INSTRUCTIONAL MEDIA AS A TOOL FOR ENSURING QUALITY TEACHING AND LEARNING FOR PUPILS IN THE JUNIOR HIGH SCHOOLS (SELECTED SCHOOLS IN THE KUMASI METROPOLIS)

By

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A Thesis Submitted to the School of Graduate Studies,

Kwame Nkrumah University of Science and Technology, Kumasi,

In partial fulfillment of the requirements for the Degree

of

MASTER OF ARTS, IN ART EDUCATION

Faculty of Fine Art, College of Art and Social Sciences

August, 2009

DECLARATION

I hereby declare that this submission is my own work towards the M.A and to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the university, except where due acknowledgement has been made in the text.

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ABSTRACT

Conventional instructional resources are not generally available in many Junior High Schools in Ghana. Where such resources are available, some JHS teachers lack the requisite skills and creativity to use them effectively in their teaching. Some teachers also lack innovation in finding suitable local substitutes to help their pupils understand their lessons. This leads to the teaching of abstract lessons, misunderstanding of concepts and skills, and ineffective learning that negatively affect learner performance and teacher output in terms of what is taught and learned by means of instructional media. Qualitative Research Method was used with questionnaire, observation and personal interviews to collect data on how instructional media available in the sampled schools are used in teaching Mathematics, English language, Agricultural Science, General Science, ICT, Visual Arts, Home Economics, French, Twi, Social studies and Pre-Technical Skills and their impact on pupils' learning. It was realized that, instructional media are generally not available in the Junior High Schools in the Kumasi metropolis. While few teachers have visited the Teachers Resources Centre in Kumasi, environmental resources such as internet café, chief's palace, found objects or farms are not considered as instructional media for classroom use. Lack of wall charts, models, and other conventional media to complement the use of chalkboards and textbooks in the schools is making it difficult for teachers to offer quality teaching to promote high academic achievement for Junior High School pupils.

Ministry of Education and Ghana Education Service should ensure the supply of

instructional media for use by teachers for effective teaching and learning. Such media

could include locally produced materials generated by teachers and resource experts for

better lesson delivery. Excursions and field trips can serve as a major means of exposing

Junior High School pupils to the environment as a learning resource for firsthand

information and experiential learning. In-Service training, workshops and seminars

should be organized to orient Junior   High School teachers to improvise alternative

instructional resources and the right ways to use them during lessons. This research was

carried out to understand what and how instructional media are used by Junior High

School teachers in the Kumasi metropolis.

August, 2009   S. O. K

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ACKNOWLEDGEMENTS

With a heart filled with gratitude, I am most thankful to Him, the Most High for making it possible for me to undertake this project.

I express my profound appreciation to my Supervisor, Mrs. Nana Afia Opoku-Asare for her interest in the subject matter and unflinching assistance.

I am again very grateful to Regina Koranteng for her enormous support.

May I seize this opportunity to also acknowledge all authors and publishers, whose works I quoted in this project report.

Finally, I would like to thank Daniel Owusu, not forgetting Elizabeth Afriyie for their support when embarking on this project.

INTRODUCTION

1.1 Background to the Study

Probably the Stone Age man started scratching figures and images on surfaces of rocks to serve as media to communicate his expressions. The use of instructional media started somewhere from the Stone Age period (World Encyclopedia, 2001). The Egyptians for example used hieroglyphics for visual communication of ideas. With such inscriptions, the elders used them as symbols to teach their children how to kill animals accurately during their hunting and farming. Also through initiation rites, storytelling, and festivals the young were given some form of training and instruction.

As man's march towards finding new ways of doing things continued, the back of trees and textiles were used as materials to communicate information which included principal materials such as the papyrus, parchment and paper. Apparently there is lack of interest in the use of instructional media among teachers in the Junior High Schools.

The study reveals that interest and use of instructional media such as real objects, models in addition to the use of the chalkboard, and textbooks was based on the subject taught and level of qualification obtained by the teachers.

1.2 Statement of the Problem

Instructional media include a wide range of instructional devices designed to provide realistic imagery. The types include chalkboard, photographs, computer, real objects, and models (Talabi, 2001). Instructional media provide the sound basis on which

concepts and ideas can be concretized. Moreover, the more interactive the teaching and learning process the more effective the creation of meaning in whatever is taught.

From all indications, pupils taught with instructional media such as models, and real objects in addition to the chalkboard, absorbs more knowledge from such demonstrations they see and the exercises they do with the resources. Pupils thus understand what they are taught better and faster than where teachers use textbooks and chalkboards in classrooms, as well as teaching by the lecture method.

Enormous benefits can be derived from the use of instructional media at all educational levels. Charts, models, real objects, textbooks and other illustrations can help to bridge the gap between teaching and learning.

Conventional instructional resources are not generally available in many Junior High Schools in Ghana. Even where such resources are available, some JHS teachers lack the requisite skills and creativity to use them effectively in their teaching. Some teachers also lack innovation in finding suitable local substitutes to help their students to understand their lessons.

Lack of pictorial support for class discussions lead to the teaching of abstract lessons, misunderstanding of concepts and skills, and ineffective learning that negatively affects learner performance and output in terms of what is taught and learned by means of instructional materials. This research was carried out to understand what and how instructional media are used by JHS teachers in the Kumasi metropolis.

1.3 Objectives of the study

1) To identify and describe the types of instructional media available for teaching and learning in selected Junior High Schools in the Kumasi Metropolis.

2) To examine how the identified instructional media are used by teachers and pupils in the selected Junior High Schools.

3) To assess the effects of instructional media usage on pupils' learning in the sample Junior High Schools.

4) To suggest other media that could be used to ensure quality teaching and learning in Junior High Schools.

1.4 Research Questions

1) What are the types of instructional media available for the teaching and learning in the Junior High Schools in the Kumasi Metropolis?

2) Are the instructional media available for use in the Junior High Schools relevant to the curriculum followed?

3) What impact do the instructional media used in the junior high schools in the Kumasi metropolis have on teaching and learning at that level?

4) What other instructional media are there for use by teachers for pupils in the junior high schools?

1.5 Delimitation

The study is limited to studying teaching and learning with instructional media and assessing the effects of available materials on the learning achievements of Junior High School pupils in the Kumasi Metropolis.

1.6 Limitations

The researcher encountered many setbacks during the study. The major limitation was the inability of some respondents to submit the answered questionnaire to the researcher after visiting the schools on several occasions.

1:7 Abbreviations

UNESCO- United Nations

USAID- United States Agency for International Development

UNESCO- United Nations Educational, Scientific and Cultural Organization

UNDP- United Nations Development Programme

CRDD- Curriculum Research and Development Division

UNICEF- United Nations International Children's Fund

BECE- Basic Education Certificate Examination

JHS- Junior High School

1:8 Definition of Terms

1. Conventional Media - These are instructional media including chalkboards, charts, models, textbooks used in the teaching and learning process.

2. Non-conventional Media – These instructional media include fruits, plants, plastics, farm implements and other real objects which do not form part of the normal School supply of instructional media but are brought to the classroom during lessons.

1:9 Importance of the Study

This project will be of benefit to the following agencies in these ways:

Ministry of Education, Youth and Sports, Ghana Education Service (G.E.S), and the Basic Education will be sensitized to know the state of teaching and learning in the Junior High Schools and teaching and learning problems that instructional media usage can help solve. The nation will also know the alternative instructional media that would help raise the quality of teaching and learning in the schools. Proprietors of private junior high schools and the Ghana National Association of Private Schools (GNAPS) will get to know how to help their teachers teach more effectively.

UNESCO, USAID, UNICEF, UNDP, World Vision International, and other bodies concerned with quality assurance in education, will have the necessary first hand information to make their work effective. The CRDD can also use the findings from this study as reference source for the need to develop syllabi, teachers´ handbooks, and supply appropriate instructional media to enhance Junior High School Education.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter reviews literature on instructional media usage and their effects on the teaching and learning of pupils in the Junior High Schools. Literature reviewed focus on education, teaching, learning, instructional media, and the education of adolescents in Ghana.

2.1 Education

Education is defined by Ingule, Rono and Ndambuk (1996) as the process of developing appropriate behaviour and skills that make an individual fit into his society. Education refers to the process of developing the capacities of a man to enable him to know the truth as it is (Akinpelu, 1991). It is aimed at achieving knowledge of the inner workings of the universe, so that the learner may deliberately adjust to what is real. The knowledge gained enables the learner to form habits and tendencies to search for the truth and utilize it in every aspect of life.

The White Paper Report on the Education Reform Review Committee Act (2004) emphasizes that education seeks to bring about efficient and effective delivery of quality education to meet the objectives of learners as well as stakeholders in the district and the nation as a whole. This could be achieved if the basic needs of the pupils are provided for by parents who understand and appreciate their roles in support of quality education. Also included are education implementers who are equipped with the required capacity and

skills to manage the education needs of pupils in the classroom. One unavoidable concern in any educational system is the development of an effective learning system.

The process of education consists of teaching and learning. Teachers are expected to do the teaching whiles students learn what is taught them. It is generally expected that schools provide an atmosphere and environment that makes it possible for teachers and students to do productive work during the school day.

2.2 Teaching

Teaching is essentially concerned with how best to bring about desired learning by some educational activity (Kyriacou 1995:1). The World Book Encyclopedia (2001) explains teaching as "helping other people learn". This makes teaching one of the most important ways that enable people to relate to one another as far as knowledge and skills acquisition are concerned. Teaching helps people acquire the knowledge they need to become responsible citizens, to earn a living and to lead useful rewarding lives. Teaching is also said to be a vehicle for transferring knowledge from one generation to next. Teaching is not a monologue but a dialogue in which one partner is vocal, but the other partner may, by simple participation in the form of a query, partake in the dialogue.

According to Bruner (1994), teaching is the ability to impart knowledge to a group of people, or it is to show the way to something or a process. Agun and Imogie (1988) also explain teaching as any interpersonal influence which may be exerted by somebody and which is aimed at changing the ways and behaviour of an individual. Teaching therefore concerns the activity of facilitating learning. So far as consideration of knowledge transfer is undoubtedly important, it is valuable in relation to the extent of quality of learning that is triggered.

According to Kochhar (1985:23), teaching is "an art with children as the raw material that the teacher has to deal with". As the author indicates, the teacher unconsciously designs the child entrusted to him or her and on purpose the teacher modifies the child. In this regard, teaching becomes a sublime art because it is impossible to separate the teacher and teaching. What this means is that the teacher mirrors himself or herself into the child; thereby putting an indelible stamp on the young, growing, plastic mind of the child who consequently generally takes after the teacher. Kochhar believes that teaching should be effective to make learning possible.

The author explains that effective teachers learn how to adjust the level of difficulty of learning tasks for particular students. Sometimes this means providing special challenges for the brightest in the class and providing more support and assistance for those who find a particular task too difficult.

2.3 Learning

Kundu and Tutoo (2004) define learning as experience gained through modification. Learning is considered an active process and not a passive observation. According to Akimpelu (1991), learning is an activity carried out only by the learner; nobody can learn for another person, a person can learn without being taught. Learning, according to Smith (1999) it is the storage of information that can be reproduced. There is a link or an interaction between the learner and the environment during the learning process. During learning, experience is gained. Without learning all effort of learners and teachers are bound to become purposeless.

LeFrançois (1985:2) also describes learning as a change in human disposition or capability that persists over a period of time and is not simply ascribable to the process of growth. The kind of change called "learning" exhibits itself as a change in behaviour, and

the inference of learning is made by comparing what behaviour can be exhibited after such treatment. Learning is a process. It involve changes occurring over a relatively shorter period of time which enables the learner to respond more adequately to the situation. Thus, we learn to play the piano, we learn fractions, we learn to drive. On the other hand, we grow in intelligence and we grow in moral stature. In some cases, the factor of growth and learning will be so inextricably intertwined that either or both words will need to be used.

