

PRODUCTION AND IMPROVISATION OF INSTRUCTIONAL MATERIALS FOR EFFECTIVE TEACHING AND LEARNING IN EARLY CHILDHOOD CARE AND EDUCATION IN NIGERIA

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Abstract

Instructional materials such as charts, pictures, cardboards, posters, drawing, map, graphs and cartoons are commonly found and they can be used in teaching-learning situation. Most of modern materials such as television, projector and multimedia are not always available for one reason or the other in most Early Childhood Care and Education (ECCE) schools. It is in the midst of these inconsistencies and differences that instructional materials have to be sourced, produced or designed or improvised by the schools, teachers and pupils as well as community to cater for their classroom instructions effectively. The findings of this paper reveals, among others, that the public cries of mass failure of pupils in academic works in schools is an evident manifestation of unsuccessful management and non-realization of objectives of teaching and learning which can be attributed to some factors as personality of care-givers, learners' characteristics, non-provision or non-availability of an effective use of instructional materials. Again, the unique role of care-givers in the provision of instructional materials is an integral part of teaching and learning in classroom situation which cannot be over emphasized. This implies that the method of teaching will be grossly incomplete where instructional materials are left out. In order to enhance robust teaching-learning process with consequent excellent results in ECCE, the study recommends, inter alia, that teachers should be resourceful and committed to their duty, which can help them, be creative and innovative. They should learn to have positive attitude to teaching-learning process. They can realize this by adequately preparing their lesson plan, produce or improvise the instructional materials and dispensing their lessons effectively.

Keywords: Improvisation, Instructional Materials, Effective teaching-learning Results, Child Care, Early Childhood Education.

Introduction

The importance of instructional material in any teaching/learning process cannot be over emphasized. This is for the fact that such materials enhance, facilitate and make teaching and learning easy and concrete. In Early 'Childhood education, learning among children is based on the use of concrete materials by the teacher/caregiver. In order to bring in extra materials or items to enhance learning among children the teacher has to be resourceful and be able to improvise some of these learning materials himself. Teachers/ caregivers should be able to use local or cheap materials within his environment to create, develop and produce effective learning materials for children in order to acquire certain basic skills. The issue of instructional materials usage in teaching and learning situation is not a new development but there are

inadequate records in its provision. Most care-givers have been observed to go to classroom with no instructional materials to deliver their lessons on many occasions. Such situation determines a gross characteristic of poor lessons. According to Dodo (2011, stated categorically that, one of the major challenges facing qualitative teaching in our primary and secondary schools has been lack of adequate teaching materials. Dodo, explained that, burden has been too much on government to provide all the needed teaching materials in our everyday growing number of schools.

Experience has shown that most good care-givers appreciate the need of instructional materials in teaching and learning process. However, effective teaching and permanent learning can take place only when pupils actively participate in a variety of learning activities that challenge them to think creatively. This calls for providing and employing instructional materials in classroom in order to teach effectively.

The public cries of mass failure of pupils in academic works in schools is an evident manifestation of unsuccessful management and non-realization of objectives of teaching and learning which can be attributed to some factors as personality of care- givers, learners' characteristics, non-provision or non-availability of an effective use of instructional materials. The unique role of care-givers provision of instructional materials is an integral part of teaching and learning in classroom situation which cannot be over emphasized. This implies that the method of teaching will be grossly incomplete where instructional materials are left out.

Care-givers must cultivate the art and culture of sourcing, producing and improvising from local materials available in their learning environment to make available instructional materials in order to make teaching and learning more real, purposeful and meaningful, in order to achieve quality education.

Instructional materials are important tools for the attainment of desirable objectives of lessons at all levels of education. They appeal to more than a sense (i.e hearing alone) but other senses of sight, touch and sometimes, smell and taste.

Kindler (1973) cited by Fagbemi (1995) stated that people generally remember:

10% of what that read. 20% of what they hear. 30% of what they see. 50% of what they hear and see. 70% of what they say and; 90% of what they see as they do a thing.

Concept of Instructional Materials

Instructional materials or teaching aids are extra items the teacher normally sources for to develop and enrich the content delivery in order to make concepts clearer and easier for the learner to enrich his knowledge and acquisition of skills.

According to NTI Kaduna (2006), instructional materials can be seen as an innovative learning system, which involves the use of organized combination and utilization of people, materials, equipment and procedures to achieve the desired instructional objectives.

