

DIORAMA ART – A POTENTIAL MEDIUM FOR MUSEUM EDUCATION

M. Enti¹, G. Brako-Hiapa¹, J. Adu-Agyem¹, P. Osei-Poku¹ and R. Steiner²

¹Department of General Art Studies, KNUST, Kumasi

²Department of Integrated Rural Art and Industry, KNUST, Kumasi

ABSTRACT

The study recognizes the traditional role diorama plays as an effective medium for museum education and employed both descriptive and experimental methods to produce a diorama to popularize it for the Ghanaian populace. It explored the use of non-traditional modelling material (corn shucks and cobs) in the preparation of diorama. The results of the study indicate that corn shucks and cobs which have less use in our environment as raw materials can be used as modelling medium to produce sculpture. As such other unconventional materials could be explored for modelling in order to open more avenues to sculptors. Besides, diorama could be a mini-museum, a potent tool to keep proper records, document valuable cultural and historic information to inspire and educate the public; as well as a way of building museums on school campuses to expand classroom teaching and learning.

Keywords: *Diorama, Museum, Education, Aperture, Assemblage.*

INTRODUCTION

Throughout history, art has been a visual representation comprising products to which humankind have applied their skill and knowledge and executed for specific functions in their culture. Ghanaians generally use art to maintain the concept of reality, to enhance the appearance of objects and to maintain their culture. Appropriate documentation, preservation and protection of the arts and culture then become important during the present influx of foreign ideas, values and technology (Adu-Agyem, 1998).

Museum is in essence a collection and study of objects of historic and aesthetic value. These

objects which serve to illustrate certain developments and trends are exhibited in installations planned to inspire and educate the public (Hirzy, 2008). Collections of art therefore are of fundamental importance in the cultural development of the modern world.

Aside the open display of individual art forms like sculpture, pottery and painting, diorama is another vital tool for displaying art forms (Iziko, 2001). Museums use diorama art to show historical events, industrial methods, legendary stories, animals and plants in their natural setting (Hass, 1955; Hirzy, 2008). However, not much has been done by way of using dio-

rama art for museum education in Ghana (Brako-Hiapa, 2004).

Realizing the importance of diorama art as it displays images or scenes in naturalistic settings, the study seeks to produce a diorama as a means of popularising it for museum education. Farrant (1982), Matini *et al.* (1995) and Talabi (2003) all agree that it is a fact that education of any people without written language is done primarily through images, hence the design and construction of a model diorama.

MATERIALS AND METHODS

The areas of study were Bolgatanga, Bawku and Pusiga, all in the Upper East Region of Ghana. The research began as an exploratory study since little was known about the diorama art in Ghana. However, when more light was thrown on the problem, it became imperative to use the descriptive and experimental research methods. The descriptive method was used to record, describe, analyze and interpret secondary data from books (Best, 1981; Ndagi, 1984). This provided evidence on what had already been done on the study. The experimental research method on the other hand, was employed to find out the possibility of using ground corn shuck and cobs to create sculptural forms through modelling. The descriptive research method was again used in the analysis of the data collected through the experimentation with the ground corn shuck and cobs.

Diorama making involves the use of different kinds and types of tools and materials one can imagine and think of; owing to this, there are a lot of materials and tools available. Presently, creativity is at its highest peak with regards to Art so that one can now use most materials and tools in different ways to create something pleasant (Acquaye *et al.*, 1987). Brett (1990) opines that a tool is a device which is used for making items in the studio or workshop. In this context, all implements used in the production of the diorama are classified as tools. It is noteworthy that generally, the criterion for selecting a tool and material for any diorama preparation

is that it should be useful to the artist in the various processes. The major tools and materials are grouped under various headings based on their use in the following processes:

- *Framework or cabinet construction*
- *Groundwork details*
- *Background treatment*
- *Miscellaneous*

Framework or Cabinet Construction

The tools for the construction of the framework were grouped based on their use as follows:

- Measuring, setting and marking out tools to take exact sizes and lengths of items. Examples include ruler, tape measure, try square and mortise gauge.
- Cutting tools e.g. saw, planes, chisels.
- Holding devices used to hold work pieces when working on item e.g. clamps.
- Fixing tools e.g. hammer, wooden mallet, nail punch, and bradawl.

Materials used for construction of the cabinet included – wood stripes and boards, plywood, strawboard, adhesive (polyvinyl acetate (PVA)), wire nails of different lengths and sand paper.