True learning produces changes in the conduct (behaviour pattern) of the learner. Every experience produces a change in the mental structure of the learner which in turn affects the conduct of the learner. This, in short, is the goal of learning (Kochhar 1985). The ability to learn however differs from age to age and from individual to individual and that ability to learn involves not only intellectual capacity but also social, economic, perceptual, physical and psychological factors. Human beings learn through their senses. The ability to see, feel, hear, smell and taste therefore provides the means by which an interaction between man and his environment takes place.

Lowenfeld and Brittain (1982) also assert that the development of perceptual sensitivity should become a most important part of the education process. In their view, learning does not merely mean the accumulation of knowledge; it also implies an understanding of how the knowledge can be utilized. It can be deduced that learning is the process whereby new behaviour is acquired, strengthened or weakened as a result of experience gained in the form of either perception or behaviour. This means that learning is an active and not passive activity that depends on the learner. Learning is a personal involvement, meaning the learner should be able and willing to assimilate the material being presented.

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According to Kyriacou (1985), there appears to be three central and crucial aspects to any consideration of student engagement in the activity of learning. These are attentiveness, receptiveness and appropriateness, which are explained in the following sections.

a) **Attentiveness:** This relates to the ways in which teachers can elicit and maintain a high level of student attention and concentration by varying the learning activities, getting students actively involved, and utilizing students' interests.

b) **Receptiveness** depends in part on the ways in which teachers can make use of the different sources of student motivation towards learning.

c) **Appropriateness** refers to the ways in which teachers need to match the learning experience to each student's current state of knowledge and understanding, and at the same time ensuring that the learning activities actually foster the desired educational outcomes. This implies monitoring of students' progress, presenting quick corrective feedback, structuring and presenting activities to facilitate meaningful learning, and ensuring that cognitive processes being fostered and demonstration of learning required are being appropriately assessed through questioning or tests.

Without realizing it, we learn all kinds of things in all kinds of ways. Everybody learns different things in different ways. How one learns depends on what is to be learned. We learn how to ride a bicycle by doing (kinesthetic learning); make bread by kneading dough with the hands (tactile learning); to sing, play a musical instrument, or appreciate music by listening (auditory learning); and, learn about the movement of the stars and planets by observing (visual learning). Our senses bring all kinds of information to us. The fact that people learn in different ways implies that teachers should not expect

all their students to be skillful in learning what they teach in the same way and also have the same abilities in all subjects.

What needs to be recognized is that the very nature of teaching imbues the teacher with a background of experience that is quite different from that of the pupil. The circumstances make it necessary for the teacher to attempt to provide actual experiences that will make conceptualization and interpretation possible for the pupils. Where involvement with actual objects is unsafe, inconvenient or impractical, Farrant (1996) recommends instructional media as useful substitutes for the actual experience. Since ability to interpret is crucial to effective communication, anything that helps pupils make meaning of words will create an understanding of the object of the lesson. The idea is that involvement of the learner in relevant experiences which appeal to the senses is a vital part of the communication process that results in greater interest, correct interpretation, clear understanding and retention of what is learned.

2.3.1 Learning through direct experience

Commenting on the importance of learning through real objects and situations, Opoku-Asare (2000) mentions the works of early philosophers like Rousseau, Herbart, Pestalozzi, Froebel and Comenius whose concern on children's education stressed the benefits of learning through their senses to make the subject of discussion more effective than in the absence of it. The implication is that pupils will remember what they see better than what they hear only and that more and better learning results from experiences gained through as many of the senses as possible. This gives credence to the Igbo (Nigerian) proverb "what I am told, I forget; what I see, I remember; what I do, builds castles in my mind" (Nkuuhe et al, 1995).

2.3.2   Learning through instructional media

The term "instructional media", according to Romiszowski (1988), refers to devices and materials employed in teaching and learning. It includes hardware like blackboards, radio, television, tape recorders, video tapes and recorders and projectors; and, software like transparencies, films, slides, teacher-made diagrams, real objects, cartoons, models, maps and photographs (Opoku-Asare, 2004:36). Similarly, Scanlan (2003) indicates that instructional media encompasses all the materials and physical means an instructor might use to implement instruction and facilitate students' achievement of instructional objectives. This may include traditional materials such as chalkboards, handouts, charts, slides, overheads, real objects, and videotape or film, as well newer materials and methods such as computers, DVDs, CD-ROMs, the Internet, and interactive video conferencing.

Talabi (2001) asserts that instructional media are generally designed to provide realistic images and substitute experience to reach curriculum experiences. The media are considered the most efficient facilitators in the education set up. They are not substitutes for the teacher. Their use however, calls for an imaginative approach by the teacher who needs to constantly be on the alert for new ideas and techniques to make the lessons presented with different instructional media achieve effective outcomes.

According to this author, some devices are designed to present information of a kind that would not be available in an ordinary school experience. Examples include, films, television, sound recordings. Other types of instructional media have the function to help the pupil grasp the underlying structure of a phenomenon. Visual media are primarily for seeing, audio devices for hearing, and multi-sensory materials for use via two or more senses.

Nkuuhe (1995) holds the view that instructional media are all devices and materials used in the teaching and learning process. According to Nyame-Kwarteng (2006), instructional media are the various materials that appeal to the five senses- seeing, hearing, touching, feeling and tasting which enhance teaching and learning.

Ogunmilade (1984) also identifies instructional media as devices of hardware (equipment) and software (consumables) through which the learning process may be ensured and carried out.

In other words, they are the collection of materials and equipment that can be used effectively for communication. These materials are used in the planning process of giving instruction. Instructional media with its various types affect different senses and act as an integral part of teaching and learning process, and thus helping to bring about meaningful experiences. In this study, instructional media refers to models, real objects and other materials in addition to the chalkboard and textbooks that are brought to the teaching and learning process to induce understanding.

2.4.1 Types of Instructional Media

The following sections describe the different types of instructional media outlined by Farrant (1996), Talabi (2001), Nkuuhe et al (1995), Curzon (2001) (Nyame-Kwarteng, 2006), and literature sourced from the internet.

a) Chalkboards

Types include movable chalkboards, wall chalkboards (fixed), the roller or pulley system and glass boards made of asbestos sheet in different colours. The roller or pulley system could be used without cleaning the previous one. Movable chalkboards consist of punk plywood board to stand on easels which can either be used indoor or

outdoor. Wall chalkboards are usually painted walls which are part of the wall facing the class and made with cement. The board should be cleared with renovator at least twice a year.

The blackboard is considered one of the oldest, cheapest and to a great extent the most used of visual aids. It is useful for building up graphs, diagrams, maps, and the scheme of a lesson as it unfolds. A word or sentence recorded on the board helps provide an emphasis which may be lacking in the lesson. It must be noted that, the size of the chalkboard should be large enough for clarity. While some educational institutions use white chalk on black surfaces, others use dark blue chalk on primrose yellow boards which produce high clarity.

b. Printed materials

These are the literary forms of information preserved in autograph or transmitted format. They include exercise books, study guides, handouts and other print materials. They are important because they provide common visual imagery for both instructors and students. They also provide realistic details necessary for visual recognition of important subject material. With these materials teachers are able to often refer to the learning objectives, terminologies, learning outcome, exercises on the introductory page in order to have a better picture of what the learner must know. During the lesson, printed materials offer at least one 'example' and one 'try this' to enable learners have hands-on experience in the learning process. They also provide reference materials to refer to at anytime.

c. Graphics/Charts

These are probably much more available and used and could be easily made by teachers. Things to consider in using charts include-

a) The chart should be simple, accurate and attractive.

b) Consider whether chart is needed and would do better than other resources.

c) The type of data and the number of learners to benefit from the charts should be considered.

The various charts include bar charts, organizational charts, pie charts, directional charts, pictorial charts, and flip charts. An appropriate chart should have features such as being simple to see, read and understand. It should not include too much text and should contain relevant materials appropriate for the lass. When the charts are available, the teacher can proceed to plan the over-all arrangements. According to http//: www audio media.edu, charts and diagrams are used to graphically represent complex ideas among others. They can be designed to clothe abstraction with greater meaning.

Charts present factual comparative information in the form of pie-chart graphs to focus attention on the features of an object. Charts clamped or fixed together at the top and fixed to a chalkboard can be used in a flip sequence to illustrate the structure of a topic. Different colour contrasts should be considered when arranging and using charts. Wall charts are large pictures with a lot of items used for question-and-answer work, and which are used for discussing the relations of objectives and people.

Graphics involve printed paper announcement or advertisement that is shown publicly. It can be exhibited either to promote a product, event, or educate. It should immediately catch the attention of the specific audience.

d. Models

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According to http//:www.models/mock-ups.edu, models are additional instructional media and copies of real objects. A model can be an enlargement, a reduction, or the size as the original. It represents a replica of the original, while simplified models do not represent reality in all details.

Some models are solid and show only the outline of the object they portray, while others can be manipulated or operated. Still others, called cut-away, are built in sections and can be taken apart to reveal the internal structure. Whenever possible, the various parts should be labeled or coloured to clarify relationships.

Although a model may not be a realistic copy of an actual piece of equipment, it can be used effectively in explaining operating principles of various types of equipment. They are especially adaptable to small group discussions in which learners can ask questions, is more effective if it works like the original and can be taken apart and reassembled.

e. Felt board

It could be made from cotton, flannel wool or suede, cloth, by covering up a piece of plywood with the materials mentioned above. It is usually fabric made in plain or twill weave with carded yarns. It is also a relatively warm fabric. These are surfaces onto which illustrations, diagrams, can be fixed simply by placing them in position. These are specialized alternatives to the chalkboard. They can be used with very large groups of people. This is because the prepared material can be made suitably large.

Felt boards come in different sizes, large, medium, small. They are invaluable tools mostly mounted on 4mm corrugated plastic to allow for the most durability and allowing for washing without becoming soggy or molding.

f. Bulletin Boards

Bulletin boards could also be made of cork, chipboards, and beaverboards. Notice boards found in schools are examples of a bulletin board.

g. Projected Aids

They are devices for transmitting photographic and other images in an enlarged form onto a viewing screen. They employ a light source and a lens system. Traditional aids in this group include motion pictures, filmstrips, and slides of various sizes. The use of motion pictures and filmstrips has probably declined due to more user friendly media such as video. The instructor should adjust the equipment and lighting before hand and then preview the presentation. Therefore, aside from the chalk or marker board, the overhead transparency and projector are one of the most convenient and cost effective instructional materials.

These can be used to display moving or still pictures. Still projectors include filmstrip, micro-projector, overhead projector, cine projector. Its effectiveness depends on the quality of the projected image. Projected aids consist of three types, namely cine projection, opaque projection, transparent projection. A page of a book, maps, charts, leaves, coins, and several appropriate and inexpensive materials can be projected using the opaque projector.

