



## An Assessment of the Availability and Usage of Instructional Materials in Teaching at the Basic Schools in the Tamale Metropolis

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### **Abstract**

The study was designed to assess the availability and use of teaching learning materials in Basic schools in the Tamale metropolis. It examined the nature of the materials available, mode of acquisition, and the frequency at which Basic school teachers use the available materials in teaching and learning to achieve instructional objectives in the classrooms. The descriptive case study design was used for the study. The target population for the study was all the basic school teachers in the Tamale metropolis of the Northern region-Ghana. A sample of One Hundred and eighty-five (185) teachers was randomly selected from twenty Junior High Schools in the metropolis. The main instrument for the study was questionnaire used to collect both qualitative and quantitative data for analysis. Based on the analysis made, it was revealed that while some basic school in the Tamale metropolis lacked teaching and learning materials, other schools had variety of teaching and learning materials. In basic schools where the teaching learning were available, the materials were found in the classrooms for use but were kept either in the headmaster's office, the storeroom, or the ICT centre. It can be inferred that teachers could only use these materials for teaching if they made formal requests to the appropriate authorities. Based on the findings, it is recommended that the Ghana education service together with other partners in education procure adequate teaching and learning materials for all basic schools particularly those that don't have any. Saves or lockers should also be provided in each classroom to safely store these teaching and learning materials to easy access to them whenever required without having to apply formally for them anytime they need to use them to teach. School authorities should consciously set aside part of the capitation grant for the purchase of these materials to bridge the resource gap in Basic schools within the Tamale metropolis.

**Keywords:** *Instructional Materials- Teaching and Learning Aids; Availability-Readily Available for Use During Teaching and Learning*

## ***Introduction***

Rapid advances in science and technology continue to transform teaching, learning and classroom interactions (Baxen & Green, 1998). This suggests that the technological non-compliant teachers are likely to face numerous challenges in the use of modern technology for effective teaching and learning. This broad change impacts not only on the way teachers' perceive their roles within the new system but also on the classroom practices and on the broader school community at large. Teachers' dominant presence that hitherto has characterised the traditional classrooms are fast giving way to contemporary conception of the teacher's role as facilitators of the learning process rather than imparters of knowledge. There is therefore, a clarion call upon teachers to evaluate and select from curriculum materials in terms of their appropriateness for particular outcomes and in terms of the needs of particular learners or groups of learners (Baxen & Green, 1998).

The delivery of good instruction is dependent on the ability of the instructor or the teacher to effectively integrate the use of instructional materials and pedagogical skills to realise the objectives of a given lesson. Instruction is therefore, a combination of decisions and activities that are carried out in a fashion in order to achieve the desired learning outcomes.

Instructional materials are all things that are used to support, facilitate, influence or encourage acquisition of knowledge, competency and skills (Abiodun, Oyebanji & Adu, 2007). In the absence of the teaching and learning materials teachers are therefore encouraged to improvise because it enhances learners' full participation in the lesson, gives room for inquiry, problem-solving, discussion and clarification of issues and ideas among students and the teacher (Abdu & Raheem, 2014). Riveire (2006) noted that improvisation is a valuable teaching tool. Afolabi and Adeleke (2010) identified non-availability, inadequacy and non-utilization of learning materials as a result of teachers' poor knowledge as factors responsible for the use of lecture method. They recommended that both students, teachers, parents, Parents/Teacher Association, government and philanthropists' should be involved in improvising instructional materials for the teaching and learning in schools. Instructional materials include the decision-making activities and selection of teaching and learning processes. On the other hand, Visual Teaching Aids or 'Teaching Apparatus also involve all the traditional means of delivering instruction such as materials that teachers use to teach learners or students to learn. Some of the instructional materials used in educational institutions include visual materials, Audio-Visual Aids and Community Resources.

Notwithstanding the relevance of teaching and learning resources in aiding the achievement of learning outcomes, some teachers and schools are handicapped in teaching and learning resources as well as their usage to achieve learning outcomes. The issues of inadequacy of teaching and learning resources in school is a global phenomenon. studies in Ghana in particular as well as in other African countries such as Nigeria for instance have revealed that there were inadequate resources for teaching critical areas such as Science subjects in schools, even where there were, the available ones are not usually in good conditions (Republic of Ghana, 2002; Obioha, 2006; Ogunleye, 2002). This suggests that there is the need for improvisation. Improvisation demands adventure, creativity, curiosity and perseverance on the part of the teacher, and such skills are only realizable through well-planned training programme on improvisation (Adebimpe, 1997; Daramola, 2008).

