>Realia</td>
<td>6</td>
<td>100.00</td>
</tr>
<tr>
<td>Equipment and Cooking Utensils</td>
<td>2</td>
<td>33.3</td>
</tr>
<tr>
<td>Textbooks</td>
<td>4</td>
<td>66.7</td>
</tr>
</tbody>
</table>

The table above indicates that there was a very heavy dependence on the use of realia and charts in all the schools visited. It was noted that the majority of teachers reported that they had radios in their schools.

During the interview, it was found that although many schools had radios, they were not enough for all the classes. This was because all the schools had one to three radios and some of them were out of order. This showed that radio lessons were not adequately utilized.
All the schools visited did not have a cassette player and only one school had a projector. As a result of this, schools were not able to borrow cassettes or films from the Kenya Institute of Education, for example cassettes of the past radio lessons and educational films.

Only a few schools had Home Science rooms and equipment such as sewing machines, cooking utensils, needles and scissors.

Sixty seven percent of the schools visited had the recommended Home Science textbooks which had been produced by Kenya Institute of Education but most of the interviewed teachers complained that these textbooks are not enough due to the large classes.

Table IV.10 Showing a Summary of problems Encountered in Acquisition of Books, Organization of Trips and Invitation of Resource Persons

<table>
<thead>
<tr>
<th>Problems</th>
<th>Number of Teachers out of 24</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Books</td>
</tr>
<tr>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>Lack of Supply</td>
<td>10</td>
</tr>
<tr>
<td>Transport</td>
<td>-</td>
</tr>
<tr>
<td>Money</td>
<td>9</td>
</tr>
<tr>
<td>Time</td>
<td>2</td>
</tr>
</tbody>
</table>
A few teachers expressed that there was fear of accidents when pupils were taken out on trips. Lack of instructions was indicated as another problem by teachers. They complained that there was no list of recommended resource persons and places to be visited.

4.7. GENERAL PROBLEMS ENCOUNTERED IN ACQUISITION OF BOOKS

The objective here was to identify the problems Home Science teachers encounter in acquiring teaching aids such as textbooks.
There are several problems that teachers face in acquisition of books as summarized in table IV. 10.

Although some of the recommended textbooks by Kenya Institute of Education had been produced, they are still not enough due to large classes. Some of the recommended Home Science books for certain classes like standard five are not yet published. This results in teachers using Malkiat Singh's books which have sketchy information in many cases.

Teachers reported that the city commission through Kenya School Equipment Scheme no longer supplies books and other teaching materials to schools. This meant that pupils had to buy their own textbooks especially if the school was not ready to buy all the textbooks which teachers wanted to use. It was difficult to give pupils Home Science work from the textbook because many pupils did not have this. This was very common in schools that are situated within the low income catchment area.

Some books were reported to be too expensive to buy such as "Examination Encyclopaedia" by Malkiat Singh, which contained all the subjects that were done in Kenya Certificate of Primary Education at the end of standard eight.
There are too many pupils per class and this inhibits the buying of books.

4.8. GENERAL PROBLEMS ENCOUNTERED BY TEACHERS IN THE COURSE OF ORGANIZING TRIPS

The objective was to identify the problems that teachers faced in acquiring teaching aids such as organizing short and long trips. There are several problems as are summarized in table IV.10.

The major problem as reported by half of the teachers was money. The teachers reported that pupils have to contribute money to go out on trips. This was because most primary schools visited did not have a school vehicle. Therefore when they had to go out for long trips a bus or two had to be hired and this meant great financial implications.

There are too many pupils in a class or standard. Therefore, during trips there was need for many teachers to accompany the pupils. This meant that more time was wasted as most of the classes would be left without teachers or they are put together to form bigger classes which are not easy to manage. This also meant that more buses had to be hired and so more money was needed.

All teachers reported that they had many subjects to teach, as a result they have many lessons in a week.
Therefore, they can not get time to organize trips properly or make a pre-visit to the places that are to be visited. This is a sad situation as Sifuna (1975) observed:

"... heavy teaching can frustrate the effort of a primary school teacher who might be genuinely interested in promoting modern activity methods of teaching"¹

Lack of accommodation during long trips led to travelling to the venue and back within the same day. This was reported to be very exhausting. It is even made worse by the fact that these pupils are day scholars and the teachers have to ensure they were safely dropped in their residential places after the trip especially if it was in the night.