One of the emanating instructional media gaining some popularity is the overhead projector which can project excellent images. The projector may be used as a chalkboard with the teacher writing with a special pen so that the script is protected in a magnified form as it is being written. The roll can be cleared and used again. It must be noted that, the overhead projector like other media, remains an aid to presentation and does not at any stage in its use, take over the lesson. Overhead transparency frames must be arranged

in the order in which they will be shown. An effective use is to reveal a portion of the slide as the content is described to the audience for them not to be overwhelmed by too much information. Learners will comprehend better if data is presented in stages so that they anticipate what is coming next.

h. Pictorial Illustrations

The chief value of a pictorial derives from its air of authenticity in the viewer's mind. Curzon (2005) points out that, pictorials should be studied individually and without haste, and learners should also know why they are studying them. In using them, the teacher should either use waiting time or display them in an open place to offer indirect discussion. Illustrations generally carry more information than line drawings, and are probably more suitable for mature learners. Appropriate photographs, enlarged, mounted in a deep frame and changed periodically, never fail to attract intelligent interest.

i. Broadcasts

Transmission of series of sound programs for broadcasts, produced with insight and skill into the needs of the target population will satisfy its required needs. This medium can be used by large learners. It also requires careful attention and recordings done by broadcasts who are specialist. The broadcast to be used is preceded by an introduction from the teacher which explains its purpose and place within the instructional scheme.

j. Tape Recordings

This works on the principle of imprinting magnetic variations on tape to assist in producing electric variations which can be amplified and converted into sound relayed through a loudspeaker. The tape can erase, hence used repeatedly at a low cost. Tapes can be edited by cutting spicing and played-back tape recordings have been used successfully

in teaching and learning processes but this requires careful planning. Tapes used alongside textbooks have been found useful for revision and review.

k. The Language Laboratory

This medium allows tape recordings to be used so that a student may imitate what he or she hears, listens to a playback of his voice and enters upon a two-way discussion with the tutor. Under the language laboratory, practicing learning and pronunciation is stressed. It should be stressed here that audio and visual resources should not be overused because the lack of visual stimuli can be boring. It is recommended to bring the media out only when the teacher is ready to use and must be put away not in use. The teacher should stand at one side and use a pointer so as not to block or distract the attention of the learners.

Besides the visual and audio instructional resources described above are audio-visual instructional media that work primarily through the senses of seeing and hearing in particular. Audio-visuals provide a rich medium for communicating complex information. It is vital that the material is shown to the learners beforehand to delete unnecessary or unsuitable content. After being viewed by the class, many different tasks may follow - either to begin a discussion or reports may be written from what is watched on video for instance. This type of instructional media includes the following:

l. Film

The film remains a potent medium capable of bringing into the teaching situation a wide range of stimuli probably in the influencing of attitudes, intensification of interest and, possibly, increase in the retention of learned material, the film may be a highly effective

instructional medium. Careful study of the film or film sequences is required. The rearrangement of the teaching and learning environment (where the college has no separate cinema) is a significant part of the planning processes.

m. Television Broadcast

Probably, the television as an entertainment medium may have dulled the educational impact of a wonderful technological achievement. More often, the television programme is considered as a mere wall paper unrelated to the syllabus. Lack of visual recording facilities makes television an unreliable aid. Television could help in distance education but where its presentation is not allowed to dominate a lesson scheme, the impact can be remarkable. The resource can be a significantly gain and control the learners' attention. Broadcasts can be recorded for later viewing. It is advantageous to break the programmes into sequences.

Any teacher who has ever asked his class what they saw on the television the night before and noted the feedback given will need little persuasion that this is true. Watching the screen induces a passive acceptance to a rate that print, magazine and radio do not. There is however, a lot of controversy surrounding this most powerful method of mass communication (Levine, 1982).

n. Video tape

Video tape may be used to introduce a new topic or point of discussion during one's presentation. Appreciating the different kinds and qualities of effect which aids can have upon learners is the most crucial step to deriving value from them. It is important to decide what a particular stage in a lesson should cause students to do in order to learn most effectively. It is also vital to think in terms of behavioural objectives as well as

designing and choosing an aid which is mostly important to do in terms of its effect on learning. With an objective in mind, a teacher will use an instructional media with greater caution, greater force and with more effect.

o. The computer

Computer-based multimedia could include several forms of media-audio, text, graphics, and video or film. With computer-based training, the role of both the student and the instructor change. Students become more involved in their own learning, and instructors may no longer occupy a center-stage position in a typical classroom setting.

p. The internet

Forsyth (2001) points out that, the technology and methodology to use the internet as a tool for delivering learning materials are evolving. The nature of the internet technology seems to lead to confusion among the education and training community. Some view the internet as a technology to deliver information. Others also consider the internet as technology and a delivery tool that needs to be looked at after the educational methodology has been satisfied. It is only through analysis of the educational needs that the use of any instructional device as a delivery tool is supportable.

q. Community resources

People are generally drawn to recreation or a myriad of other practical factors. Learning activities are nicely capped off by a picnic on a beautiful spring or autumn day. Schools embark on trips to a hiking trial, on estuary to observe aquatic life at low tide or to the banks of a river for an ecology lesson by resource professional (http//:www.community resources.edu).

r. Learning Resources Centre

A learning resources centre is a storehouse of materials from which people can learn what they want to learn. Resources Centre can also be referred to as instructional media.

The variety of materials listed describe the range of resources that individual teachers could adopt to complement the human voice, gesticulations, tests, examinations, assignments and projects to enhance teacher output and induce learner performance. Obviously, these materials vary from conventional multi-media communication devices that are imported and therefore mostly out of reach of the average school in Ghana, to those that can be produced by a teacher or upon a teacher's initiative by their pupils. The use of any of these resources would encourage learners to read, write, listen, view and construct meaning from the lessons taught them.

2.4.2   Why Use Instructional Media?

The place of instructional media in the teaching and learning process is undoubtedly essential. Scanlan (http://www.usask.ca/tlc/utl_teaching_guide/utl_using_it.html) assert that instructional media are used whenever, in the best judgment of the teacher, it can facilitate learning or increase understanding of material being presented. As the University of Saskatchewan Teaching and Learning Centre (n.d.) asserts, communicating to facilitate learning can be a challenging process, often requiring creative efforts to achieve a variety of implicit instructional goals. Instructional media can help achieve the following goals:

a) attracting and sustaining attention

b) developing interest

c) adjusting the learning climate, and

d) promotes acceptance (of an idea).

It must be said that different instructional media exist to meet the different capabilities of learners. Whether for the purposes of seeing or hearing and others for seeing and hearing at the same time, instructional media are intended to bring about meaningful understanding and hence learning. There are certain advantages and disadvantages that have to be considered to ensure their proper selection and use.

2.4.3 Selection and Use

Models for media selection range from simple procedures or algorithms to complex theoretical schemes. Some are based on the communication 'channel' being used (audio, video, etc) or the characteristics of the media itself. Others emphasize the learning outcomes being addressed, while still others focus on learner attributes or educational theory or the teaching-learning process.

Regarding media richness and instructional appropriateness, the following table specifies the various characteristics of common media that should be considered in the selection process (Newby, Stepich, Lehman, & Russell, 2000):

Learning will be enhanced if	Real Object	Text (handouts,	Easel, chalk or whiteboard	Overheads of computer	35mm Slides	Video (tape,	Graphics (photos,	Audio (tape,	Computer

media:	s	books etc)		presentations		discs, TV)	diagrams)	CD)	software
Shows motion						◇			◇
Reproduces sounds								◇	◇
Shows realistic images					◇	◇	◇		◇
Is portable		◇			◇				
Can be used as an aid or reference after the lesson		◇							
Allows drawing writing or highlighting during lesson		◇	◇	◇					
Allows students to interact			◇						◇
Can be used independently		◇			◇	◇		◇	◇
Allows user to review or control pace				◇	◇	◇	◇	◇	◇
Allows students to touch or see objects	◇								
Allows observation of dangerous processes or distant locations						◇			◇
Can be easily modified		◇	◇	◇					
Can be easily reordered		◇		◇	◇		◇		
Allows participants to respond simultaneously		◇	◇						
Shapes attitudes						◇			
Presents problems solving situations						◇			◇

Table 1: Factors that affect use of media
Source: Internet (26/10/07)

Gagné, Briggs, and Wager (1992) also recommend that instructors apply the following exclusion and inclusion criteria in selecting media for the various common learning outcomes.

Table 2: Criteria for selecting media

Learning Outcome	Exclusions	Selections
Intellectual Skills	Exclude media having no interactive feature	Select media providing feedback to learner responses
Cognitive Strategies	Exclude media having not interactive feature	Select media providing feedback to learner responses
Verbal Information	Exclude only real equipment or simulator with no verbal accompaniments.	Select media able to present verbal messages and elaboration.
Attitudes	Exclude only real equipment or simulator with no verbal accompaniments.	Select media able to present realistic picture of human model and the model's message
Motor Skills	Exclude media having no provision for learner response and feedback	Select media making possible direct practice of skill, with informative feedback

Source: Internet (26/10/07)

Additionally, Strauss and Frost (1999) have identified nine key factors that should influence media selection as institutional resource constraints, course content appropriateness, learner characteristics, professor attitudes and skill levels, course learning objectives, the learning relationships, learning location, time (synchronous versus asynchronous), and media richness level.

Reiser and Dick (1996) have distilled these nine factors down to three major criteria for selecting instructional media: practicality, student appropriateness, and instructional appropriateness. These are explained as follows:

Practicality: Is the intended media practical, in that the media is available, cost efficient, time efficient, and understood by the instructor?

Student Appropriateness: Is the intended media appropriate for the developmental and experiential levels of the students?

Instructional Appropriateness: Is the intended media appropriate for the planned instructional strategy? Will the media allow for the presentation of the proposed lesson in an efficient and effective manner? Will the media facilitate the students' acquisition of the specific learning objectives?

On the other hand, Dick, Carey, & Carey (2001) specify three major constraints that operate on media selection, each of which may impede the selection process. These constraints include the following:

(Un) availability of Materials: Using existing instructional materials can facilitate the creation of instructional units; however, if no appropriate materials exist, then the instructor must create the materials. This usually leads to a production constraint.

Production Constraints: Creating quality instructional media can be a costly, in both time and money, enterprise. A central question to answer is what level of media quality is acceptable, that is, both time and cost efficient as well as instructionally effective.

Instructor Facilitation: Most forms of instructional media involve teacher modeling, demonstration, implementation, or more broadly, facilitation. The amount or difficulty of this process of media facilitation may inhibit a teacher's ability to effectively utilize the particular media.

However efficient and effective management of teaching and learning with regard to the use of instructional media, to a great extent, is due to factors such as availability and utilization of instructional materials, learner characteristics, teacher's personality and institutional support (Agun and Imogie, 1988). Just as the educational process is influenced by many factors, so is the selection of instructional media. Other factors are the knowledge base of learners, age and ability of learners, and subject to be taught, among others. As suggested by Curzon (2001) in relation to the choice and use of media, any instructional situation must provide for four learner needs: stimulation, order, strategy and meaning. This means that for learning to be achieved, the appropriate stimuli for derived responses can be well facilitated by being able to engage the learner's senses of hearing, seeing, touching, which in no doubt should follow a planned pattern or procedure.

Instructional media are substances that leave marks on the learner and the learning situation. Feldman (1981) makes it clear that instructional media which precede written texts help to express the psychological dimension of life. In the view of http: www.lcvs.kh.edu/junior, many textbooks have more texts than are needed or texts that may not be suitable in or one way or another. When the right instructional media is selected and used skillfully at the right time, in the right place and in the right manner, Curzon (2001) they can help widen the channels of communication between the teacher and learner. Therefore, before using any instructional media, the teacher should consider the appropriateness of the media in order to select what could satisfy the objectives of the lesson for which they were selected. It is important that during teaching, the teacher matches the lesson and corresponding activities to determine the type of instructional medium to be selected for use.

Teachers often times aim at promoting varieties of learning ranging from simple facts to progressively complex types like concepts, principles and the solving of problems during teaching. The interaction of teachers and learners could also be mediated with relevant instructional media that can guide teachers to match instruction with the learners' cultural experiences to make the knowledge imparted more meaningful. Matching instructional media to teaching methods is a critical part of the instructional design process. Once the teacher understands the media characteristics needed to support particular teaching strategies, he will be able to determine which media is right for achieving the lesson objectives.

In this regard, Ogunmilade (1984) points out that for proper use and selection of instructional media, adequate and comprehensive planning is needed. This includes knowing the type of audience one has, their culture and the environment in which they live. Instructional media may serve as an optional extra to a lesson or the basis of a total teaching experience but depending on what the teacher does with it, usage should not render the class teacher unnecessary or the lesson, entertainment.