The use of instructional materials as catalyst for learning and facilitating understanding of concepts among pupils is an important goal of teaching. In the school setting, learners need to acquire knowledge about how to think and learn about the various subject areas taught. The awareness of how they can use teaching and learning materials to enhance their own learning is essential. Demonstration is one valuable conduit to the use of materials but perhaps a more important one is the availability of these resources. Learners need access to texts, science equipment and other learning materials in order to enhance their understanding of concepts.

Unfortunately, many learning institutions in Africa lack adequate resources for teaching and learning. Literature on the availability of teaching and learning resources in schools suggests that teaching and learning materials in school within African sub-region are woefully inadequate. Non availability and inadequacy of instructional materials are major causes of ineffectiveness of the school system and poor performance of students in schools (Abdu-Raheem, 2011). It is therefore, very important to use instructional materials for teaching in order to make students acquire more knowledge, and to promote academic standards (Eniyewu, 2005). The use of improvised instructional materials makes students to achieve better in their studies (Ayoola, 2015; Adelusi, 2006; Adebule, 2009; Adeosun, 2001; Fakomogbon, 2012). Availability of these instructional materials in schools is said to be inadequate, and sometimes, teachers lack the know-how or skills to use them meaningfully to achieve relevant learning outcomes. Many learners, especially those not accustomed to the availability of learning materials as resources, require more than just access. They need explicit instruction on how to make optimal use of these resources in teaching in the classrooms (Isola et al., 2011), for these resources to be useful to them.

### ***Statement of the Problem***

Teaching and learning materials are expected to be used to make teaching and learning more meaningful. Effective utilisation of instructional materials facilitates easy understanding of abstract concepts and promotes effective communication and interaction between the teachers and the students. This is largely dependent on the ingenuity of the teacher. Teaching and learning materials provide remedy to the limitations of time and space in teaching and learning process and makes pupils completely involved in the teaching-learning situation. In spite of the numerous benefits of teaching and learning materials, some school authorities and teachers fail to use these important resources during teaching and learning. Although, most of the head teachers and their staff complain about non-availability of appropriate teaching and learning materials for use at the basic schools, and the Colleges of Education in Ghana, where they exist, teachers still find it difficult using them for teaching and learning. This situation was worrying to stakeholders, and posed threats to effective teaching and learning at the Basic schools in Tamale Metropolis.

Many theories and principles of teaching and learning encourage among others that teaching should be done from use of concrete objects to abstract concepts; from known concepts to unknown concepts, and that meaningful learning is achieved when learners have the opportunity to actively participate in activities in course teaching and learning. Learners and teachers can effectively interact in classrooms when instructional materials are available and used by teachers in our basic schools in the Tamale metropolis.

Despite various successful attempts made by numerous researchers on the production and use of instructional materials, the truth still remains that many teachers and teacher-trainees in Ghana still complain about lack of teaching-learning materials in the Basic schools. The complaints these teachers often make is that, they do not have money to buy common visual art materials, for example manila cards and printed visual materials such as photos, pictures, drawings, charts and diagrams to boost the teaching of Visual Arts related subjects. In spite of these complains, some schools have relevant materials that are developmentally appropriate and directly related to the lesson outcome.

However, a close observation of classroom practices has revealed that teachers who rely solely on the oral presentations find that their pupils are unable to relate effectively the new learning to any well-founded basic experience. There is therefore the need to ensure that these instructional materials are not only available in our basic schools, but also are being used in the teaching and learning process. This study was therefore carried out to investigate the availability and regular use of these teaching and learning in the basic schools in the Tamale Metropolis.

### ***Objectives of the Study***

The purpose of the study was to assess the availability and use of teaching learning materials in Basic schools in the Tamale metropolis. It was further intended to ascertain the adequacy and usage of the teaching and learning materials in Basic schools in Tamale Metropolis.

Specific Objectives set for the study included to:

1. examine the nature and kinds of teaching and learning materials available in Basic schools within the Tamale metropolis
2. assess how the teaching and learning materials are acquired by the schools
3. ascertain the frequency of use of instructional materials in teaching at the Basic schools
4. assess the adequacy and availability of teaching and learning materials

### ***Research Questions***

1. What kinds of teaching and learning materials are available in Basic schools within the Tamale metropolis?
2. How are teaching and learning materials acquired by the basic schools in Tamale Metropolis?
3. How are the teaching and learning materials used during instruction in the Basic schools in Tamale Metropolis?
4. How adequate are the instructional materials for teaching in the Basic schools in the Tamale Metropolis?