A few teachers expressed fear as a problem because taking pupils out for a trip meant risks of accidents when pupils are crossing roads, loosing sight of pupils especially if they were too many. Majority of the interviewed teachers agreed that pupils' curiosity during trips can make the teachers lose sight of them easily.

Administrators or school heads did not take educational trips seriously and so they prefered organizing sight seeing trips for pupils once a year as a means of relaxation.
4.9 GENERAL PROBLEMS ENCOUNTERED IN USING RESOURCE PERSONS

The objective was to identify the problems Home Science teachers encounter in acquiring teaching aids such as inviting resource persons to their classes. There are several problems as summarized in table IV.10.

Time was reported as a major problem because some of the resource persons were too busy to get time to visit the school. Therefore they were unwilling to turn up when they are invited.

The duration of the lesson is limited to the normal teaching lesson which is too short and therefore did not allow for adequate use of the resource person.

There is lack of instructions as majority of the teachers indicated that Kenya Institute of Education had not issued them with guidelines of the sort of people they should invite. This accounted for the negative attitude the heads and class teachers have towards resource people.

Suspicion was another major problem which led to unreliable information given by the resource people because they are never sure whether they are invited in good faith or not.
Some of the resource persons would need some payment especially for transport to the schools and back. This makes it difficult because the schools do not have money and so they have to ask pupils to contribute.

Teachers are too busy with the routine classroom work and school activity that they hardly get time to organize for resource persons to be invited. Therefore very few schools or teachers make use of the resource persons in their community.
NOTE

CHAPTER FIVE

SUMMARY AND CONCLUSION

5.0 INTRODUCTION

The purpose of this study was to find out the teaching aids used by teachers in teaching Home Science in primary schools in Northern Division in Nairobi. This chapter deals with the summary of the research findings, the conclusions based on the findings, the implications of the findings, recommendations and suggestions for further research.

5.1 SUMMARY OF THE FINDINGS

The following are the findings of this study.

1) Teachers accepted the importance of using teaching aids in their lessons, but they felt that the syllabus was too wide and therefore it limited the degree of using teaching aids.

2) There were no frequent meetings for discussing the use of teaching aids and means of improvisation and therefore teachers used their own methods of teaching. This was indicated by the fact that twenty one percent of the teachers reported that they meet once a term while sixty seven percent of the teachers said that they only met when there was an urgent need, for example setting the Divisional Examination.
3) The Majority of teachers indicated that most of the materials used as teaching aids were commercially made materials and the others were locally made by both pupils and teachers. Teachers do not exchange teaching aids and also schools do not receive teaching aids/materials as gifts from the Ministry of Health, voluntary organizations and the Ministry of Education.

4) Most of the teaching aids were stored in the classroom cupboards. This was indicated by majority of the teachers.

5) Half of the teachers indicated that they made use of resource persons in the teaching of Home Science despite the problems they encountered when inviting them. For example lack of time, money and instructions from the Ministry of Education or Kenya Institute of Education were the major drawbacks.

6) Trips were generally organized once a year for each class in the schools. The trips were mainly for enjoyment and relaxation. The problems encountered in organizing trips included time, transport and finance.

7) There was a lot of dependence on charts as they were easy to make. The environment was also used to a large extent as was observed from the variety of realia being used in teaching Home Science. This might be due to lack of cassette players and projectors in most of the schools which made it impossible for these schools to borrow films or cassettes from Kenya Institute of Education and other educational bodies.
8) Some of the general problems encountered in acquisition and use of teaching aids included finance, the large number of pupils in a class, time and lack of instructions or guidance from Kenya Institute of Education on what was expected. For example the books to be used, suggestions on the resource persons to be invited and industries which could be visited during the trips.

5.2. CONCLUSIONS

1) One of the objectives of this study was to find out the available teaching aids for teaching Home Science. The result of this study was that reading materials available to the Home Science teachers were published by different authors and a few of the recommended books by Kenya Institute of Education had been produced.