With reference to media usage, Krueger (2004) asserts that learners learn by being provided with varied materials and depending on their readiness and strengths, aided to further explore the topic being presented. In other words, after being presented with the instructional media, the whole class can come together and familiarize with the media so as to develop a deeper understanding of what is taught through questions and evaluation. Media should therefore be readily available for pupils to learn from anytime. This is because in learning, the design of instructional media and associated activities allow individuals with wide differences in their abilities to see, hear, speak, move, read, write, pay attention, organize, engage and remember, to achieve in the teaching and learning environment.

This suggests that multiple flexible modes or methods of presentation, expression and engagement are needed to support diverse recognition techniques for the pupils. Teachers should also be concerned about exhibiting positive interactions in the teaching and learning environment. Such interactions include being cheerful, patient, confident, firm yet flexible, a problem solver, orientation initiator, and good listener.

Advantages of using instructional media

Talabi (2001) and Adeyanju (1999) have outlined important advantages that are associated with instructional media and they are as follows:

a) There is standardized information delivery. Each student sees and learns the same message, hence forming the basis for further study, practice and appreciation.

b) Attention is ensured through the use of instructional media. Members are therefore kept informed. The clarity and coherence of a message, the attractiveness of changing images, the use of certain special effects, as well as the impact of ideas that can create or cause effect, cause an audience to laugh or be thoughtful, contributing to the motivational and interest-calling aspects of media.

c) The quality of learning can be improved through careful integration of pictures and words. Media can communicate elements of knowledge in a well-organized, specific and clearly defined manner. Through much effort from students, learning can be expected to reach an acceptable competency level.

d) Learning can be enhanced since there is reduction of repeated information. This enables important aspects of lessons to be delved into.

e) Learning becomes interesting. Thus, alert instructors are continuously searching for refreshing ways of generating and expanding interest. This is because data presented represent situations, and pose questions in exciting ways.

f) They extend the scope of experience. For example, by using various media, concepts can be taught through real life demonstrations.

g) Instructional media help to supply a concrete basis for conceptual thinking whiles increasing learner's interest. This means that the media help to stimulate self-activity in learners, making learning more permanent.

h) Instructional media enhances retention and transfer of knowledge and support learning through examples and visual elaboration.

i) New content, experiences and expectations could also be presented through the use of instructional media, leading to efficient preservation of records and documents and experiencing materials that could have looked far-fetched.

j) Through the use of media such as LCD projectors, knowledge and information is able to reach a lot of people simultaneously (Ogunmilade, 1984).

k) Instructional media are capable of focusing attention on whom and what is important and interesting thereby raising aspirations and whetting the appetite of the learners. This is critical in promoting distance education across various disciplines and almost all forms of education and training, be it formal, informal or non-formal.

l) Instructional media also serve as the means of expressing the psychological dimension of life, since without using media it would be very difficult to find expression for certain states of matter.

Powell (1978) explains that some ideas cannot be reliably communicated through books. For example, music must be heard, paintings seen, perfumes smelt and wines tasted. Some learners learn things either by reading or hearing and others by combining the senses. Powell notes that experiences such as seeing the way colours change in bright light cannot be learned by reading a text but by experiencing in a different way. This is why understanding media must be employed in understanding of the concepts of all settings particularly where children are involved. Observing how things grow "smaller" with distance will help learners develop a keener perspective and hence responsiveness to their world.

Harford and Baird (1997) state that instructional media convey information more effectively if time is spent planning their design and explains that what is used in the learning environment should directly be relevant and appropriate to the local community. This means that any media used should reflect what exists in the learner's immediate environment. The authors also hold the view that instructional media will enhance students' learning if a well balanced preparation is made for a particular task. This is likened to prescribing the correct medication and dosage to suit a particular medical problem.

Agun and Imogie (1988) note that unless the teaching strategy which is appropriate at a given stage requires imparting information or knowledge in a mode beyond the natural capacities of the teacher, instructional media are unlikely to be of value to the lesson. They indicate that aside the importance associated with the use of instructional media, there are certain things instructional media cannot do either directly or indirectly, even though they can help in a number of ways.

Since effective teaching depends upon the success of communication between teachers and their pupils, it is critical that teachers adopt more creative ways to ensure that all the students in their classrooms understand what is taught them. By inference, learning will be more effective for all pupils if teachers at all levels can make innovative changes in their teaching methods and classroom practice so that they become "helpers" and "supervisors" who creatively manage the learning situation to achieve the aims of their lessons instead of acting in their conventional role as "fountains of knowledge".

By creatively administering and controlling the type of instructional resources used, the teacher is more likely to achieve the difficult task of combining class control with sustained pupils' level of concentration to optimize teaching and learning objectives. For this reason, the use of instructional media can aid interpretation by focusing attention to imagery or objects that represent and explain the words used and thereby creating a firm understanding of the situation and promoting retention of such information.

Disadvantages of Media Use

In spite of the advantages associated with the use of instructional media, Agun and Imogie (1988) indicate that there are some difficulties associated with their use. These include the following:

a) Bureaucracy and delay at the Ministry of Education in providing the needed financial and technical resources to provide media in educational institutions. This leads to lack of sufficient materials to use.

b) Not many teachers see the need for media use in the classroom.

c) Lack of adequate personnel to train teachers to use media in schools.

d) Lack of enough patronage from heads and supervisors of educational institutions for media usage.

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e) The impression that new technology would replace teachers makes some teachers to see instructional media as threats.

f) Lack of flexible curricular to incorporate the appropriate teaching and learning materials.

g) Inadequate time and laziness on the part of teachers to use media. Instructional media though have some weaknesses; the variable benefits the media provide should be overlooked.

It could be deduced from the discussion that though the use of instructional media positively affects teaching and learning, the characteristics of the learner should be looked at so that individual learning differences could be addressed. Although it cannot be said that every school is endowed with every item described earlier, it is possible for teachers at all educational levels and in particular, those who teach young children and adolescents to endeavour to use whatever resource is available in their classrooms and school environment to give concrete meaning to their lessons.

This however, depends on the schools being adequately stocked with these resources and teachers being trained to acquire the technical skills and knowledge needed for appropriate use of both the low-and high-technology media, and also monitored to effectively adapt whatever is available to them to bridge the gap between teaching and learning, and thereby enhance the academic achievement of the young adolescents in Junior High Schools and prepare them for higher education and the job market.

2.5   Secondary Education in Ghana

Secondary education in Ghana is offered at two levels – Junior High and Senior High Schools. Junior High School (JHS) education follows six years of Primary education and lasts for three years. At the end of this period, the students take the national Basic School Certificate Examinations (BECE) which qualifies them to be considered for admission into Senior High Schools to pursue specialized educational programmes. Prior to the BECE, the JHS students are made to fill some forms to indicate their choice of SHS and programme of study. The selection exercise therefore demands the careful guidance and counselling of both students and their parents or guardians so that they would understand the issues relevant to the students' future education and career opportunities. Junior High School students are mostly adolescents aged between 12 and 15 years.

According to the Education Reform (2007),

a)   Emphasis on Junior High education shall be placed on literacy, numeracy, creative Arts coupled with problem solving skills.

b)   Junior High School pupils shall be offered educational guidelines to enable them select the right programmes suitable for their interest and skills.

c)   Subjects to be taught include Mathematics, Social Studies, Integrated Science, Ghanaian Language, Information and Communication Technology, French, Visual Arts, Pre-technical Skills, Home Economics Religious and Moral Education.

d)   There would be two parallel streams made up of General Education and Technical Education.

These stated objectives are geared towards making Junior High School education more relevant to the world of work after school, to rural development and modernization of the predominantly agriculture-based Ghanaian economy; as well as the need to promote national and cultural identity and citizenship. There is therefore the need for a holistic development through and among other factors such as instructional media to help address the objectives.

2.6   Adolescence and Adolescents

According to http//:www.Adolescence.edu, adolescence is referred to as the transition period between childhood and maturity. Anyango (2000) considers adolescence as the time when a person changes and grows physically, psychologically and mentally from a child into an adult. At this stage, people conceive alternate possible changes in reality and begin deductive thoughts (Cohen and Gain, 1995). It is also the stage of life between the ages of 10 and 19 years. At this period, the adolescent goes through a lot of changes and becomes curious to know new things. The changes that go on in the life of adolescents should be studied critically in order to understand and help them.

Microsoft Encarta Encyclopedia 2003 describes adolescence as the stage of maturation between childhood and adulthood. The term denotes the period from the beginning of puberty to maturity; it usually starts at about age 14 in males and age 12 in females. The transition to adulthood varies among cultures, but it is generally defined as the time when individuals begin to function independently of their parents. According to this source, no dramatic changes take place in intellectual functions during adolescence. The ability to understand complex problems develops gradually while their ability to solve complex problems depends on their accumulated learning and education.

2.6.1 Characteristics of Adolescence

Adolescence is characterized by development at three levels – intellectual, social and personality. In terms of intellectual development, adolescents experience a transition from concrete form of resourcing to that which is abstract and conceptualized. In the formation of concepts, the adolescent is able to plan when solving problems. In social terms, the adolescent often wants to belong with the peer group so as to single out particular individuals with whom one can have an intimate relationship. In the social interactions, the adolescent expresses a compelling need for communication. An individual may start to think independently and want to make his/her own decisions.

The adolescent at this stage tends or starts making new friends and listens to them more than before. In terms of logic, the adolescent is mostly limited to issues and problems associated with questions involving objects, people and events but cannot reason about theories and concepts. In most cases they are often shocked to discover that their passion for a particular cause is not shared usually by other people. Because adolescents are unique in thoughts and actions, their learning styles should be devoid of any doubt.

2.6.2 Factors that mediate the learning of adolescents:

Various factors should be considered when addressing the learning process of adolescents. These are:

a) Clarity - This refers to the ability of the learner to see clearly, hear and understand the subject matter presented. Because adolescents are prone to forming pre-conceived ideas, teachers should ensure that ambiguities in the learning process are eliminated.

b) Learner Opportunity - Research has shown that learners who take part in a learning task are able to understand and reproduce what they are taught. This enables the adolescents to clear their minds of curiosities and doubts.

c) Variety - Generally, people learn by either listening, seeing or by doing. Learning tasks should therefore cover what is to be presented in a variety of ways. Instructional media when used addresses such differences and plays a major role by assisting pupils concretize the learning process.

d) Teacher's Enthusiasm - It involves the teacher showing interest in the lesson delivery process so that learners would also show interest. This would create an atmosphere for the learner to desire, assimilate and understand what is taught.

The probability that an adolescent may start to think independently and make own decisions as well as listen to peers more than necessary maybe avoided. Because adolescents are positioned at a unique stage between childhood and adulthood, differences in their psychological, social and intellectual transformations should be addressed through the use of instructional media that would facilitate better understanding of what is taught them so that curiosity and doubts mostly associated with adolescents could be addressed. Instructional media play a major role in the education set up. In the teaching and learning process, the characteristics of adolescents should be considered in determining the type of instructional media to use.

CHAPTER THREE

METHODOLOGY

The chapter describes the general procedure adopted to collect data for the study, which includes visits to selected Junior High Schools to observe the instructional materials available to the sample schools, and how these materials are used in the teaching and learning process.

3.1 Research Design

The study employed the qualitative research method with questionnaire administration, observation and personal interviews to collect data on the use and impact of identified instructional materials on the learning of pupils in 10 selected public and private Junior High Schools in the Kumasi metropolis.