Groundwork Details

Tools for groundwork included those suitable for cutting, clamping and squeezing tightly wires for armature building and modelling tools. Examples are pliers, hacksaw, knife and spatulas of various sizes and shapes. On the other hand, materials used for the groundwork details were iron rods of 0.5cm diameter size, chicken wire, thin flexible wires, corncobs, shucks, sand and white wood glue or polyvinyl acetate (PVA).

Background Treatment

The tools for the background treatment were suitable brushes for priming, drawing and painting; whereas materials used included different paints and media suitable for priming, sizing, drawing and painting. Examples are emulsion, acrylic, oil paint, and pastel.

Miscellaneous

Accessories essential were lamp holders, flexible wires, plugs and bulbs used to extend electricity into the cabinet.

Preliminary design

Preliminary design in this context refers to the preparatory activities that preceded the actual work. Having identified the appropriate tools and materials the following preparatory stages were followed.

- *Decision on a Theme*

Hass (1955) recommends that before one undertake any diorama project, there is the need to decide on a theme. A theme was therefore decided on, to produce a Diorama that portrays indigenous weaving using the immovable loom. The use of immovable loom for the weaving of the narrow strip fabric into traditional Kente cloth and *Fugu/Dansika* is gradually being relegated to the background. It has not been entirely abandoned but it is not popular among the indigenous traditional weavers presently because of the availability of modernised movable looms. This may be as a result of contact with the outside world. As such, this theme was chosen to draw viewers into this past way of indigenous weaving which shows so much creativity and artistic ingenuity.

- *Planning*

This involved a careful investigation, analysis and study of what to do. All the necessary facts about indigenous weaving was sought out and gathered. This formed the basis of the project. In the quest for physical evidence and technical studies of equipment and information relating to the project, some field work was carried out as time and resources permitted. Visits were thus made to the Upper East Regional Museum at Bolgatanga and to Bawku and Pusiga respectively.

On the basis of the field work, tools and materials relating to the study were observed, particularly noting their typological differences from place to place and the methods of their employ-

ment. Interviews that were conducted centred on the different traditions, concepts and attitudes towards the nature and purpose of the art as practiced in the different communities. Information was recorded by means of audio taping, photographing and field notes from the series of interviews held in the communities.

Drawing

Drawing in this context not only represents figures or objects on a support, but also involves noting down what has been planned. Ideas on the theme were therefore put on paper. For example, the groundwork was to comprise three figures, while the dimensions of the cabinet were to be as follows: 120cm in length, 75cm in width and 90cm in height. In addition, drawings or sketches of the major individual figures making up the composition were made. These drawings were first sketched and then altered many times (for instance adding more figures) for the composition to take shape. The composition was based on data collected on the use of the immovable narrow strip handloom weaving from the Upper East Region as shown in Fig. 1.

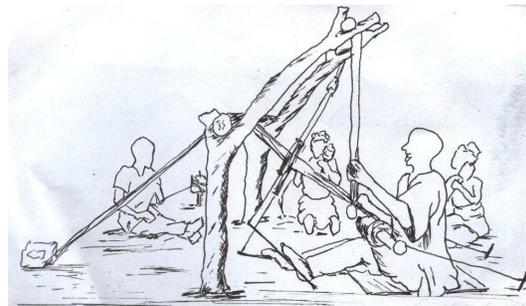


Fig. 1: The composition of the groundwork

Sketch Model

It is always important to choose a suitable material to make a model that will serve as a guide in the execution of the final work. Sketch models of figures constituting the groundwork were therefore made in clay. These models were evaluated and the necessary corrections made and used as a guide.

Method of Production

Different techniques and methods go into the preparation of a diorama. The groundwork, background and cabinet, which are the main components, were therefore prepared separately. These were then assembled to form a unit.

The Groundwork

- *Preparation of a base or support:* The appropriate wood planks or boards of red hard wood were thoroughly prepared by planing, cutting and joining to suit the subsequent working conditions.
- *Construction of armatures:* The armatures, which were the frameworks for the modelled figures were constructed with 0.5m iron rod type.
- *Modelling:* The direct additive method was employed. The piece was modelled by building up forms gradually. First, a quantity of the ground corncobs and shucks were picked and mixed together. Second, white glue was added and stirred thoroughly into a mixture of thick paste. Third, using the modelling tools, the thick mixture was picked in bits and applied directly to lay the underlying masses on the armature as noted by Averašboro (2000). The thumb was occasionally used. When a

layer of mass was laid, it was left to set (harden) before another layer was built on.