Apart from the few recommended books other books in the market were randomly bought by teachers, though they were not sure whether the materials contained in the books were relevant to the syllabus as was intended by its designers. Non-reading materials available to the teachers were mainly realia and charts.

Radios were found in five out of six schools that were visited. Unfortunately the radios were not enough for all streams in the school.
Finally resource persons and trips had not been utilized maximally as teaching aids in the teaching of Home Science.

2) The other objective of this study was to find out the accessibility of the teaching aids, how they were acquired and stored. The result of this study indicated that although the schools visited were less than seven kilometres from the Teachers' Advisory Centre only thirty eight percent of the teachers visit the Centre. The majority of teachers rely on the locally and commercially made materials:

The storage of these materials was mainly in the classroom cupboards as was indicated by the majority of teachers. Direct observation of standards 4 and 8 showed that all classes had cupboards. Lesson observation indicated that teachers used chalkboard, chalk and pinned charts on the walls after they are used in the lesson.

3) Another objective of this study was to find out how the teaching aids are supplied to the school, especially textbooks. The study showed that textbooks were not supplied to the schools by the Kenya School Equipment Scheme and that pupils were expected to buy their own books. The schools therefore only buy teacher's copies
of the textbooks.

4. Finally, it was the intention of the researcher to find out the criteria used by teachers to select their teaching aids. It was noted that the majority of the teachers considered lesson objectives and the nature of the topics in their selection of the teaching aids. The minority of the teachers considered class size as an important variable in selection of the teaching aids to use.

5.3. IMPLICATIONS OF THE FINDINGS

The findings implied that although the objectives of using teaching aids in teaching Home Science were noble, lack of proper co-ordination and instruction might lead teachers to resort to the traditional lecture methods of teaching. The problem was that, even if they were to resort to traditional method, they would still be confused because teachers did not have textbooks with detailed materials.

Teachers also did not have any guidance on which resource persons they would invite and which places they would take the pupils for trips.

This research implied that perhaps the Kenya Institute of Education had not followed up the implementation of Home Science to avoid any confusion. If this
implementation was followed closely and spread all over the schools, then it is most likely the syllabus which was too wide would have been reduced to allow time for the use of teaching aids.

The heavy use of charts as teaching aids implied that if care was not taken the walls would be overcrowded with charts and eventually they would lose meaning. This showed that there was need to change charts as often as possible.

Due to lack of radios in some schools and the few radios in the schools that had, then it was implicit that radio lessons were not taken seriously by many schools. For this reason the enthusiastic teachers were forced to carry their own radios to the class.

From the thirty six percent of teachers who reported that they had visited the Teachers' Advisory Centre it was seen that this Centre was unpopular among Home Science teachers.

Only twenty nine percent of the teachers indicated that they considered class size in the selection of teaching aids. This implied that the majority of teachers were never concerned with bringing enough teaching aids to
to the class. As a result of this pupils can not understand the information in the teaching aids because they do not have direct contact with the teaching aid.

5.4. RECOMMENDATIONS:

The following are the recommendations of the present study:-

1) It is important that teachers or schools should be served with a list of the recommended books so that teachers know the important ones to buy.

2) It is necessary that teachers are given guidance on the type of resource persons to be invited for particular classes.

3) Radio lessons should be utilized by all the schools so that pupils all over the country can have a chance of listening to the radio teacher. This is possible with upper classes because they do the same things.

4) There is need to consider the syllabus so that some aspects can be reduced in order to give room for the use of teaching aids.

5) There is ardent need for professional guidance and supervision so that teachers know how to organize the practical aspects of teaching Home Science. This can be
organized through workshops and seminars— at Teachers' Advisory Centres, so that teachers can have a chance of visiting the Centre regularly.

6) The average teaching load of the teachers should be reduced, so that they have enough time to plan their lessons effectively and prepare appropriate and relevant teaching aids and take pupils out on trips.

7) Teachers should meet at the Teachers' Advisory Centre to compile reading materials which they can use instead of relying on the publishers only.

8) There should be a means of getting funds specifically for Home Science so that relevant teaching aids can be bought with ease, for example food stuffs, cooking utensils, cookers and sewing machines.