Since it is impossible to develop a meaningful understanding of human experience without taking into account the interplay of values and beliefs, Lincoln and Guba (1985) argue that human inquiry requires frequent, continuing and mindful interaction between inquirers and their respondents and that inquiry must maximize rather than minimize this kind of contact. In order to know exactly what kind of instructional media are used and the impact these make on pupils in the classrooms where they are used in the selected Junior High Schools, the qualitative research method which, according to Fraenkel and Wallen (2000), investigates the quality of relations, activities and situations, was employed in this study.

3.2 Qualitative Research Method

NAEA (1997) defines qualitative study as a systematic process of describing, analyzing and interpreting insights discovered in everyday life. Qualitative research tends

to report on what actually pertains. The term "qualitative" encompasses phenomena that occur in the natural settings and their complexities. Leedy and Ormrod (2005) indicate that qualitative research seeks to understand the human and social behaviour from the participants' point of view which could be in the social setting such as a community, school or institution.

Qualitative methods provide avenues that can lead to the discovery of deeper levels of meaning into the subject studied. It investigates the quality of relationships, activities, situations or materials. The ultimate goal of this type of enquiry is to portray the complex pattern of what is being studied sufficiently and deeper so that someone who has not experienced it can understand. The qualitative research design facilitated investigation of instructional materials used by teachers in the transfer of knowledge and skills to pupils in Junior High Schools.

Though qualitative research emphasizes the description and interpretation of data in words, data in terms of numeracy was collected in the process and analyzed to understand naturalistic enquiry.

Characteristics of Qualitative Research

a)   The natural setting is the direct force of data and the researcher is the key instrument in qualitative research.

b)   Data are collected in the form of words or pictures such as field notes, interview transcripts, photographs rather than numbers.

c)   Researchers are both concerned with process and product; they tend to analyze data inductively.

Advantages of Qualitative Research

According to Osuala, (2005)

a)   Qualitative research helps to gain insider's view of the field.

b)   Information gathered through qualitative research also enables data to be presented in a more descriptive and narrative style.

c)   Qualitative research method has the advantage of generating awareness in terms of history, capability of understanding trends in development in programmes, and an approach to enquire the course of occurrences.

d)   Qualitative research study enables the researcher to gain new insights, develop new concepts and discover problems that exist within the phenomenon.

e)   It mostly allows a researcher to view behaviour in a natural setting with influences often associated with experimental or survey research.

f)   It offers a unique and rich approach to understanding what, how and why events occur in relation to a particular setting.

g)   It also involves directly observing and notifying as well as the use of video devices to supplement and enhance data collection and analysis.

h)   Data is described in narrative form as close as possible to the form in which they were collected, and in much detail so that one who has not experienced the situation or events can understand and appreciate it. In simple terms, qualitative research enables a researcher to describe, interprets, verifies as well as evaluates a given phenomenon.

Some Weaknesses Associated With Qualitative Methods

a)   Some sample sizes are generally too small to allow the researcher to generalize the data beyond the samples selected for the particular study. Hence, qualitative

research is mostly used as a preliminary step to further investigate, rather than the final phase of project.

b)   The data collection is often employed to prepare more elaborate qualitative analysis of all the information required for a particular study.

c)   Poor planning where it is devoid of key issues may make the project produce nothing of value.

d)   It involves extensive periods and is labour intensive in the collection of data. It also has the probability of involving researcher bias and impression management by subjects.

However, the limitations offered the most appropriate means of:

a)   Obtaining first-hand information on the types of instructional media available and used in teaching and learning, and the effects of using unorthodox instructional media such as the blackboard, and textbooks.

b)   Observing teaching and learning process with instructional media usage in the relevant subjects.

c)   Gathering data on the impact of the instructional media on the pupils.

d)   Gathering data from questionnaire and interviews to obtain a good description of how the use of other instructional media can compliment the chalkboards and textbooks in the teaching and learning of pupils in the sample schools.

3.3 Research Tools Employed

Three data collection techniques - observation, interviews and questionnaire were used.

3.3.1 Observation

Direct observation of behaviour has become an important measure of evaluating the effects of instructional media. For example, more can be told about the complete development of a child from day to day than in any other way. In the field of education, observation comes handy to judge a teacher's performance in teaching. Assessment of practice skills can also be better done by observation. Observation is recognized as the most direct means to studying people when one is interested in their overt behaviour. Observation underlines all research, it plays a part in the survey procedure but even experimentation is simply observation under controlled conditions. It is a more natural way of gathering data. Data collection through observation may yield more real and true data than by any other method.

The degree of observer participation can however, vary considerably. When a researcher takes on the role of a complete participant in a group, his identity is not known by any of the individual being observed. The researcher interacts with members of the group as naturally as possible, as if he or she is none of them. When a researcher chooses the role of participant-as-observer, he or she participates fully in the activities of the group being studied but makes it clear that he is doing research. When a researcher chooses the role of observer-as-participant, he or she identifies fully straight off as a researcher but makes on pretenses of actually being a researcher of the group being observed.

Some limitations of observation

Establishing the validity of observation is always difficult. Many of the items of observation cannot be defined with sufficient precision. To attempt to define or isolate these aspects may involve false definitions and consequently invalidity of the data.

The problem of subjectivity is also involved. A person tends to see what he or she knows. If a teacher, a doctor and an architect inspects a school building, each will see the things that are specifically known to him and other things are likely to escape his or her attention. There is the danger of concentrating observation of the aspects of limited significance simply because they can be recorded objectively and accurately.

Observation is self-interfering. It introduces in itself bias, the direction and extent of which is relatively unknown and unknowable. Such distortion is difficult to eliminate, but it can be minimized through proper choice and location of observers, inconspicuous recording and other attempts such as establishing observer naturally.

In this study, the researcher adopted the participant-as-observer role to be close to the teachers and students while classes were going on in order to observe instructional media used and the interactions that took place between the teachers and their pupils as the lessons went on. The method also enabled the researcher to observe the impact the instructional media used had on the pupils' learning, and how they responded to the lessons and class exercises. Observation also helped the researcher to learn form the teachers how the instructional media influenced the subjects they taught in the core subjects and how the pupils responded to the lessons.

3.3.2 Interviews

Interviewing is the careful asking of relevant questions of selected individuals. It is an important way for a researcher to check, verify or refute impressions gained through observation. The methods provide a means to gain information about things that cannot be observed directly (Fraenkel and Wallen, 1993). Interviews involve the researcher gathering data directly from others through face-to-face or telephone contact. The interview is superior to other methods of data gathering devices. After the researcher gains rapport or establishes a friendly relationship with the subject, certain types of information an individual might be reluctant to put into writing may be obtained.

Some advantages of interview as a data-gathering tool:

a) The researcher is personally present to remove any doubt or suspicion regarding the nature of the enquiry. The answers are therefore not biased because any misunderstanding gets rectified.

b) The interviewer can probe into casual factors, determine attitudes, discover the origin of the problem, involve the interviewee in an analysis of his or her own problems and also secure cooperation in the analysis.

c) It permits an even exchange of ideas and information. It is not one-way communication. It provides opportunity for give and take.

d) The respondent's difficulties (like poor expression and bad hand writing) are also avoided as every schedule is filled by the interviewer.

e) It helps the investigator to gain an impression of the person concerned.

f) There is no chance of the respondent rectifying, notifying or editing earlier answers in the light of latter questions.

Some disadvantages of interviews

a)   For an adequate coverage, a large number of field workers may have to be engaged and trained in the work of data collection. All this entails a lot of expenditure and a research worker with limited financial means can find himself or herself in a great difficulty in adopting this method.

b)   It is a completely costly gathering method than other techniques. When the survey covers a wide geographic area, interview becomes expensive, crucial and costly in time and effort since it's almost invariable necessitates call-backs, long waits and travels.

c)   Since the objectivity, sensitivity and insight of the interviewers is crucial, this procedure requires a level of expertness not ordinarily possessed by an average research worker. That is why is considered as one of the most difficult techniques to employ.

In this study, interviews drew the researcher closer to the teachers in the schools and because of the friendship that grew between the two sides through the regular visits, some information were given which would not have been released if the researcher had given out only the questionnaire to these people. Another advantage of the interview techniques was that it enabled the researcher to discuss and explain the purpose of the study to the population and ensure that they understood the questions well.

3.3.3 Questionnaire

A questionnaire is a device for securing answers to questions by means of a form which the respondent fills in. The procedure normally comes into use where one cannot see all the people from whom responses are desired.

According to Fraenkel and Wallen, (2000), questions that call for short checked answers are "restricted or closed" while the "open or unrestricted" type calls for free response in the respondent's own words with no clue provided. A questionnaire can be structured or unstructured and have close and open items. The structured questionnaire contains definite, concrete and directed questions whereas the unstructured may consist of partially completed questions or statements.

Advantages of using questionnaire:

a) It is an economical means of accumulating information of significance to educators in terms of time, effort and cost to both sender and respondent.

b) It permits group administration and is adaptable to any objectives. It can cover a larger group at the same time.

c) It places less pressure on the subject for immediate response. The respondent can answer it at leisure.

d) It helps in focusing the respondents' attention on all the significant items. As it is administered in a written form, its standardized instruction for recording responses ensures some uniformity. Questionnaire does not permit much of variation.

The disadvantages include the following:

a) It gives a biased sample. The matter of non-response is always a big question mark.

b) Some respondents may not like to put their views on controversial issues in writing.

c) The behaviours, gestures, reactions, emphasis, assertions and emotions of the respondent cannot be noticed by the researcher.

d) There are many people who would not like to share important ideas unless and until they are impressed about the cause and personality of the investigator.

e) The questionnaire does not provide for any opportunity for the investigator to establish rapport with the subjects.

In this study, the open or unrestricted type of questionnaire was used to solicit information on the instructional media used by the teachers and their effects on the pupils' learning. This device was used because the population was large and posed time and funding constraints. Besides, not all the identified respondents could be reached on the appointment days.

Questionnaire design

A set of questionnaire was designed to seek information from teachers on the quality associated when instructional media are used in teaching pupils in the selected Junior High Schools. 11 item questionnaire were personally given to 120 teachers as the sampled population at different times. Questions that were not well understood by the respondents were explained to them to ensure that they answered all the questions.

3.4 Validation of Instruments

To ensure that the primary and secondary sources of information-questionnaire, interview and observation guide are free from errors, the researcher vetted them, followed by colleagues and later the supervisor before they were administered.

3.5 Population for the Study

Osuala (2005) defines population as how the population (to which the findings or outcome of the research are to be generalized) influences the manner in the interpretation to be made. This means identifying features which members of the universe have in common and will identify each unit as being a member of a particular group.

Population in research means the aggregate or total of objects or individuals by which inferences are to be made in a sampling study. A population is any group of individuals that have one or more characteristics in common that are of interest to the researcher. However, due to limiting factors of expense, time and accessibility, it is not always possible to obtain measures from a greater group of the population such that the knowledge of the total population under study is made evident. The smaller subset selected for observation and analysis is the sample. By observing the characteristics of the sample, the researcher can make generalizations about the characteristics of the population from which it is drawn. The population studied for this research comprised of teachers in 10 Junior High Schools in the Kumasi metropolis - five private and five public.

3.6 Data Collection Procedures

Mainly through visits to the Schools, sitting in classrooms and observing lessons and class activities were organized into individual school reports.

3.7 Primary and Secondary Data

Osuala (2005) terms primary data as the collection of facts and figures relating to the population in the census. The primary data were data gathered from teachers and education experts.

Secondary data is considered as the documented data. Information was gathered from various educational libraries, the internet.

Sampling Techniques

Sampling according to Osuala (2005), it is taking a portion of the population as a representation of the entire population. The cluster sampling is a technique in which the entire population is divided into groups, and a random sample of these clusters is selected (Osuala, 2005), It is used where the total population is divided into groups or clusters and a sample of the group selected.

The cluster sampling technique was used to select 10 Junior High Schools.