Wikipedia (2008) defines instructional materials, as the materials that are used to aid in the transfer of information from a person to another person, e.g, the teacher may use instructional materials to aid the learning of a subject.

Also Olawale (2013) defines instructional materials as materials of visual, audio and audio-visual category that helps to make concepts, abstract ideas concrete in the teaching/learning process. They are also materials which the teachers use in supplementing his teaching. Instructional materials include materials used to facilitate learning for better result. It is the use of the chalk board, charts, models, overhead projector, films and so on in the teaching process. Instructional materials in its simplest term are those materials that help teachers to:

- Teach with ease
- Learners learn without stress
- Appeal to the senses of seeing, touching, smelling, feeling, and hearing.

Classification of Instructional Materials

There are varieties of materials for different level of educational system. The knowledge of a wide variety of instructional materials and the specific function they can perform is a value added advantage for the teacher. Therefore, care givers should endeavour to source provide, improvise and use many instructional materials as possible.

The type of instructional materials depends on the sense they stimulate, their level of technology, projected or non-projected, print or non-print or to consider them generally as audio visual materials.

Tukur (2012) enumerated the types of instructional materials as follows;

Instructional materials could be classified into six forms.

1. Audio (deals with sound only) these include such things as radio, record players, cassettes, grammar phone, CD plates, songs, poems. These aid teaching through the sense of hearing.
2. Visual - (deals with sight.) the category of this consists of maps, film strips, specimen, pictures, charts, blackboard, positions. That category appeals to children through the sense of seeing is believing applies to some extent in this context. Children when presented with concrete items easily grasp the meaning of idea concepts.
3. Audio-visual (combination of audio and visual i.e. sound and vision). These refer to things like television, films DVD and projectors, computers, IPADS etc. The use of these also aids learning greatly.
4. Print (deals with hardcopies). These refer to things like books, newspaper, journals, handout etc. which the use aids effective learning.
5. static/display. These refer to things like chalkboard, flannelgraph, flip charts magnetic board etc.
6. electronic. These refer to things like radio, computer, e-mail, multimedia etc.

However, it should be noted that a high degree of commitment and resourcefulness is required on the part of care-givers to ensure that they are conversant with the different kinds of instructional materials. This will enable the care-givers to impact positively on the quality of their teaching and the implication of the quality of learning.

Functions of instructional materials

- It helps the teachers by providing him with means of widening his learner's experiences
- It helps the teacher to provide to his learners with meaningful sources of information.
- It provides to the teacher the means of exposing the learners to a wide range of learning activities.

It increases the efficiency of learning by providing activities that are interesting.

- It helps children to participate and control simple social interaction.
- It help the children to learn how to recognize, explore and control subject, sight, smell, texture, and taste.
- It helps the children to learn how to get desire re-actions from people and object.

Importance of Instructional Materials

1. Its helps to make learning process more effective and conceptual.
 2. Its helps to grab the attention of students
 3. It builds interest and motivation teaching pupils learning process
 4. It enhance the energy level of teaching and pupils
 5. It is even better for over burden classrooms
 6. It provides learners a realistic approach and experience
 7. Provide visual aspects to a process or technique
 8. Focus attention on highlight of the lesson
 9. Create impact
 10. Facilitates the understanding of abstract concept
 11. Saves time by limiting the use of wordy explanations
 12. Provides a common framework of experiences to a large numbers of learners
 13. Provides opportunity for the learners to manipulate object inthe environment.
- Generally, the use of instructional materials helps to concretize the learning process.

Factors Guiding the Selection of Instructional Materials

The teacher who wants to use instructional materials should consider the following variables to guide him in the selection of the types to be used in the teaching learning exercise.

1. Availability

The teacher should ensure that the instructional materials to be used are easily available for use before the date of use. It means that materials should be in store and the teacher should look at it and test it before the day of the lesson. If the teacher has to prepare it himself, he should do so at least a day before the lesson. No instructional materials that are not available or not easily to prepare should 'be noted by the teacher in his lesson plan

2. Accessibility

It is the duty of the teacher to ensure that the materials to use as instructional materials are not only available but also accessible to him. If they are already made materials they should be within the reach of the teacher on the date and time of use. There should be no excuse that the materials are readily available but locked up in the store because the store-keeper is nowhere to be found or the keys to the store have been misplaced.