9) Use of projectors and cassette players should be encouraged as preparation in each school to enable teachers and pupils to listen to past radio lessons. This would greatly boost the services of the few radios available in schools.

5.5. SUGGESTIONS FOR FURTHER RESEARCH

1) This study was limited to only six schools in one Division in Nairobi District and as such further and related research could be done in other Divisions in
Nairobi.

2. The study was limited to urban schools and so further related research could be done in rural schools, to find out whether the findings in urban schools apply to the rural schools.

3. More intensive investigations could be done on the attitude of the teachers and headteachers in relation to the use of the resource people and trips as teaching aids.

2. Compton's Encyclopaedia, Britania, Division of Encyclopaedia.


10. Ominde; The Kenya Education Commission

11. Page P. David; Theory and Practice of Teaching

12. Romiszowski, A. J., The Selection and Use of
Instructional Media; Kogan Page, 1974.

13. Ruck, J., Resources and Resource Centre; Ward Lock
Educational, 1957.


15. Sifuna D. N., Revolution in Primary Education,
Nairobi, East African Literature Bureau,
1975.

Nottingham Basel Blackwell.

17. Ministry of Education: Annual Education Report,
Dear Sir,

RE: ASSISTANCE TO COLLECT SOME DATA FOR M.ED. (PTE) RESEARCH

MR/MISS/MRS. G. K. KARIANGI

is a bonafide student of KENYATTA UNIVERSITY doing his/her M.Ed. (PTE). As a part fulfilment of the course, he/she is supposed to carry out a small scale research project. So, please assist him/her, in a way you can, in collecting information.

Please rest assured that the information given will be used only for educational purpose.

Thank you for your help in anticipation.

[Signature]

Project Supervisor
Faculty of Education
Kenyatta University.

[Signature]

Prof. M.M. Patel
Course Co-ordinator
M.Ed. (PTE) Programme
Dear Sirs/Madam,

RE: PERMISSION TO CARRY OUT RESEARCH
GRACE G. KARINGITHI

This is to inform you that Mrs. Karingithi who is a bonafide student of Kenyatta University has been given permission to carry out a research for her M.E.D(PTE) Course.

This permission is granted with the understanding that Mrs. Karingithi will submit a copy of her findings for our records and necessary action.

You are requested to make the necessary arrangements such that the work is done during the most convenient time.

Yours faithfully,

[Signature]

J. W. Ndungu
Ag. Asst. Chief Adviser to Schools
for: CITY EDUCATION OFFICER, NAIROBI

JWN/ENG

c.c. Divisional Adviser(N)
APPENDIX III

QUESTIONNAIRE FOR HOME SCIENCE TEACHERS

THIS QUESTIONNAIRE SEEKS INFORMATION ABOUT SELECTION, SUPPLY, MAINTAINANCE AND IMPROVISATION OF TEACHING AIDS/RESOURCES FOR HOME SCIENCE AND PROBLEMS ENCOUNTERED IN THE USE OF THESE MATERIALS.

PLEASE RESPOND TO ALL THE QUESTIONS AS HONESTY AND ACCURATELY AS POSSIBLE SINCE THE INFORMATION YOU GIVE, WILL BE TREATED AS STRICTLY CONFIDENTIAL. DO NOT WRITE YOUR NAME.

N.B.

SOME QUESTIONS MAY HAVE MORE THAN ONE ANSWER

I. PERSONAL INFORMATION

a) Name of the School ----------------------------------

b) Class -----------------------------------------------

c) Number of pupils ------------------------------------

d) The teaching aids used in teaching Home Science in this class ------------------------------------------

   (i) --------------------------------- (iii) ---------------

   (ii) --------------------------------- (iv) ---------------

II SELECTION

a) What criteria are used by teachers in the selection of teaching Aids/materials (indicate by a tick(ticks))

   (i) Lesson objective ( )
(ii) Nature of the topic ( )
(iii) Class size ( )
(iv) Age of pupils ( )
(v) Expense/effort ( )
(vi) Sequence of material ( )
(vii) Time available ( )

b) For each of the criteria ticked above give reasons their consideration in selection.