The schools selected for the study differed in size, type, location, catchment area and were coded as Schools A, B, C, D and E. With respect to much qualitative research (Frankel and Wallen, 2000), the sampled schools are identified only as public and private schools A, B, C, D and E, respectively. The rationale was to obtain data that reflected the diverse range of schools in Ghana.

3.8 Data Analysis Plan

Summaries of the data collected were prepared immediately after transcribing the field notes from the interviews, Questionnaire administration and classroom observation procedures are organized into individual reports reflecting the schools. The results are discussed in the following chapter.

CHAPTER FOUR

PRESENTATION AND DISCUSSION OF FINDINGS

4.1   Assembling the Data

This chapter deals with the discussion, analysis and interpretation of the main research findings isolated from the interview, observation and questionnaire administered in the sampled Junior High Schools studied. The following sections outline the details of data collected.

4.2   Instructional Media found in the sample schools

Instructional media found in the 10 sample Junior High Schools are chalkboards, charts, models, bulletin boards, textbooks and are described as follows:

a. Chalkboards

Chalkboards in the classroom are all locally made of cement or plywood, painted black and fixed to the wall facing the pupils. They are large enough to take whatever the teacher wants to put across during the teaching-learning session. The surface of nearly all the chalkboards seen in the schools looked scratchy as seen in Plate 1.
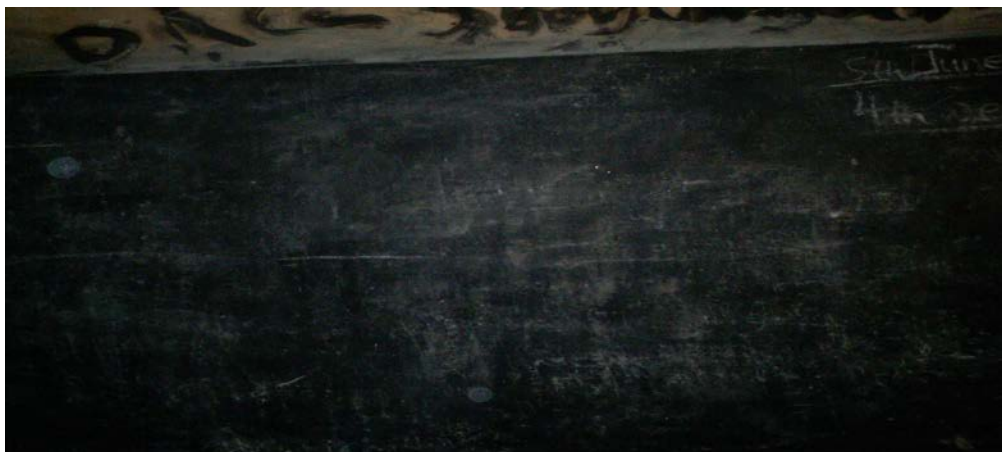

Plate 1 – State of sample chalkboard in Private School B

The pale state of the chalkboards pose reading difficulty for the pupils as what the teachers wrote on them were too faint for easy reading by pupils seated at the back of the classrooms in particular. This could negatively affect the children's reading habits and eyesight if these boards are not renovated.

b. Wall Charts

Wall charts depicting diagrams were found pasted on the classroom walls. Wall charts were 16 in number, were used to teach different subjects. Two out of the 16 charts observed in the schools were torn. One chart also had no title for the subject to be addressed. Texts added to the illustrations were not bold enough for easy reading by pupils. Lack of clarity could affect the outcome of lessons for which such charts are used. This suggests the possibility of different illustrations posing difficulty to some pupils' concentration on what they have being used for. Torn and untitled charts are not suitable for use in the classroom. Plates 2 and 3 show charts on the human body.

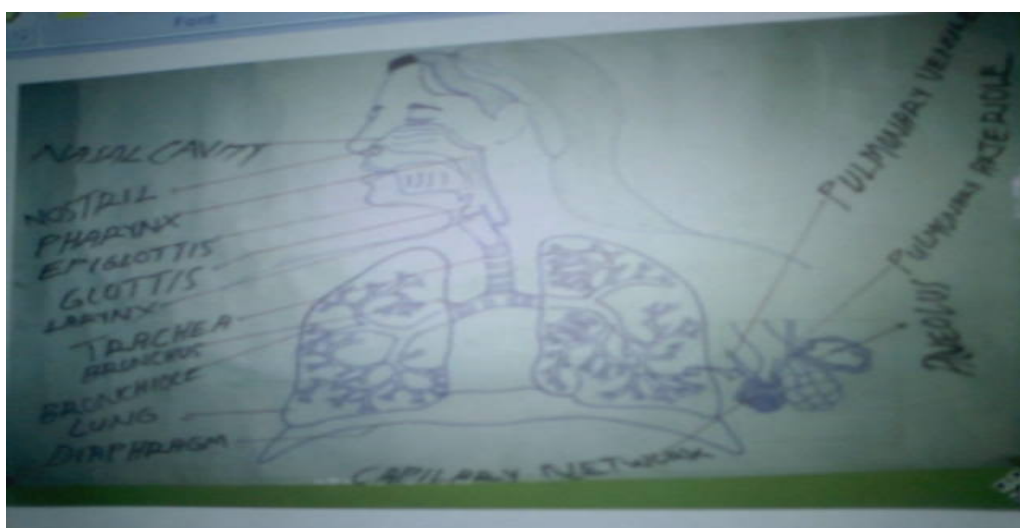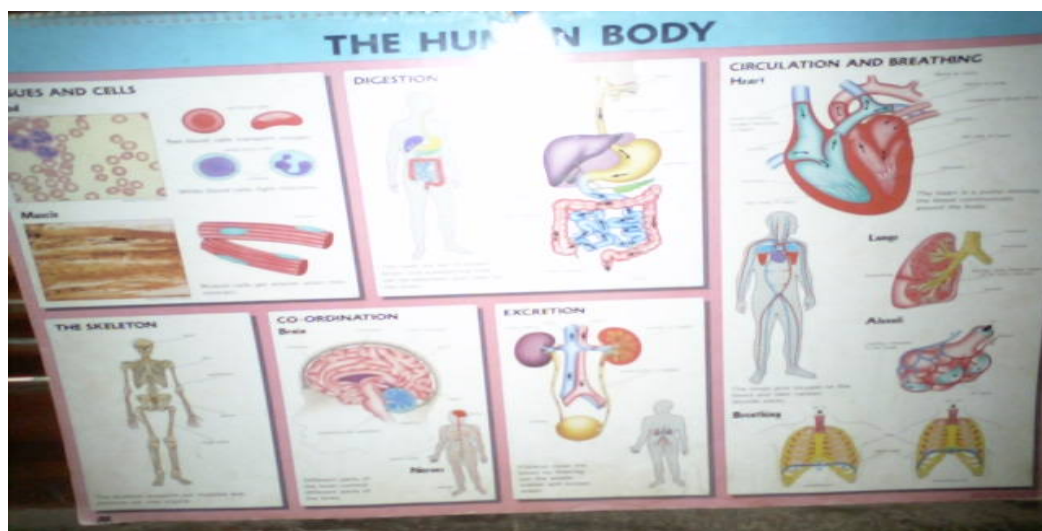Plate: 2-Wall Chart in Private School D

Plate: 3-Wall Chart in Public School E

c.   Models

Plate 4 show models of atoms and molecules represented by small plastic balls, plastic containers, and wooden straw used in teaching Integrated Science. This could positively enhance teaching and help the pupils to understand lessons on atoms and molecules.

Plate 4 – Models in Private School D

d.   Textbooks

Textbooks found in the schools reflected the various subjects taught under the JHS curriculum. The books are mainly kept in a common room and others kept in cardboards. The books found were all in good condition. The location of the books indicate that the pupils have easy access to the textbooks but with the permission of the subject teachers. Having to seek permission to use textbooks is likely to make textbooks unavailable for revision as and when the pupils want them. Plate 5 shows textbooks available to pupils in the Schools.

Plate 5 –Assorted texbooks in Private School E

e.   Cup

A plastic cup (Plate 6) was observed in use to collect water that was used to pour libation in a Social Studies lesson. This was used to demonstrate a traditional custom and enable the pupils understand the import of the lessons in which they were use.

Plate 6-Cup in Private School A   Plate 7-Colour Public School B

f.   Colour Pencils

Six dozens of colour pencils were observed. Plate 7 shows pencils of different shades and tints of colours. Each box contained the same colours. This limitation meant that all the pupils would use the same colours in any exercise in which these colour pencils were used. This could negatively affect the colour variations to be seen during colouring exercises as well as facilitate extensive use of knowledge and differentiation of complementary colours such as red and wine, among others.

g.   Computer

The computer (Plate 8) as an electronic device is used to create, store, receive and input data. The study found that 31 out of the 79 computers were not in good shape. This

suggests that majority of pupils would not be able to learn basic computer skills at the specified periods of time and the objectives of the curriculum cannot be achieved.

Plate 8 – Sample of Computer in Public School A

h. Brushes

Both sable and bristle brushes were found (Plate 9). The brushes seemed overused. This is likely to make it difficult to obtain smooth edges of designs made during painting activities.

Plate 9 – Brushes in Public School E

I. Dining set

Plate 10 shows a set of cutlery and plate which were used to set a dining table in a catering class. The items are normally packed into the cupboard immediately after use, making it difficult for the pupils to use them to revise lessons in which such items are used to reinforce learning.

Plate 10 - Dining set in Public School A

j.   Farm Tools

Plate 11 shows farm tools found in the schools.

Plate 11- Farm tools in Private School A

The three tools observed consisted of a cutlass, machete and a rake used in an Agricultural Science lesson. The handle of the cutlass had some parts broken. This suggests improper handling which could cause problems for the pupils during use.

The use of the above resources as instructional media complements the conventional ones like the chalkboard, textbooks, models, charts and real objects that are available and mostly used by the teachers in the lessons that were observed. This suggests that teachers could at least use non-conventional materials to illustrate their lessons depending on their knowledge base, resourcefulness and goodwill towards their pupils.

4.3   **Observed use of instructional materials**

The following section describes how the identified instructional materials were used in the lessons observed in the sample schools. Basically, the teachers' approach to teaching, lesson organisation and general classroom delivery procedures and methods employed were similar across the 10 schools.

Social Studies

Lessons in Social Studies were observed in all the 10 selected schools. It was realized that in private School C, a JHS 1 teacher used the chalkboards and textbooks as the predominant teaching and learning resources in the lessons observed. The teacher made reference to countries which use different types of constitution. It would have been good for the teacher to have brought a copy of the 1992 Constitution of Ghana among others, to show to the pupils during the lesson. This would have enabled the pupils examine what constitutes Ghana's Constitution and those used in other countries. This lesson was different from the lesson observed in public School C where a JHS 3 teacher taught a lesson on rocks.

As an introduction to the lesson in public School C, the teacher took the pupils outside the classroom and showed them examples of rocks and also explained to them how they were formed. The pupils were then brought to the classroom. Getting to the end

of the lesson period, the pupils were again taken outside where they were grouped and each group asked to identify and describe the types of rocks they could find in the school environment.

General Science

Lessons observed in General Science were similar and mostly dominated by the use of the chalkboards, textbooks and other instructional materials. The use of a coal pot, plastic and tin containers in a lesson in this subject in a JHS 1 class in private School D was unique as none was observed in any of the other schools. These resources were used in course of the lesson. As a teaching resource, their use was demonstrated to the pupils and then they experimented with them. Other unusual teaching resources observed were table tennis balls and strips of straw used to teach a lesson on atoms and molecules. These fascinating resources were not observed in the schools. Their use enabled the pupils to form concrete expressions of the topic taught.