### ***Literature Review***

#### **Instructional Materials in Academic Achievement**

Ajayi and Ayodele (2001), recounted and stressed the importance of the availability of instructional materials to achieving effectiveness in educational delivery and supervision in the school system. Ogbondah (2008), exposed the gross inadequacy and underutilization of instructional materials necessary to compensate for the inadequacies of sense organs in the teaching and learning process. He noted that school teachers should try their possible best in the provision of locally made materials as substitutions for the standard ones to promote their lessons. Enaigbe (2009), noted that basic materials such as textbooks, chalkboard and essential equipment like computer, projector, television and video are not readily available in many schools.

Olumorin et al (2010), observed that instructional materials help teachers to teach conveniently and that learners learn easily without any problems. They asserted that instructional materials have direct impact on the sense organs. Kochhar (2012) supported that instructional materials are very significant learning and teaching tools. He suggested the need for teachers to find necessary materials for instruction to supplement what textbooks provide in order to broaden concepts and arouse students' interests in the subjects. According to Abolade (2009), the advantages of instructional materials are that they are cheaper to produce, useful in teaching large numbers of students at a time, encourage learners to pay proper attention and enhance their interest.

Akinleye (2010), however, attested that effective teaching and learning requires a teacher to teach the students with instructional materials and use practical activities to make learning more vivid, logical, realistic and pragmatic. Esu, Enuokoha and Umoren (2004) agreed and further emphasized that, instructional materials are indispensable to the effective teaching and learning activities. Ekpo (2004),

also supported the claims that teaching aids are always useful in supporting the sense organs. The presence of these instructional give learners the opportunities to manipulate, move, touch and feel these materials and these reinforce what they learn.

Several studies on instructional materials and academic achievement have been reported in literature. Isola (2010), for instance conducted research on the effects of instructional resources on students' performance in West Africa School Certificate Examinations (WASCE). He correlated material resources with academic achievements of students in ten subjects, and found a positive relationship. Data were also collected from the subject teachers in relation to the resources employed in the teaching. The achievements of students in WASCE for the past five years were related to the resources available for teaching each of the subjects. He concluded that material resources have a significant effect on student's achievement in each of the subjects.

Ogbaji (2017), in a study of teachers' use of teaching learning materials in secondary schools, found that teachers generally understand that instructional materials make lessons effect. Oladejo et al. (2011), also found that, improvised instructional materials promote and enhance effective teaching-learning, in many Physical subjects. Findings showed a significant relationship between instructional material resources and the students' academic performance in these subjects. In a similar study, Popoola (2011) investigated the effect of instructional resources on the academic achievements of students in five secondary schools. Data collected on West Africa Senior Certificate Examination results for five years and compared achievements of students in schools with adequate material resources and that of students in schools with inadequate material resources. He found a significant difference in the achievements of the two sets of students. The schools with adequate instructional materials performed better than those with inadequate instructional materials.

Despite the fact that instructional materials are essential tools that can make learning practical and knowledge acquisition easier, they may not be readily available in many basic and secondary schools leading to low level of performance among learners (Abdu-Raheem, 2014).

### **Improvisation**

Ogbondah (2008) advocated for teachers' resourcefulness encouraging them to search for necessary instructional materials through local means to supplement or replace the standard ones. Oso (2011), also agreed that the best way for teachers to make use of their manipulative skills is to improvise for use in their lessons so as to achieve their instructional objectives.

Jekayinfa (2012), identified the relevance of improvisation of instructional materials among others as making learning concrete and real, substitute something for another, allow the students to participate in the production of materials, economical, and more teacher-student resource oriented. Abdu-Raheem (2014) submitted that improvisation of locally made teaching aids could assist to improve quality of graduates churned out from schools and standard of education generally. Abdu-Raheem and Oluwagbohunmi (2015), also corroborated the idea that resourceful and skilful teachers should improvise necessary instructional materials to promote academic standard in schools.

### **Methodology**

The cross-sectional descriptive survey was used for the study. The design was adopted in order to collect data on relevant variables at the time of the study from a variety of people, subjects, or phenomena (Abramson, & Abramson, 2000). The cross-sectional design allows for sampling of the population and where the sample is representative generalization can be made based on the findings.