3. Affordability

The instructional materials to be used should not be expensive the cost should be such that either the teacher or the school can afford. It is of use to say that, something is available but not affordable due to high cost. There should be a budget for instructional material when this is done the cost should not be outrageous it should be within the budget of the school.

4. Suitability

The teacher using the instructional materials should ensure the appropriateness of the materials for his intended learners. Its materials should be suitable for their age, experience, and intelligence. The legal safety and ethical aspects of the materials to be used should equally be considered. The materials should not portray any antisocial attitude. They should also be free from any distortion or prejudice. If the materials would need electric power then an alternative should be sought to avoid disappointment from electricity.

5. Simplicity

The instructional materials to be used should be simple tolerate or manipulative. The teacher should test the materials and ensure their workability before the actual date of use. There should not be any technical problem and where electricity is to used provision should be made for an alternative power. No teacher should use electric failure as an excuse for non-performance. In a situation where an instrument demands the hand of a technician, he (the technician) should be on hand and the teacher should have an insight into the operation of the instructional materials

6. Qualitativeness

The instructional materials selected for teaching by the teacher should be of good quality. Teacher should avoid the idea of "managing" with poor quality materials because he might not achieve the desired aim.

7. Accuracy

The instructional materials should be the best or nearest to the best it should not be out of date: The instructional materials should reflect current and original thought

Sources of Instructional Materials

Instructional materials can be sourced by the teacher from the following ways.

- i. Home; The teacher/caregiver who is resourceful can identify materials in the home environment that can be used as instructional materials example, old. calendar, pictures, electronic appliances like tape recorders, DVD players.

ii. School: The school administration can also include the, provision of instructional materials to be used by teachers/caregivers. A resource room is usually provided where materials are kept e.g. maps, charts, physical & health materials, jigsaw puzzles, models, flash-cards work books, resource persons, building blocks, etc.

iii. Community: Within each community there are materials that can be sourced by the teacher/ caregiver and used in teaching children, examples include, fruits, flowers, sticks, traditional instrument, storytelling by elders.

iv. Teacher: The teacher himself is an instructor however, he can use his creative ability to carvings, singing songs, reciting poems etc. These are not the only sources, donations can come from other agencies or person that have interest in education.

v. Donation: from concerned bodies like: PTA (parent Teachers Association), state libraries British council and other non-governmental organization can provide some instructional materials for care-givers and pupils.

Improvisation of Instructional Materials

Care-givers should note that effective teaching and permanent learning take place when pupils actively participate in a variety of learning activities. These activities are intended to challenge the pupils to think creatively about their subject matter. Therefore, it is necessary to fill pupils with many learning materials as possible. Where these are not available or costly to afford, the need for the improvisation culture is required by the care-giver. Experience has shown most good care-giver appreciates the need for instructional materials in teaching and learning process.

Eniayeju (1983), defined improvisation as the act of using alternative materials and resources to facilitate instruction whenever there is lack or shortage of some specific first teaching aids. In the same vein NTI manual (2007), referred improvisation as the making of substitute from local materials found at home or school premises when the local or original equipment is not available. That, the improvised materials should be able to convey special instructional messages as the original materials.

Dodo (2012) citing Whittee (1975) explained that, improvisation is a teacher-centered activity. The only important conditions to be met, is that any item produced should work as intended. The culture of local production is an attempt to meet the demand of the schools, so that the school material from local materials, sometimes found within the school premises (dodo,2012). With appropriate knowledge and skills in the art of improvisation, teachers should be aware that there materials that can assist them and their pupils there they (the teachers) need training and retraining exercise on the fact that many opportunities surrounds them which can be used in achieving effective teaching and learning in our schools.

Preparation of Instructional Materials

In preparing instructional materials there are some specific steps to be followed.

1. Prepare a working outline (a syllabus)

It is based on the instructional strategy

It is based on measurable, sequenced performance objectives

It should be based on the instructional events ..here's "cheat sheet" for the standard instructional event culminating from your clever instructional strategy, using the Old Ways of Gagne & Briggs (pre constructivist design philosophy):

- Gain the learner's attention
- Inform the learner of the performance objective
- Stimulate recall of prerequisite learning
- Present stimulus material (is this behaviorist enough for y'all ;-)
- Provide learning guidance (in any modality) so learners begin target achievements.
- Elicit desired performance
- Provide positive feedback to the learners so they know how well they are obtaining the performance objectives
- Assess learner achievement (and revisit the instructional design)
- Enhance retention and transfer so that learners will remember what they learned. (Gagne, Briggs & Wager, 1992).