This lesson was different from those observed in a JHS 2 class in public School E where a pin-hole camera was the topic being taught. The chalkboards and textbooks were predominantly used in lessons. The resource was inappropriate for the lesson. The teacher could have employed the services of a camera man to explain and demonstrate how the camera functions and how photographs are produced from it. This would have reinforced the teacher's explanations and cleared the pupils' minds of any doubts which showed through their failure to provide answers to questions asked by the teacher.

Mathematics

Mathematics lessons observed in the 10 schools were dominated by the use of the chalkboards and textbooks. It was realized that in private Schools A and D, JHS 2 teachers who taught lessons on Simple Interest and Simultaneous Equation, the lessons

taught were teacher centred and all the pupils did was to provide answers to the questions asked.

This was different from a JHS 2 lesson on "data" taught in public School E where the teacher asked the class to provide information on their age and colour to enable them draw graphs from the data gathered. This exercise which ran through the learning process generated some noise but the teacher was able to control the class and had the learning objectives addressed.

Visual Arts

Significant use of teaching and learning materials was observed in the teaching of Visual Art subjects. For instance, colour work was taught in JHS2 in public School E and private School B. In public School E, the teacher used colour pigment, brushes and sheets of paper, the teacher demonstrated how secondary colours could be obtained from primary colours. Various items such as leaves and fruits were brought to the classroom for reinforcement.

Unlike private School B, the teacher taught a similar lesson on colour scheme by using a chart illustration at the end of the class to facilitate the teaching of the lesson. It was realized that pupils would find it difficult to determine what other colours could be obtained when more or less of two colours were mixed.

Home Economics

A lesson in Home Economics was observed in JHS3 in public School A on Table Setting was taught with an illustrations presented in the textbook aided by use of the chalkboards. This was an abstract lesson presentation. It was observed that materials for setting a table such as cutlery and table cloth were available for the teacher to demonstrate how a table is done to reinforce what had been taught, for the pupils to familiarize themselves with the procedure, and to achieve the objectives of the lesson.

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In public School E, a JHS2 teacher taught the lesson sewing. At the beginning of the lesson, the teacher wrote the topic on the board and used the textbook, a chart and a diagram as illustration. A sewing machine could have been brought into the classroom so that the teachers could demonstrate to the pupils how threading is done and how the machine functions to satisfy the curiousity of the pupils.

Religious and Moral Education (RME)

Lessons in RME were observed in all the schools. In public School E, the JHS1 teacher taught the subject using charts displayed on the classroom walls and diagrams in the textbook. In the lesson, pupils were called by the teacher to read and explain the content of the textbook based on how each understood it. Items brought into class for the lesson were a Bible, crucifix and a photograph to represent materials found in a Christian home. These materials were shown to the pupils and referred to throughout the lesson delivery process.

English Language

Lessons observed were similar in the schools. In public School D, a JHS1 teacher taught Synonyms and Antonyms by using charts displayed on the classroom walls. With the exception of this school where charts and textbooks were used in RME, chalkboards were the only instructional media used in teaching this subject in the other schools. In each case, the teacher asked questions to which the pupils provided answers.

Twi

Lessons in Twi were observed in all the schools. In private Schools A and B, the teachers taught lessons on "Nsaguo", that is the pouring of libation to JHS3 pupils. The teacher in School A used a calabash filled with water to demonstrate how libation is poured traditionally. The teacher called the pupils periodically to demonstrate the process to find out if they had understood the lesson.

The teacher in School B only showed the pupils how libation is poured without giving them opportunity to demonstrate their understanding of the process. When called to do so the pupils in this school found it difficult to show how libation is poured and the words that are recited in the course of pouring libation.

Information Communication Technology (ICT)

The process for lesson delivery observed in ICT was similar in the schools. In public School E, a JHS1 teacher taught "Parts and Functions of a Computer" using a diagram drawn on the board because the school had no computers. The use of diagrams was inappropriate as the complex parts of the computer could not be shown to enable the pupils identify them and relate this with the knowledge of the functions of the computer. With no computer to show them, the pupils then would find it difficult to identify a computer when they see one as compared to private School B where each pupil was asked to examine the parts of the computer closely and answer questions on how they function to make the computer work. It was also observed that School D had many computers and they had the chance to visit the computer laboratory anytime they needed to reinforce what they had learned in class.

Agricultural Science

It was observed in public School E and private School D that the teachers in JHS1 taught lessons on "Farm implements and Farm machinery". The teacher in public School E used pictorial illustrations in the textbook to teach the lesson. On the other hand, the teacher in private School D taught the same lesson with farm tools that were brought to the classroom for the pupils to identify them according to their types, uses and how they should be maintained.

It was observed that pupils in public school E could have difficulty understanding the various complex parts of the tractor and how it functions. The pupils could have been taken to a farm yard to examine the features of an actual tractor for a better understanding of the lesson. Learning for pupils in private School D could be enhanced if they were given the chance to ask or answer questions on the topic taught. These lessons had less use of chalkboards and textbooks.

Pre-Technical Skills

One unique lesson observed in private School B was taught in JHS 3 where the teacher taught "Striking tools" using a hammer, nails and broken down classroom furniture. In the lesson, the teacher raised a hammer and asked the pupils to say what it could be used for. Answers provided by the pupils were used by the teacher to elaborate on the functions of the tool. The teacher also gave the pupils the chance to hit on loose nails in the classroom desks, which the pupils clearly enjoyed doing. It was realized that practicing the use of the hammer enabled the pupils to learn how the hammer should be handled. The lesson enabled the pupils to repair furniture that was broken and kept in the corner of the classroom just before the lesson ended. This exercise facilitated a better understanding of the topic and the skill of using the hammer.

French

Lessons observed in the Schools looked similar. Lessons were dominated by the use the chalkboards and textbooks by the teachers. A different lesson observed in private School C was taught in JHS 3 where the teacher asked the pupils to write stories with the help of diagrams. The teacher used a series of diagrams in different textbooks, and complimented by using pupils as illustrations whenever possible. This exercise got the pupils actively involved in the classroom discussions facilitating better understanding of the topic taught

4.4 Timing of instructional media usage

The timing of instructional media usage observed in the sample lessons seem to depend on the subject, purpose for which the teachers employ them, the type and variety of materials used.

4.5 Variety and frequency of media usage by subject Teachers

Of the 11 subjects in which lessons were observed – English, Mathematics, Social Studies, French, Home Economics, Twi, Visual Arts, ICT, RME, Pre-Tech, and Agricultural Science - very significant use was made of the chalkboard, textbooks and other resources as indicated in Table 3. Of the 51 lessons observed and recorded, General Science, Visual Arts and Agricultural Science had the most instructional materials used. The computer is the only high-tech instructional resource used in the lessons observed in the schools. This high frequency of usage suggests that the teachers had the requisite skills and also saw the need to use other formats to make their lessons more activity oriented and therefore meaningful to the pupils. It is also possible to relate this practice with the practical nature of these subjects which makes it difficult to teach in the abstract.

Conventional media referred to in this report include the chalkboard, models, textbooks, illustration, charts and real objects while non-conventional media are the resources that do not form part of regular school supplies but are brought into the classroom for purposes of illustrating lessons taught by the teachers. Examples are cutlass, cups, school furniture and cutlery.

Table 3 – Variation and frequency of media usage in observed lessons

SUBJECT	Number of Lessons observed	Conventional media used	Non-Conventional Media used
English	2	2	0
Mathematics	3	3	0
General Science	10	3	7
Twi	2	2	0
Visual Arts	7	2	5
ICT	3	1	2
French	2	2	0
Social Studies	3	2	1
Agricultural Science	9	4	5
Home Economics	8	4	4
Pre-Technical Skills	2	1	1

Table 3 shows that, some form of instructional media were used in all the lessons observed in the 10 selected schools. The fact that both conventional and non-conventional media were used mostly in General Science, Visual Arts and Agricultural Science suggest the resourcefulness of the teachers of these subjects and perhaps, the level of zeal these teachers have for employing whatever they can lay hands on for use as illustrations in the lessons they teach. These could be teachers who use instructional media to teach practical lessons as part of their normal professional practice. Pupils in their classes are more likely to understand lessons taught them by these teachers and retain more of the information given them.

4.6   Teachers' knowledge of instructional media

Information deduced from the questionnaire indicate that 46 or 57.5% of the 80 respondents understood instructional media as "teaching and learning materials" while 34 or 42% explained them as textbooks and chalkboards. This suggests that the respondents generally know what instructional media are. In their explanation, 40 or 50% of the respondents said teaching and learning materials consist of real objects, models, photographs, globes and maps that are appropriate for use in the classroom. While 30% said they are illustrations and cut-out objects, 14% said they are simple laboratory apparatus and textbooks.

The teachers certainly have an idea of what instructional media are but only half of them know the variety and range of resources that are classified under instructional media. However, the teachers who do not regard or classify any materials brought into the classroom to illustrate a lesson as instructional media are not likely to use them but teach abstract lessons mainly because these are not provided by schools and therefore have to be deliberately searched for and carried to school. Not all JHS teachers will be willing to carry things to school by public transport but the pupils may be willing to bring them if they are told to do so for the sake of being taught lessons with the items.

4.7   Availability of media in the schools

Answers to the questionnaire revealed that 72.5% of the 80 respondents reported that their schools have inadequate supply of the media needed for teaching and learning, while 27.5% said they have adequate supplies of the resources. It can be said that the large majority of teachers do not have instructional media in the required quantities for effective use in teaching the subjects comprising the JHS curriculum.

This implies that teachers who do not have the resources they need may teach abstract lessons if they are not willing to look for whatever they can use to make their lessons more vivid to their pupils. Table 4 seems to give some hope for good quality teaching, learning and BECE results as each lesson observed saw some instructional material usage.

On the issue of who provides instructional materials for use in the schools, the study respondents identified the Ghana Education Service (GES), the schools, teachers, school heads and pupils as those who have the responsibility to provide the resources needed for effective teaching. However, 62 or 77.5% of the teachers said they provide their own resources while 10 or 12.5% said the GES supplies the materials found in the schools. This suggests that other than the chalkboard and textbooks supplied by the GES, it is the JHS teachers themselves who provide their own instructional material needs. It means it is only those teachers who know the advantages of using such materials and those who believe in their use who would go the extra mile to search for what they need for classroom use. Teachers who only use chalkboard and textbooks in lessons can therefore not be blamed much for what they do in the classroom.

Fortunately, some teachers accept the fact that they are liable for any low performance recorded among their pupils and so do well to locate appropriate materials to meet the academic needs of their pupils. Perhaps it is those who went through training that included the use of instructional resources who acquired this habit of usage. In this case, it can be said that those teachers who depend on GES supplies did not have the requisite training with instructional materials or they do not know their importance in children's education? These are questions that were not investigated but which are of further research interest.

4.8   **Knowledge and use of community resources**

Table 4 shows the level of knowledge of other environmental resources that teachers could tap to facilitate teaching and learning in schools.

Table 4 - Understanding of community resources

Meaning	Frequency of response	% of total respondents
Things in the community that can be adapted for teaching and learning	12	15.0
Libraries, stores and markets	4	5.0
Not known	64	80.0

As indicated by the figures in Table 4, 80% of the respondents had no idea what community resources are. To find that only 15% of the 80 respondents see community resources as things in the community that can be adapted for teaching and learning implies that majority of teachers in the sample schools hold the view that the odds and ends available in their localities do not fit into the mould of instructional media and may not regard the cutlass, cup, and cutlery that their colleagues use to teach lessons as worthy of the name "instructional media". This suggests lack of recognition for the efforts of teachers who use instructional media except when they use charts, textbooks and chalkboards.