The target population for the study was all basic school teachers in the Tamale metropolis. Simple random sampling technique was used to select the sample for the study. Since the total number of public basic schools was known, the total number of teachers in these schools was also known. Some basic schools were purposely selected to avoid choosing already endowed basic schools who would have adequate instructional materials (McMillan & Schumacher, 2006). In all, 185 teachers were randomly sampled from the basic schools within the Tamale Metropolis. The main instrument used for data collection was the questionnaire. The instrument was constructed based on the research objectives set for the study. The questionnaire was divided into six sections. The first section requested information on the demographic characteristics of respondents as summarised in Table 1:

Table 1: Gender Distribution of the Participants

Gender	Frequency	Percentage
Male	123	73.2
Female	45	26.8
Total	168	100.0

Field Survey, 2016

Table 1 shows that there were more males than females who constituted only 27% of the participants whereas the males were 73.2 % of the participants.

Table 2: Age Distribution of the Participants

Age	Frequency	Percentage
25-30	44	25.1
31-35	54	30.9
36-40	36	20.6
41-45	28	16.0
Above 46	13	7.4
Total	175	100.0

Field Survey, 2016

Table 2 illustrated data on the distribution of participants in the study. From the table, almost 56% of the participants in the study were in the age bracket of 25 to 35 years. However, 20.6% of participants were within ages 36-40 years, while 16% of the participants were in the age range of 41-45 years. Finally the least numbers of respondents 13(7.5%) were 45 years and above. The indication is that majority of respondents in the study area were youthful.

Table 3: Academic Qualifications of the Participants

Academic Qualification	Frequency	Percentage
MSLC	1	0.6
GCE O Level/SSSCE	2	1.1
GCE A Level	2	1.1
Diploma	56	31.5
1st Degree	113	63.5
2 <sup>nd</sup> Degree	4	2.2
Total	178	100.0

Field Survey, 2016

Table 3 displays the qualifications of teachers who participated in the study. Out of the total number of 178 responses received, 1 (.6%) was Middle School Leaving Certificate holder, 2(1.1%) were GCE/SSCE,/GCE/A level holders, 56 (31.5%) of respondents were Diploma holders, first degree holders represented about 113(63.5%), while second degree holders were 4 (2.2%). From the above, it is observed that 1<sup>st</sup> degree holders formed the majority of respondents of respondents.

### **Research Question1: What Kinds of Teaching and Learning Materials Are Available in Basic Schools Within the Tamale Metropolis?**

This research question sought to examine the nature and kinds of teaching and learning materials available and in use in Basic schools within the Tamale metropolis. Responses obtained from the questionnaire were grouped into subject specific materials.

Analysis of the responses on the kinds of teaching and learning material indicated that, participants had varied notions about the kinds of teaching and learning materials available in their schools. While some participants in some schools claimed that there were no instructional materials available for teaching and learning in the schools, especially for the subjects they were teaching apart from the teaching syllabus and text books, others contended that, there are relevant teaching and learning materials in their schools. For those participants who said their schools had materials, they identified the materials available for teaching and learning to include: markers, abacus, word cards, multiphase blocks, Cuisenaire rods, empty tins/bottles, bottle caps. These materials typically were relevant for teaching and learning of Mathematics. In some schools, participants listed the available teaching and learning materials in the school as Mathematical graphs, boards and charts. Perhaps in these schools, teaching and learning materials for Mathematics seemed to be given prominence over other subjects.

Participants further listed the following items as the available teaching and learning materials in their schools: pictures, textbooks, syllabus, graph board and drawing instruments. Further analysis of the teaching and learning materials available in schools revealed that many schools had pairs of compasses, rules, globe, and flip cards/charts. However, there were some few private schools with technological materials such as TV set, wall clocks, cylinders, beakers, bottles, dry cells, laptop, keyboard, DVLA programmes, projectors, DVD cassettes, DVD Deck LED flat screen among others. In some instances, these set of materials could be found in some public schools as donations from non-governmental organisations or from philanthropists.

Synthesis of the available teaching and learning materials in schools suggests that the teaching and learning materials in schools can be categorised into science, maths and technical skills related teaching and learning materials. These materials included: carpentry saw, hammer, set squares, pairs of compasses/dividers, rule, sewing machine, cardboards, illustrations flipchart, Projector, Textbook, TV and Video deck, improvised materials and Flip chart, place value charts, multiphase blocks, abacuses, cylinders, beakers, funnel, markers, globe, Human and animal skeletons, and computers. Other teaching and learning materials found in the schools could be used in teaching social studies, language, literacy and culture. Some of these materials included: the globe, flip charts, DVLA programmes, DVD cassettes, DVD Deck LED flat screen CTV, construction materials, pictures and charts, TV and DVD, Textbooks, graph board, computers, projector, visual TLMs and regalia, plastic rule, bottles and plastic triangles etc.