(i) ---------------------- (v) ----------------------
(ii) ---------------------- (vi) ----------------------
(iii) ---------------------- (vii) ----------------------
(iv) ----------------------

c) What part do you play in the selection of Teaching Aids? ----------------------

d) If you play no part in selection state why? ----------------------

3 SUPPLY/SOURCE

a) How far is the nearest Teachers' Advisory Centre from your school? (State the exact or approximate distance) ----------------------

----------------------
b) Do you make use of this facility on a regular basis?

YES ( ) NO ( )

c) If your answer to b above is "no" state why -------------------------------

-----------------------------------

d) Who purchases the instructional materials? -------------------------------

-----------------------------------

e) Are the materials used in your school? Indicate by ticks(s)

(i) Bought ( )

(ii) Made ( )

(iii) Borrowed ( )

(iv) Exchanged ( )

(v) Gifts ( )

f) If they are gift state from whom or where? -------------------------------

-----------------------------------

g) If exchanged or borrowed, specify the lender or with whom they are exchanged -------------------------------

-----------------------------------
h) Are the Home Economics materials especially textbooks; supplied in sufficient numbers?

YES ( )     NO ( )

i) If the materials are to be borrowed or exchanged, who organizes for this to be done?

4. IMPROVISATION

a) Do you get opportunities to meet and share ideas on production and use of materials with fellow Home Science Teachers?

YES ( )     NO ( )

b) If the answer to "a" is "Yes" where is this forum?

(Indicate by tick/s)

(i) Teachers' Advisory Centre (TAC) ( )
(ii) Kenya Institute of Education ( )
(iii) Local Community ( )
(iv) School ( )
(v) Ministry of Education ( )
(vi) Others, specify -----------------------------

-----------------------------------------------
c) How often do you meet?
   (i) Regular basis
   (ii) Rarely

d) If regularly, how regular is this (monthly basis, fortnightly etc)


e) If answer to "a" is "No", give reasons,
   (i) 
   (ii) 

f) Are some of the materials used, made locally?
   YES ( ) NO ( )

f) If then "f" is "YES", who makes them?
   (Indicate by tick/s)
   (i) Teacher ( )
   (ii) Pupils ( )
   (iii) Local community experts ( )
   (iv) Others, specify ____________________________

5 STORAGE

a) Where do you store the materials after use?
   (Indicate by tick/s)
   (i) School store ( )
   (ii) Library room ( )
(iii) Staffroom
(iv) Classroom cupboard
(v) Any other, Specify ————

b) If you have more than one answer to "a", indicate the materials and place for storage.

<table>
<thead>
<tr>
<th>Materials</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>————</td>
</tr>
<tr>
<td>(2)</td>
<td>————</td>
</tr>
</tbody>
</table>

C) Are the materials labelled before storage?

YES ( ) NO ( )

6 MAINTAINANCE

a) What system is used for keeping a check on materials (e.g. files, book, inventory etc)

b) Who repairs these materials/equipment?

c) Is there a person employed or a teacher charge with the responsibility of checking the state of all materials for teaching?

YES ( ) NO ( )
d) What are some of the duties of the person named in "C"?

7. PROBLEMS ENCOUNTERED

a) List some of the problems you encounter in acquiring and using books and audio-visual materials
   (i)  
   (ii)  
   (iii)  
   (iv)  

b) Which are some of the problems you encounter in organizing for trips?
   (i)  
   (ii)  
   (iii)  
   (iv)  

c) What are some of the problems you encounter in organizing to have resource people to come and talk to your Home Science class?
   (i)  
   (ii)  
   (iii)  
   (iv)  

8. GENERAL QUESTIONS

a) Do you make use of resource people in your teaching?

YES ( )  NO ( )

b) If the answer to a is NO, state why
-----------------------------------------------

-----------------------------------------------

c) If the answer to a is YES, list down the types of people you have so far invited (e.g. policemen, doctors, nurses, lecturers etc)

(i) -----------------------------------------------
(ii) -----------------------------------------------
(iii) -----------------------------------------------

d) Give reasons or criteria for inviting each of those listed down in "C"

<table>
<thead>
<tr>
<th>Person</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i)</td>
<td></td>
</tr>
<tr>
<td>(ii)</td>
<td></td>
</tr>
<tr>
<td>(iii)</td>
<td></td>
</tr>
</tbody>
</table>

e) Do you take pupils out on trips (long or walking distance trips?)