- *Construction of loom set-up:* The main posts of the loom were carved from rugged stems of a guava tree branch having forks at the top and the middle. These were fixed to the ground by gluing and nailing. Two bars cut from a straight stem of tree were fixed in-between the forks at the top and in the middle. Whereas the bar in the middle carries the warp yarns, the top bar holds the pulley for the heddles and the reed. From the two ends of the crossbar, two ropes were tied and suspended to hold the cloth beam. At the ends of the cloth beam other ropes were tied and attached to weight (stone) to keep the cloth beam and the tension of the warp in a firm position. The reed and heddles were prepared and hang down from the top bar of the posts. This is shown in Fig.2.

The Background

The background scene was based on a photograph taken at the Tesh-Natingu weaving village near Pusiga in the Upper East Region of Ghana during the field study. The scene was painted on a canvas and then mounted on the background of the cabinet. The figures and objects in the scene were first sketched. Paint was then applied; stroke by stroke until a uniform tone was achieved. Other shades of colours

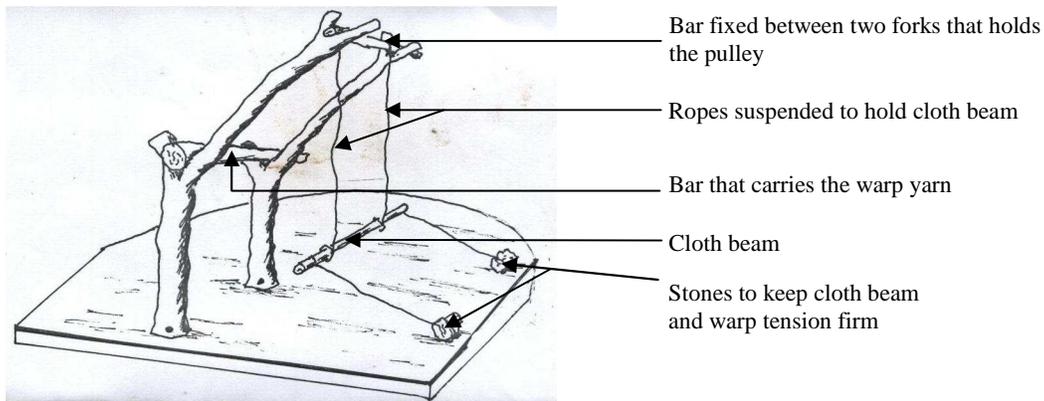


Fig. 2: The loom set-up



Fig. 3: The background painting

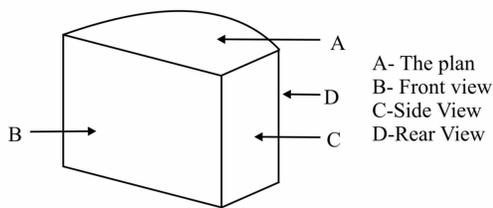


Fig. 4(a): Views for orthography projection

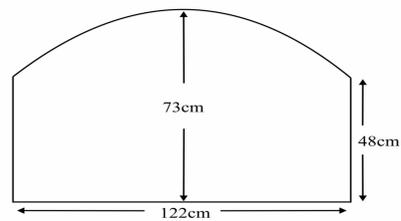


Fig. 4(b): The Plan (A) in Fig 4(a) expanded

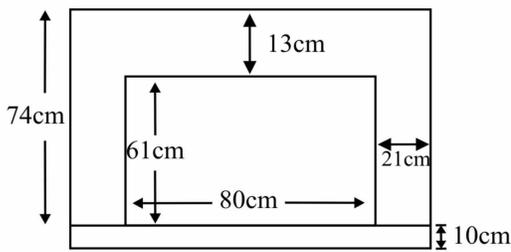


Fig. 4(c): The Front view (B) expanded

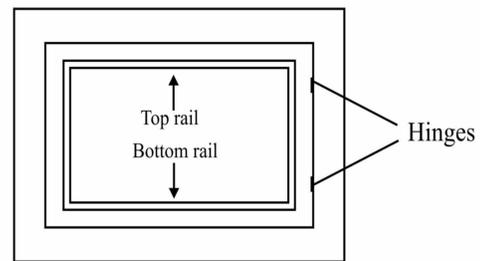


Fig. 4(d): The Aperture of the diorama

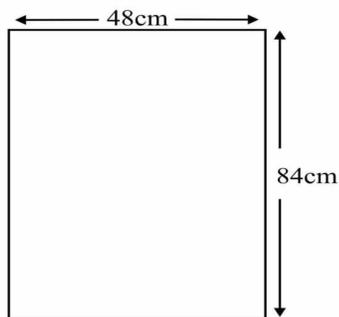


Fig. 4(e): The Side view

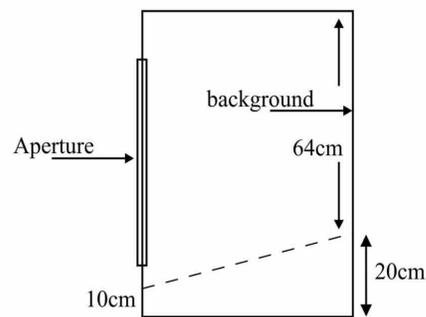


Fig. 4(f): Cross section

ours were applied over the flat areas to build up forms and indicate details of the composition for the scene to look realistic as shown in Fig. 3.

Construction of the Cabinet

Detailed construction drawings showing the views of the cabinet from the front side, cross section and the plan were made as shown in Figs. 4(a) to (f). Joinery items for framework and casing were cut to specific sizes, marked out and mortise chopped; the joints were fitted and assembled by gluing and nailing.

Assemblage of the Parts

Assemblage as used here refers to the process of creating three-dimensional work of art by bringing various parts together to form a unit. Thus, the pre-formed components – the groundwork composition, the background painting and the cabinet – were brought together into an integrated whole. The painted background scene was mounted on the background support of the cabinet by gluing and nailing. The groundwork composition was also fixed into the cabinet and secured by nailing. The window to the aperture of the cabinet was then put in place to make the diorama complete as shown in Fig 5.