2. Conduct Research

3. Examining Existing Instructional Materials

4. Arranging or Modifying Existing Materials

5. Selecting or Preparing Learners Activities

Care and Preservation of Instructional Materials

Preservation is the prevention of deterioration, damage or loss of material in the collection and may include stabilization, repair, and conservation treatment.

The managed, achieves-wide program under which assessment, planning and acting on preservation manners will take place. It entails, but is not limited to evaluating the present state of preservation in the archives, establishing and implementing policies and procedures to correct or mitigate preservation problems in the everyday archival functions of the archives. All archival material will be evaluated and. housed in appropriate protective archival enclosures necessary re-housing will be undertaken as soon as possible upon receipt.

1 Get Organized. Place pictures or written labels on low open shelves so that children know exactly where things belong. Store loose manipulative (wooden beads, laces, play dough cutters) in see-through plastic bins.

2 Establish Rules. For instance: Four children at a table to prevent overcrowding; put the puzzles in the rack when finished; keep sand in the sandbox.

3 Use Covers Containers. Use clean, flat pizza boxes to store felt board pieces and art paper. Try tall, clear, plastic water bottles to hold paint and long brushes at the easel. Hang stretchy woven net bags by the door to hold playground balls.

4 Rotate Materials. Keep shelves uncluttered by putting out a few selected materials at a time; regularly alternate puzzles, games, and other manipulative.

5 Recycle It. Discuss with children how to reuse scraps and damaged materials. For example, use construction paper snippets for collages and those loose puzzle pieces as templates that children can trace with markers.

6 Make It Fun. Add a dose of fun and humor as children care for classroom materials by singing a song about hanging up dramatic-play clothes or inventing simple chants and rhymes that children can use while cleaning up.

7 Talk About It. Verbalize your actions as you care for materials so children can understand your thinking behind them. For example, say, "I'm putting the lids on these paint cups so the paint won't spill on the floor."

8 Share Useful Hints. Discuss cleanup tips such as washing paintbrushes in cool water so as not to loosen the glue holding the bristles to the handle.

9 Have Safety Checks. Take children on a "safety search" around the classroom. Invite them to help you identify objects in need of repair, including wooden blocks or trucks with splinters, cracks, or chips.

10 Plan a Cleanup Party. Give outdoor equipment some loving care-wash the trikes, inflate tired-looking balls, and add new sand to the sandbox.

Basic Principles Guiding the Selecting of Instructional materials for Teaching Practicum

1. The Basic Characteristics of the Learner: For any instructional materials to be selected for use, the teacher must first of all consider the basic. Characteristics of the learner such characteristics as age, sex, interest and the level of the learner must be considered to ensure an appropriate of the instructional materials to the learner. This is so, because any instructional material that does not take into cognizance the learners characteristics will not make learning any effective.

2. Behavioral Instructional Objectives: Instructional objectives are the next step that can be taken into cognizance when selecting and utilizing instructional materials. Any instructional material that can be used for instruction must be guided by the expected instructional outcome or behavioral objectives; (an expertise) that is the instructional material must ensure the achievement of the stated behavioral objectives. Therefore, by that principle, any instructional objective should not be brought to the class teaching or classroom activities.

3. Class Size: Class size is another principle that is relevant for the selection and utilization of instructional materials. In this process, the practicum guardian or coordinator must consider with him, the class size for the appropriate use of instructional materials. For example, if it is a large class, the instructional materials should be sizable enough to see that each learner can be able to see or hear it or see the action of instruction which was intended to convey to the student it is the class size that can determine where the instructional material could be placed or for use.

4. Time: Time is another principle that can be necessary for the selection of instructional materials in teaching learning practicum. As noted each school has its own' timetable so, it is necessary that instructional materials should be selected based on the time or duration allotted on the school time table. This should not be extended in order to avoid classroom distraction.

5. Case of Use: This is another principle relevant to the selection and utilization of instructional materials in teaching/learning practicum. For any instructional material to be effective to use or operate, it should be made easier. It should be operationally sound. These will also lesser time consumption and make learning easier.

6. Durability: This can also be considered in the selection and utilization of instructional materials in teaching learning practicum. Any instructional material to be use in field work/class must be assessing it to be in good shape, in order to avoid breaking or damage. This is because the age of any instructional materials will cause classroom distraction. Also an instructional material should be durable so that it can be stored for future use.