4.9   Teachers Resources Centre

The study found that 54 or 67.5% of the 80 respondents were aware that the GES operates a Teachers' Resources Centre where all categories of teachers could go and learn to make teaching and learning materials for their lessons. Besides, 82.5% of them had never paid visits to the nearest centre which is in Kumasi. They had no reasons for this. This implies lack of knowledge of the benefits that these teachers and their pupils could derive from the expertise at the centre and no desire to research or find innovative ways to induce effective learning among their pupils. It is important that the GES creates awareness of what the centre could offer teachers in the Kumasi metropolis so that they could seek help to solve educational problems to increase the chances of their students to attain higher educational heights. The heads of the sample schools should also use their "I-have-been-there-before" experience to direct their teachers to resources that could help them enhance their professional practice.

4.10   Appropriateness of observed media in use

When questioned on the appropriateness of the materials that teachers who taught the observed lessons used, 72.5% of them responded that what they used were appropriate for classroom use. This suggests that if the requisite instructional materials suit the teaching methodologies applied by the teachers, the pupils in those classrooms did assimilate much information in all the lessons observed. Because the materials used were not assessed as part of the observation, it is possible that the teachers only assumed they were appropriate just because they found their use helped them meet the objectives of the lessons. Indeed, the cutlery and plate were the most appropriate resources for the Home Economics lesson, likewise the computer and farm implements.

4.11   When the issue of whether JHS pupils should be taught with the resources that were observed came up, 95% of the respondents held the view that the pupils are young and so it is important that such materials are used in addition to the chalkboard and textbooks. They intimated that without these "non-conventional" teaching materials, concepts which need reinforcement to generate firm understanding cannot be effectively addressed during lessons. This, they also said, would make the pupils perform poorly in class evaluation and examinations.

The study found that 82.5% of the respondents had used models, real objects and such odds and ends for teaching lessons before, suggesting some level of training in the use of such resources had been provided previously and the teachers also see the need to use them.

On the importance of instructional media to teaching and learning, the large majority of the respondents (87.5%) reported that their use make teaching and learning easier than without them. This suggests that the teachers are aware of the benefits to be derived from whatever is used to illustrate lessons and that both teachers and pupils gain from their use. This reflects the use of such materials in all the 51 lessons observed. It can be stated that some illustrations were used in lessons which were not observed by the researcher.

4.12   Table 5 - Categories of teachers observed

Category of teachers	No. of teachers	% of total
Untrained	6	27
Non-professional undergraduate	9	41
Trained professional	7	32
Total	22	100

It is obvious from the table that the 10 Junior High Schools studied had slightly more university graduates than trained professionals. This is the group of teachers who were observed teaching General Science, Agricultural Science, ICT and Home Economics. This suggests that the degree programmes these teachers went through had equipped them for effective teaching and that they all believe in the use of interactive teaching that promotes effective learning. They might have become so used to using instructional materials that they resort to creative ways of identifying what is necessary for the topics to be taught. This is an effort worth emulating by other teachers. The implication is that the higher the education of a teacher, the better he or she is positioned to offer quality service to their pupils.

4.13   Impact of instructional media usage on pupils

Except for use of a chart for teaching synonyms and antonyms in public School D, there is no significant evidence from the observed lessons to suggest that where instructional materials of any kind were used in a lesson, they were a disincentive to pupils' learning.

On the contrary, there was every indication that in those lessons, the pupils got more involved in the activities that the teachers initiated; they were more enthusiastic, participated actively in the lessons and benefitted immensely from the topics taught.

Although not all the teachers observed used instructional materials effectively, where these basic media were used, the teachers not only talked and explained things less to the pupils, they also engendered a congenial classroom atmosphere that motivated their pupils to participate more actively in their lessons. From all indications, pupils taught with the materials absorbed more knowledge from the demonstrations they saw and the exercises they did with the resources, and they appeared to understand things faster than was the case in classrooms where the teachers taught by the lecture method. It was also realized from the study that instructional materials available in the 10 schools were grossly underutilized by the teachers in the schools.

The fact that some subject teachers did not make use of instructional materials indicate apathy, reluctance and a lack of goodwill towards the pupils. This can be attributed to lack of support for good practice. The GES has to organise in-service training programmes in the making and use of basic instructional materials from odds and ends to enable all teachers refresh their minds of the benefits of teaching with whatever can be used to make teaching and learning effective for their pupils. The Inspectorate unit of the GES should also monitor the quality of teaching and learning in the schools and supervise the heads of Junior High Schools to offer effective leadership in showing the way for doing the right things in the classroom as this directly affects the academic achievement of the pupils in their charge.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1   Summary

Evidence from the study shows that classroom use of instructional media impact positively on pupils' participation in class activities and learning in Junior High Schools in Ghana. Based on data gathered through observation, interview and questionnaire administration, the thesis focused on examining how teachers in the selected Junior High Schools studied use instructional media available to them in the lessons they teach, how they use particular media in specific subjects, and the effect of instructional media usage on the teaching and learning process that occur in the classroom, and on pupils in 10 Junior High Schools in the Kumasi Metropolis.

The study indicates that Junior High School pupils could benefit from the use of instructional media whether they are actively used or not as acknowledged by the teachers interviewed in lessons. However, unlike the practice reported in the literature in developed countries, what was observed in the study consisted of a few conventional and some non-conventional instructional media. All the schools have chalkboards in each classroom and sufficient quantities of prescribed textbooks to guide teaching and learning in the schools. Models, pictorial illustrations and real objects were not widely available in the sample schools.

It is evident from the study that the subject a teacher teaches is directly related to the use of instructional media such as real objects and models beyond the use of textbooks and the chakboard. This is explained by the fact that more users of instructional media were found among teachers who taught practical subjects like General Science, Agricultural Science, Home Economics and ICT, and had acquired the theoretical

knowledge and practical understanding of such materials as part of their training in college.

Teachers who used non-conventional instructional media like real objects and models were those who had university education or hold degrees in their respective subject areas. Such teachers had professional training and have recognized teaching qualifications to effect learning outcomes. This suggests the need for teacher training colleges to provide their trainees with the right kind of knowledge needed for teachers to take responsibility for ensuring their pupils get the information they need by using instructional media in the lessons they teach. The curriculum guiding the professional training of Ghanaian teachers does not seem to be providing adequate incentives for JHS teachers to identify or develop instructional materials appropriate for the subjects they teach.

The lack of supply of the most appropriate conventional instructional materials like models, computers, charts illustrating difficult topics, and smooth painted blackboards by the Ministry of Education and the Ghana Education Service has led to JHS teachers finding alternative materials to enable them teach more interactive lessons to promote effective learning for their pupils. Sadly, the Visual Arts teachers in the schools are neither providing their own illustrations nor helping their colleagues to develop what is appropriate for their subjects. Besides, the teachers seem unaware of the Teachers Resources Centre in Kumasi and how they could utilize its resources to benefit themselves and their pupils. These are matters of further research interest.

The fact that only one of 38 public training colleges in Ghana offers Visual Arts education for teachers also does not help matters as they are the only ones whose training probably affords them the right skills for making and using instructional materials.

Lack of artistic skills to design and produce instructional materials can therefore be linked as a significant factor in the minimal use of conventional and improvised instructional materials in the subjects comprising the JHS curriculum. The dearth of appropriate materials also has a negative influence on the zeal for regular use of the most basic media in the classrooms. The implication is that changes in teacher training has not matched corresponding changes in basic education, and hence teacher attributes and attitude to teaching practical lessons that can induce learning and high academic performance in the specified JHS subjects.

5.2   Conclusions

The study makes the following findings very clear:

1. Lack of wall charts, models, and other conventional media to complement the use of chalkboards and textbooks in the schools is making it difficult for teachers to offer quality teaching to promote high academic achievements for Junior High School pupils.

2. There is lack of financial and logistics support for teachers to put in more effort and help their pupils gain more knowledge from their lessons.

3. Lack of supervision by the Heads of the schools is making it easy for teachers to teach abstract lessons even where the topics demand usage of some instructional media.

4. Lack of research into the designing and production of instructional media by teachers is negatively affecting teacher performance and learner output.

5. Resources such as plants, furniture, buildings, resource persons in the local communities, and others that are available in the various school environments should be tapped to enhance teaching and learning.

5.3   Recommendations

To increase the use of basic instructional materials in the schools and promote higher academic achievement for Junior High School pupils, the following recommendations are being put forward for consideration and implementation:

1. Ministry of Education and Ghana Education Service should ensure the supply of instructional media for use by teachers for effective teaching and learning. Such media could include locally produced materials generated by teachers and resource experts for better lesson delivery.

2. Ministry of Education and Ghana Education Service should provide funds to support local production of instructional media by the Teachers Resources Centre in Kumasi to train and encourage more teachers to produce and use them.

3. Teachers should encourage their pupils to bring such items as empty cans and plastic containers that the teachers could use to help their pupils to visualize abstract concepts to help them understand the relevant issues.

4. In-Service training, workshops and seminars should be organized to orient Junior High Schools teachers to improvise alternative instructional resources and the right ways to use them during lessons. This will encourage appropriate use to achieve the lesson objectives and encourage the pupils to use them as learning resources.

5. Excursions and field trips can serve as a major means of exposing Junior High School pupils to the environment as a learning resource for firsthand information and experiential learning.

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APPENDIX
82

QUESTIONNAIRE FOR RESEARCH

This questionnaire is designed to solicit information on the current situation of "Instructional Media as a tool for ensuring quality teaching and learning for pupils in the Junior High Schools. (Selected Schools in the Kumasi Metropolis)"

This research is an attempt to ascertain the strengths and weaknesses of Instructional Media as a quality tool in the teaching and learning process.

It is aimed at deriving information on the impact of 'unorthodox' instructional media in the teaching and learning process. It is aimed at deriving information on instructional media such as real objects, models that are added to the "orthodox" that is the blackboard and textbooks to ensure quality teaching and learning.

The information you provide will `not´ be used outside its intended purpose.

Your personality will not be linked to the answers you would provide.

Please fill out the questionnaire to the best of your knowledge and ability. I am interested in every response you may give. Thank you.

SECTION A):   General Background of the respondent

Please, tick (√) the appropriate box that bears your answer.

1) Age (in years) Below 20 ☐, 21-25 ☐

26-30 ☐, above 30 ☐

2) Gender: Male ☐   Female ☐

3) Level of Education: Untrained teacher ☐, trained teacher ☐,

H.N.D/Degree holder ☐, Tertiary ☐

1. What are Instructional Media?

   ☐a) Blackboard and textbooks

   ☐b) Books used for demonstration

   ☐c) Teaching and learning materials

2. Instructional media other than the blackboard and textbooks that can be

   added are?

   ☐a) Illustrations and cut-out objects

   ☐b) Simple laboratory apparatus and textbooks

   ☐c) Real objects, models, photographs

3. Are the needed Instructional Media available for use?

   a) Yes ☐   b) No ☐

4. Who provides the Instructional Media you use?

   ☐a) Ghana Education Service

   ☐b) Teachers (School)

   ☐c) Pupils

5. What is your knowledge on Community Resources?

   ☐a) Things in the environment that can be adapted for teaching and

      learning

   ☐b) They are libraries, stores and markets

   ☐c) No idea

6. Are you aware of the Ghana Education Service Resources Center?

   a) Yes ☐   b) No ☐

7. Are the appropriate Instructional Media used during the

   teaching and learning process?

   a) Yes ☐   b) No ☐

8. Are pupils in the Junior High School mature enough to be taught without

the aid of Instructional Media?

a) Yes ☐   b) No ☐

Give reasons for your answer……………………………………..

………………………………………………………………………….

………………………………………………………………………….

………………………………………………………………………….

9. Have used instructional media such as models, real objects for teaching before?

a) Yes ☐   b) No ☐

10. Why do you use Instructional Media?

    ☐a) They make teaching and learning easier

    ☐b) They are economical

11. When do you use Media during the teaching and learning process?

    ☐a) before teaching

    ☐b) when teaching

    ☐c) after teaching

    ☐d) none of the above