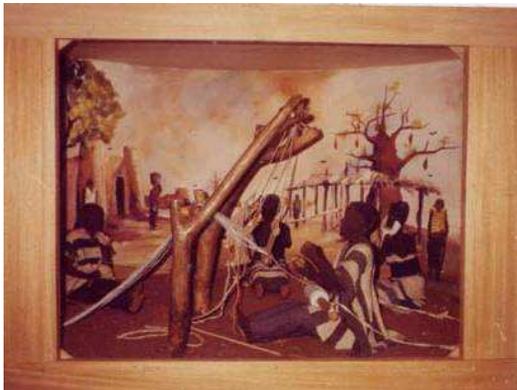


Fig 5: The Assembled Diorama

Finishing and Decoration

Finishing and decoration here refers to the

smoothing, varnishing and other objects added up to make the diorama durable and more attractive. To start with, the modelled figures and all wooden parts were smoothed by sand-papering. Thereafter, the wooden parts were polished with varnish whereas the modelled figures were painted and clothed.

The background painting was fixed by spraying varnish on it. A fluorescent lighting was extended into the cabinet with appropriate wiring. This was done to make the display visible and enhance their appearance by making them attractive and appealing. The window of the aperture was then glassed. Finally, the top of the cabinet was fixed with some wriggly cut-out shapes in front and the sides whereas the left and right sides of the aperture were decorated with a lizard at the right and left sides of the aperture.

RESULTS AND DISCUSSION

Main Findings

As noted earlier, some experimentation was conducted to see whether it was feasible to model with ground corncobs and shucks to create a diorama. Although a lot of challenges were confronted in the production of the diorama, some startling discoveries were made. First, in the preparation of the modelling material, it was found out that corncobs and shucks produce strong and peppery flavour when grinding which was quite disturbing when inhaled. It is therefore advisable to use a gas mask as a preventive measure against inhaling.

Secondly, the study also revealed that corncobs and shucks can be destroyed by mildew when extensively moist. Similarly, it was discovered that when PVA is diluted with water before mixing it with the ground material, it takes a longer time to set or harden and also tends to develop mildew. Therefore using the PVA in its raw state was found to be more effective since it sets faster and curtails the formation of mildew. In essence, the ground corncobs and shucks should not be too moist except with the moisture from the PVA so as to prevent mildew

from affecting the mixture.

Moreover, it was discovered that the corncob and shuck material produced rough surfaces, which disturbed intricate parts of modelled figures. Modelled figures therefore appeared too rigid and static. Sandpapering was therefore found to curtail the roughness and rigidity of the figures making the surface appear softer and more pliable, in other words putting them in more restful and comfortable positions.

Furthermore, the metal spatula was discovered to be more effective in the modelling process. This is because the wooden and plastic spatulas easily got stuck to the modelling material because of the PVA.