7. Accuracy of the materials to be used: The accuracy the materials are very important for selecting and utilizing the instructional Ango, (1991), stressed that the material should be accurate during selection. Facts, statistics, charts, graphs and diagrams must be reliable and similarly, source should be authoritative. This means that the instructional materials should avoid misleading comparison and relationship with questionable analogies. In this the instructional materials are expected to move with time. It is therefore, expected that any instructional material for use should not be outdated. For this reason, it is advisable to make use of current and relevant instructional materials. This is to avoid giving the children outdated information or knowledge.

8. The Mentor Teacher's Capacity: The teacher's capacity is the greatest principle in the selection and, use of instructional materials in practicum teaching. This refers to the mentor; teacher skills and knowledge in the use of instructional materials in practicum teaching. This refers to the mentor teacher skills and knowledge in the use of instructional materials he/she has selected for instruction. The instructor must have the necessary knowledge and the skills to effectively manipulate the materials to achieve the desired instructional objectives so stated. And in the absence of the skills and knowledge, it is obviously advisable not to attempt to bring the material to the practicum before the learners. This is to avoid losing his credibility before his children in the event of being unable to manipulate the instructional materials before his children. The instructor, must also take into cognizance, where and when to make use of the institutional materials. Objectives of Instructional Materials for Teaching Practicum As earlier stated, teaching materials or aids are devices, piece of equipment, graphic representation, sound reproduction or illustrations that help children to learn. It is also, means instructional materials, media that promote aid and facilitate teaching and learning. Instructional materials are complex approach to teaching-learning process. It is defined as a complex, integrated process involving people, procedure, idea, device and organization for analyzing problems, devising, implementing, evaluating and managing solutions to those problems involved in all aspects of learning.

Any subject can be taught more effectively through the use of instructional media or materials, but there can be great waste as a result of improper use of these good materials.

Obviously, the amount we learn through the eyes depends on the nature of the content being learned and the conditions under which we are learning. There are times when one picture is worth a thousand words, but not always one word may be as good as a thousand pictures at times (Ada et al 2004) the word "ye" to a proposal of marriage needs a picture to be understood.

The good instructor or practicum coordinator/teacher uses all the teaching-learning materials with him in an expert fashion when they are needed.

Nnolim (1988), stated that when properly used, instructional media or materials and devices can accomplish several objectives: rich as:

- a. Supplying a concrete basis or conceptual thinking and reduce meaningless word responses of children:
- b. Making learning more permanent and offer reality of experiences, which stimulate student activity on the part of the children.
- c. Developing a continuity of thought: This is especially true of motion pictures and equally contributes to the growth of meaning and have vocabulary development.
- d. Providing experiences not easily obtained through materials and contribute to the efficiency, depth and variety of learning.
- e. The use of instructional materials increases learning effectiveness and enhances retention and recall. The learners retain greater percentages of what is seen, heard and manipulated.
- f. Instructional Materials in the teaching and learning practicum classes have the potency for motivating and focusing learners attention on the lesson being presented.

The Major Types of Instructional Materials in Teaching Practicum

It may also interest you to know that this teaching/learning materials or aid otherwise called instructional media can be categorized into two major groups, namely:

- a. The print materials
 - b. Non-prints materials. The Print Materials: These include textbooks, magazines, manuals, newspapers, workbooks, reference books, handout dictionaries, encyclopedia etc. The prints constitute a greater percentage and most widely utilized instructional materials or media. The non-print Materials: These include all the instructional medias that are non-books, they may be classified into visual, audio, visual, phenomenal and manipulative (Abia, 1984).
1. **Visuals:** Instructional materials in this group facilitate learning by appealing to the sense of vision. They can be grouped into: a. Board such as chalkboard, bulletin board, notice board, magnetic board, hook/loop board etc.
 - b. Dimensional: Such as models, specimens, real thing (relics) mock up etc

c. Still images: Apart from those photographs, these are the most commonly used projected resources, they include opaque, overhead, slide, filmstrip and soundless motionless projections. Alcon et al (1970) assure that 30% of learning through the eyes can be recalled.

2. **Audio:** instructional materials in this group appeal to the sense of hearing e.g. radio, language laboratory, telephone, public address systems, audio-tape recorder, cassette, C.D (Compact Disk), home theatre etc. According to Alcon et al (1970), 20% of what is heard can be recalled.