In most schools located in the rural and peri-urban communities, apart from the teaching syllabus, pupils' text books and chalk, there were no other teaching and learning materials in the schools. However, few of those schools had resources such as protractors, pairs of compasses, bottle tops, sticks, flashcards and wall chart, cardboard drawing, pictures and other improvised learning materials.

Again, some well-endowed schools possessed a wide range of teaching and learning materials for different subject areas to include: cardboard, charts, drawing instruments, flip charts, computers, maps, globes, sewing machines, desktop computers, syllabus, textbook, Chalk, mathematical instruments, rulers, teachers' handbook, abacus, charts models, science equipment, visual TLMs and regalia, first aid box, projector, TV, DVD, concrete material, construction materials, pictures and charts, laptop, flat screen CTV, and improvise materials. They also reported subject specific and topic specific teaching and learning resources which included abacus for teaching various concepts in mathematics, bottles tops were used for teaching counting etc. For subjects such as home economics, there were teaching and learning

materials such as burners, stove, aluminium source pans, fractional board. For subjects such as social studies and geography there were teaching and learning resources such as sketches of Ghana map, globe, flash cards, green books, cardboard with pictures on them, pairs of compasses, textbooks, atlas and the constitution of Ghana. Other teaching and learning materials for technical skills included graph board, rules, tee square, set square protractor, and divider, carpentry saw, hammer, set squares, magnetic iron fillings magnets, among others.

Science specific materials included human and animal skeletons, TV Set, computers and pupil textbook, improvised material, flips charts, pictures, textbooks, improvised toys, metals and non-metals, drum pictures, abacus and ICT tools, measuring cylinders, thermometers, beakers, funnel and other laboratory equipment.

From the summary of responses so far, one could conclude that although some basic school in the Tamale metropolis, complained of lacking teaching and learning materials, most of the schools reported having variety of teaching and learning materials that included technological oriented materials such as TV set, wall clocks, cylinders, beakers, bottles, dry cells, laptop, keyboard, DVLA programmes, projectors, DVD cassettes, DVD Deck LED flat screen, pairs of compasses, rules, globes, flip cards/charts, pictures, textbooks, syllabus, graph board and drawing instruments. Others included Mathematics graphs, boards and charts, markers, abacus, word cards, multiphase blocks, Cuisenaire rods, empty tins/bottles, bottle caps among many others.

### Research Question 2: How Are Teaching and Learning Materials Acquired and Stored for by the Basic Schools in Tamale Metropolis?

This research question sought to review the various sources from which the different kinds of teaching and learning materials available for use in Basic Schools were acquire within the Tamale metropolis. Responses extracted from the questionnaire pointed to multiple sources from which these instructional materials were stored and acquired for teaching in the classrooms of basic schools. Table 4 identified sources of storage and acquisition of teaching materials at the basic schools.

Table 4: Place of Storage and Retrieval of the TLMs

Storage of TLM and Retrieval	Frequency	Percentage
Head Teacher's/Master's Office	91	54.5
Staff Common Room	18	10.8
School's Stores	57	34.1
No response	1	.6
Total	167	100.0

Field Survey, 2016

In Table 4, there seemed no consensus had been reached on how teaching and learning materials were stored and retrieved for use in schools. While 54.5% of respondents held the view that teaching and learning materials were stored and retrieved from the Head Master's office, 34.1% argued that teaching and learning materials are stored and retrieved from the school stores. Others constituting 10.8% contended that teaching and learning materials were stored and retrieved from staff common rooms. These responses seemed to suggest that, depending on the school and the availability of space in the schools, teaching and learning materials could be kept at any place within the school, provided the place is safe.

### Mode of Acquisition of Teaching and Learning Materials for Use in Your Classroom

Analysis of the responses participants provided suggests that there is no agreement as to where and how the teaching and learning materials are kept. While others are of the view that the available



teaching and learning materials were kept in classrooms, others disagreed that all teaching and learning materials were kept in the classrooms. They held that, the only teaching and learning materials kept classrooms were textbooks. These books are often given to pupils to send home and bring to school. These materials are available to both students and the teachers anytime the need arises and any time teaching and learning is taking place. Participants also content that in some instances the teaching and learning materials are kept in the head teacher/masters' office and teachers access them when they need them. To access the teaching and learning material for use, teachers need to seek permission from the head master or inform the assistant headmaster before accessing them. One of the teachers said: *"Any time I want to use a given teaching and learning material, I ask permission from the assistant headmaster before accessing the teaching learning material, I normally ask the headmaster to get them before the lessons start"*.