In addition, it was noted that diorama making does not require special tools and materials, which are difficult to acquire. For instance, corncobs and shucks, which have less use in our environment as raw materials, could be used to produce sculpture works suitable for indoor decoration. The results of the study thus indicate that these natural media can be used in our schools and colleges as modelling materials to expand the raw material base for effective teaching and learning of sculpture.

Finally, it was possible to produce a diorama to portray a historical event or process in a way, which serves to illustrate certain developments and trends in our indigenous weaving. In other words, valuable information in the form of an aspect of a past way of indigenous life which is being lost due to non-documentation of traditional cultural heritage was identified and properly documented using the diorama to inspire and educate the public.

Analysis and Interpretation

Different materials were used in making the diorama but those that can be easily identified include white wood, plywood of 2mm and 3mm thickness, nails of varying lengths and sizes, rugged stems of tree branch, canvas, acrylic paint, sand, iron rod, twine, raffia

fronds, yarns, white glue, glass, lacquer and varnish.

The composition of the diorama is firmly unified in all parts. The figures are direct impressions of a sitter or model executed with all the spontaneity possible in the modelling medium. The postures of the figures or actions are emphasized to the point of exaggeration. Correct relationship in size between the figures and working equipment is seen and this depicts harmony and balance as well. The diorama is a composition that creates an effect of action because the structural systems are exposed and self explanatory. Unity, rhythm and balance are seen in the clothing of the figures, postures and activities they perform, colour used for the background painting and the groundwork or support. These give a real feeling of indigenous fabric weaving activities in the natural setting. The diorama is not stylized but a realistic work and so gives immediacy of meaning to the viewer.

The round houses with the thatch roofs and the baobab trees in the background painting are typical of scenery in the Northern, Upper East and Upper West Regions of Ghana as noted in the details of the diorama in Fig. 6. Thus, it suggests a scene in that part of Ghana. Moreover, the atmosphere depicted in the painting suggests a dry season, a period when weaving is often done extensively since farmers who also weave become less occupied in their farms.



Fig 6: The details of the finished Diorama.

The mode of dressing of the modelled figures is typical of the inhabitants of the Northern parts of Ghana. The people of these areas adore and cherish woven strips of cloth which form the basis of the smock, their traditional dress. This may have been the influence of Islam which dominates the area since that religion adores long robes and modesty in dressing. This therefore might have influenced the people to learn how to weave to cover themselves.

The representational symbol displayed on the cabinet is typical of Northern and Upper East regions of Ghana. The indigenous people of Northern and Upper East regions usually modelled in relief symbols of human figures and images of animals which are totems and displayed at a position on the main gate or entrance to their houses and rooms. The purpose of displaying totems is for identification, protection and also to attract the attention of any visitor entering the house or room. The symbol used on the diorama is a lizard. Proverbially the lizard teaches us wisdom to talk less and think more as it constantly nods its head. More so like the lizard which clings so tightly to the wall lest it loses its grip falls and dies, so too must we as human beings cling to those things we hold dear lest we lose them. Therefore the diorama becomes essential to protect and preserve our history and culture at this present day influx of foreign culture.

The worth of the diorama lies in its power to show an aspect of something presently being done but not documented as in the case of the indigenous weaving practiced in the North. It exhibits a way which men have applied their skill and knowledge to execute a product for specific functions in their culture. Similarly, it is also giving an education about how creative the indigenous weavers are and the type of loom used to produce woven fabric in the indigenous settings of the Northern parts of Ghana.

Using the Diorama

Like other instructional media, the use of dio-

rama must be carefully planned. In order to facilitate the use of diorama, it must be placed on a support at the eye level for effective viewing. Burns (1940) recommended that the horizontal line of the aperture remain constant at the average eye level of 150cm from the floor. This assertion has been found to be true through experimentation by other diorama artists and museum exhibitors. As such the diorama produced is supported on a strong, rigid framework built of lumber which is 4cm thick and 8cm wide.

Though diorama exhibits ideas illustrated by objects, it is often accompanied with guided talks. These talks are generally descriptive or historical background information given by Curators in the museum to viewers. The guided talks in effect facilitate the efficiency and effectiveness of using the diorama as an instructional medium. In other words, understanding and appreciating the concepts such as its socio-cultural context cannot be grasped at a glance (although some obvious messages can be detected). This kind of understanding and appreciation is enabled with guided talks. Thus, for viewers to fully acknowledge and appreciate the anthropological significance of the diorama exhibited, merely looking at the objects or figures exhibited in the cabinet is not enough; guided talks must be added.