3. **Audio-Visuals:** These are instructional materials that stimulate both auditory and the visual senses simultaneously, audio visuals are displayed by both visual projections and sound reproduction at the same time. These include, videotape, television computer and audio slide etc. learners can recall 50% what they learn by seeing and hearing at the same time.

4. **Phenomenal:** The instructional materials in this process are restituted by natural and semi-natural settings such as events, features, settings, festivals and other community resources that are directly apprehended by learners.

5. **Manipulative:** These instructional materials that which the practicum learner actually handles skillfully, deals and with the manager expertly to bring about the desired behavioral changes are categorized under this group.

The manipulative media cuts across all aspects of skill development and mastery learning. These include; instructional games, simulations and interactive case studies. Other instructional materials that a teacher can use to demonstrate his teaching during practicum include:

Community Resources: They are those resources that can be obtained within a community or society which can be utilized for effective teaching and learning. Community resources can simply be defined as those facilities found within the community outside the school which are used to promote teaching and learning. Four main types of community resources that can be effectively utilized for teaching practicum include the following as pointed below

1. Natural resources
2. Human resources
3. Material resources
4. Institutional resources

A. Natural Resources: These refer to those types of resources that are manmade but are found within the community and can be effectively utilized for teaching practicum. They include hills, mountains, forests, water resources, live river, streams, water falls, ocean and so on. Other natural resources include vegetable, valley, desert etc.

B. Material Resources: They are all the material products of technology of society that can be used to facilitate teaching and learning in practicum. These materials include, buildings, bridges, vehicles, ships, food crops, trains, roads, airplanes, national symbols such as coat of arms, flags and so on.

C. Institutional resources: They include resources from political, economics legal, religious and social instructions. They include political parties, state and national assemblies, palaces, court such as High court of justice, customary court of appeal, Tribunal Supreme Court. Others include churches, mosques, schools, colleges, universities, polytechnic, industries, prisons, markets, hospitals, banks, clinics, insurance, hotels, motels etc.

D. Human Resources: They refer to the person or individual who may be invited by the practicum supervisor to deliver a lecture on any important topic relevant to the practicum. Mostly, the advantages of these community resources as institutional materials in teaching/learning practicum include the following listed below:

- a. They provide a variety of information materials for effective teaching and learning practicum
- b. Some community resources are source of vital information to practicum teachers or coordinator and the pupils e.g. zoo, library, courts, technical centres etc.
- c. Some present important physical features of the environment which will help to promote and provoke the desire for field trips.

Conclusion

Those days are past, when chalk and talk were regarded as sufficient. In order to enrich the teaching learning environment, a teacher must be exposed to the use of instructional materials in his teaching. These teaching materials may not be readily available or adequate for instructional purpose. This situation demands teachers resourcefulness and creativity in the art and processes of producing or improvising with local and discarded materials around in their immediate environment for the actual materials they need. However, the quest for skills to produce or improvise learning materials is needed in their respective subject areas. Teachers should realize that there are opportunities everywhere to be creative, if they have the initiative and are commitment to their job.

Recommendations

In the light of ensuring quality teaching and learning in our schools, using instructional materials to achieve its objectives, the followings were recommended as;

I. Teachers should be resourceful and committed to their duty, which can help them, be creative and innovative. They should learn to have positive attitude to teaching-learning process. They can realize this by adequately preparing their lesson plan, produce or improvise the instructional materials and dispensing their lessons effectively.

II. Government should employ more trained and qualified teachers, making their remuneration more lucrative compared to their colleagues in other sectors.

III. School head and administrators should inspect regularly teacher lesson notes and prepared instructional materials, say weekly, to assess the adequacy and consistency of how instructional materials are being made available for lessons.

IV. Ministries of Education and schools board should make provision for low-cost instructional materials like charts, maps, globe, markers etc. and make it compulsory for

schools to have a Need for Production and Improvisation Skills for Providing Instructional Materials to Ensure Quality

VI. Teaching and Learning in Schools resource centre where teachers can always make use in the preparation of the various lesson instructional materials.

Teacher training institutions curriculum, should be enriched with programs that will train students-teachers on the techniques of sourcing, designing, producing and improvising instructional materials for school subjects. The Ministries of Education should periodically, conduct or organize seminars. Conference, work shops or induction courses to up-date teachers' knowledge and skills on the profession.

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