YES ( )  NO ( )
f) If No why? ------------------------------------------

-----------------------------------------------------

g) Do you use real objects (e.g. food, shelter, members
of the family etc)

YES ( ) NO ( )

i) From where do you get these real objects?
(i) ------------------------------------------
(ii) ------------------------------------------
(iii) ------------------------------------------

h) Which are the real objects that you use?
(i) ------------------------------------------
(ii) ------------------------------------------
(iii) ------------------------------------------

j) Do teaching aids affect /influence the teaching and
learning of Home Science?

YES ( ) NO ( )

k) If the answer to "j" is "NO", state why
(i) ------------------------------------------
(ii) ------------------------------------------

L) If the answer to "j" is "YES", state how
(i) ------------------------------------------
(ii) ------------------------------------------
# A Survey of Instructional Aids for Teaching Home Science

For Standard 4 and 8

## An Observation Schedule

### I GENERAL

<table>
<thead>
<tr>
<th>a) Name of School</th>
</tr>
</thead>
<tbody>
<tr>
<td>b) Class</td>
</tr>
<tr>
<td>c) Lesson Time</td>
</tr>
<tr>
<td>d) Objectives (i)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>(ii)</td>
</tr>
</tbody>
</table>

### II TEACHERS SECTION

<table>
<thead>
<tr>
<th>a) List down the teaching aids used</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i)</td>
</tr>
<tr>
<td>(ii)</td>
</tr>
<tr>
<td>(iii)</td>
</tr>
<tr>
<td>(iv)</td>
</tr>
</tbody>
</table>

| b) General comments on points at which the materials are used: |
| (i) Introduction                                           |
| (ii) As lesson progresses                                  |
| (iii) End of lesson (summary)                              |
| (iv) Others                                                |
c) List the various materials used and displayed during the lesson in the following:-

(i) Infront of the class ________ ________
(ii) On the side of the class ________ ________
(iii) At the back of the class ________ ________
(iv) Pass round as the Lesson progresses ________ ________
(v) Pupils go to the front to see demonstrations ________ ________
(vi) Others ________ ________

d) Are pupils at times asked to refer to visual content in their textbook or others
   YES ( ) NO ( )

e) After the materials have been used during the lesson, does the teacher:
   (i) Leave them in the class cupboard ( )
   (ii) Leave them with the class prefect/monitor ( )
   (iii) Take them away? ( )
   (iv) Others (specify ) ______________________

f) How do pupils use the materials
   (i) Individually ( )
   (ii) Paired ( )
   (iii) Groups ( )
(iv) Whole class

(v) Others (specify) ------------------------
------------------------------------------

g) If pupils are using the materials, does the teacher:

(i) Give general instructions before use

      YES ( )                               NO ( )

(ii) Move from individual/group to individual/group

      YES ( )                               NO ( )

(iii) Sit/stand infront of the class

      YES ( )                               NO ( )

h) Does teacher write legibly on the chalkboard?

      YES ( )                               NO ( )

j) Are teaching aids chosen related to what is being taught?

      YES ( )                               NO ( )
A SURVEY OF TEACHING AIDS FOR TEACHING HOME SCIENCE FOR STANDARD 5 AND 7

AN INTERVIEW SCHEDULE

I PERSONAL INFORMATION

a) Name of the school ---------------------------------

b) Class taught --------------------------------------

c) Number of pupils ---------------------------------

d) List other subjects that are taught ---------------

II GENERAL INFORMATION

a) Why do you use teaching Aids in teaching Home Science? ---------------------------------------

b) What at times prevents you from using Teaching Aids? ---------------------------------------

c) Are you always interested in using certain Teaching Aids than other

   YES (   )   NO (   )

d) If answer to C is YES, give reasons for it ---------

--------------------------------------
e) Is there always enough time for you to effectively use Aids and still cover the syllabus?

YES ( )   NO ( )

f) If the answer of E is NO, give reasons on how and why the use of Aids and coverage of the syllabus affect one another? ------------------------