CONCLUSION

The research was designed to guide all those interested in diorama making to acquire skills on their own. It is in support of this assertion that the research was structured in such a way to equip such people as artists and curators with the basic working techniques to enhance, arouse and sustain interest in the subject.

The research has provided a vital instructional manual which will help other artists to identify the tools and resources that are relevant for making diorama. Considering the success that has been chalked in using unconventional material for modelling to enhance creativity in producing a diorama, the conclusion could be

drawn that, the range of possibilities available to the diorama artist has not been exploited to the fullest and need to be explored further. Hence, future researchers could explore the use of other unconventional materials for modeling. This may create more avenues among sculptors who depend solely on the conventional materials for production and also expand the raw material base for effective teaching and learning of sculpture.

The design of the diorama has also demonstrated a clear evidence of the power of diorama as a three-dimensional art form to tell effectively a vital story or to portray things that do not exist anymore or whose existence are threatened by new developments as is the case of the indigenous loom. Along this analytical plane it could be concluded that diorama could serve as a viable alternative medium for expanding the scope of museum education in the country.

RECOMMENDATIONS

In view of the vast potential in the use of diorama for museum education for the cultural development of the nation, the following suggestions are proposed for consideration.

As a first step, the diorama making techniques should be adopted at the various levels of the Visual Arts programme in schools and colleges, especially for students offering Sculpture and Painting or Picture Making as a way of soliciting interest in the use of the medium. It is therefore suggested that students offering Sculpture should also offer Painting or Picture Making since the two go together in building a diorama.

Secondly, students or artists should be encouraged to undertake projects in diorama to unearth equally important scenes of historical and cultural background to inspire and educate the public. Students could be asked to research into specific topics in groups. Based on their findings, they could be asked to build diorama as a way of documentation.

It is also recommended that Schools, Colleges and Universities should use the diorama technique to set up museums on their campuses to expand classroom teaching and learning.

Finally, the diorama could also be used to teach other related subjects like Geography, Literature, and Science. Situations that could not be brought into the classroom could be conveniently built as diorama for classroom teaching and learning in order to enhance teaching and learning.

REFERENCES

- Acquaye, E. A., Bekoe, S. A., Ahulu, E. O., Amekuedi, G. K., Annan, J. B., Tardie, J. K. and Teye, E. A. (1987). *Basic Technical Skills for Junior Secondary Schools, Book 1* Ghana: Curriculum Research and Development Division, G.E.S.
- Adu-Agyem, J. (1998). *Documentation as a process of Art education in contemporary Ghana*. Unpublished Doctoral dissertation, Department of General Art Studies, KNUST, Kumasi.
- Averasboro Civil Wall Battlefield (2000). *Diorama and Miniatures*, 1-3 [<http://www.averasboro.com/diorama.htm>], (accessed 2002 November 17)
- Best, J. W. (1981). *Research in education*. Englewood, USA: Prentice Hall Inc.
- Brako-Hiapa, G. (2004). *Diorama art for museum education*. Unpublished MA thesis, Department of General Art Studies, KNUST, Kumasi.
- Brett, P. (1990). *Carpentry and joinery for building craft students 1*. Cheltenham: Stanley Thornes Publishers Ltd.
- Burns, N. J. (1940). *Field manual for museum national park service*. Washington

- DC: Unite States Government Printing Office.
- Farrant, J. S. (1982). *Principles and practice of education*. UK: Longman Group Ltd.
- Hass, B. K. (1955).. *Preparation and use of audio visual aids*. New York: Prentice Hall Inc.
- Hirzy, E. (2008). *Museum. Microsoft Student 2008 [DVD]*. Redmond, WA: Microsoft Corporation.
- Iziko Museums of Cape Town (2001). *Debat ing the diorama*. Cape Town, South Africa, 1-2, [<http://www.museums.org.za/sam/resource/ardh/bushate.htm>], (accessed 2003 Jan 7)
- Matini, B., Mwangi, A. and Schlette, R. (1995). (Eds.). *Teach your best: A handbook for university lecturers*. Germany: University of Kassel; Institute for Socio-cultural Studies.
- Ndagi, J. O. (1984). *Essentials of research methodology for Nigerian educators*. Ibadan: University Press States Government Printing Office.
- Talabi, J. K. (2003). *Educational technology: Methods, tools and techniques for effective teaching*. Winneba: University of Education.