In some schools where there was Computer Lab, teachers had to move students to the ICT Centre for practical lessons. An ICT teacher in one of the schools said: *"I access teaching and learning material by moving students to the ICT lab, or moving the TLMs into the classroom"*. Another ICT teacher said: *"As an ICT teacher, during my lessons, I either send the pupil to the computer lab or I personally go to the office to get some of the items I need for my lesson into the class room for use"*. Participants further argued that in some situations, teachers engage pupils in advance preparation by tasking them to find or make a particular teaching and learning materials available prior to the teaching of a given topic. One of such teachers said: *"I assign pupils to search for the teaching and learning materials in advance and bring them to school for teaching or I personally look for the teaching and learning materials to use in my lesson presentations"*. For some participants, there is no need for any special teaching and learning materials for instruction. According to one of such teachers:

*"I deliver my lesson on the chalkboard; use the textbook as reference for pupils and the syllabus as a guide in lesson notes preparation, and all these are available. They are at my disposal, I don't need to go anywhere for them"*.

These participants seem to have varied conceptualisation of what teaching and learning materials were. They did not seem to agree that materials such as textbooks the teaching syllabus as relevant resources for teaching and learning.

Table 5 highlights participants' views on the mode of acquisition of teaching and learning for use in the classrooms at the basic schools.

Table 5: Participants Mode of Acquisition of the TLM for use in Teaching

Response	Yes		No		Total
	Frequency	Percentage	Frequency	Percentage	
Improvise	85	58.6	60	41.4	145
Head buys them	80	54.4	67	45.6	147
I buy them	36	27.3	96	72.7	132
Pupils make them	20	15.9	106	84.1	126
Capitation grant	130	81.2	30	18.8	160
Contribution from PTA	31	24.2	97	75.8	128
Contribution from pupils	9	7.4	112	92.6	121
Donations from philanthropist	21	17.1	102	82.9	123

Field Survey, 2016

In seeking answers on the sources teaching and learning available in basic schools, respondents provided responses contained in Table 5. Out of the total number of 145 respondents, 85(58.6%) said the

materials were improvised, while 60(41.4%) said they did not improvise their TLMs. Some respondents, 80(54.4%) held that, head teachers buy the TLMs for them, while 67(45.6%) were of the view TLMs are not bought by the Head teachers. Analysis of the Table 5 reveals that out of 132 respondents, 96 (72.7%) indicated that they don't buy their own TLMs compared with 36(27.3%), who claim to buy my own TLMs. Similarly, Table 5 indicated that out of 126 respondents, 106(84.1%) said yes pupils make them, while only 20 (15.9%) said no.

Regarding financing of the purchase of TLMs, out of 160 respondents, 130(81.2%) being majority said materials were obtained through the Capitation Grant, while only 30 (18.8%) said it did not come from it. From Table 5, concerning the contribution of PTA in the acquisition and use of TLMs in teaching and learning, of 128 participants, 97(73.8%) said the PTA did not contribute to the provision of TLMs, while 31(24.2%) said no to the contribution of PTA to the provision of TLMs. However, pupils' own contribution to the provision of TLMs was quite visible. Out of 121 respondents, 112 (92.6%) agreed that teachers get TLMs through the contribution of pupils, while just 9(7.4%) did not agree.

### Research Question 3: How Are the Teaching and Learning Materials Used During Instruction in the Basic Schools?

This research question sought to examine how teaching and learning materials were used during instructions at Basic schools within the Tamale metropolis. Responses gathered from the questionnaire were grouped into relevant sub-areas regarding use of teaching materials for analysis. Table 7 presents information on the uses of teaching and learning materials in basic schools in the Tamale metropolis.

Table 7: Teachers' use of TLMs in Teaching Lessons

Use of TLM	Frequency	Percentage
Yes	160	88.9
No	20	11.1
<b>Total</b>	<b>180</b>	<b>100.0</b>

Field Survey, 2016

In Table 7, 88.9% of the participants use teaching and learning materials for various reasons in course of teaching. Teachers are able to interact meaningfully with learners in classroom through teaching materials. About 11% of respondents indicated they did not use teaching and learning materials in the course of teaching and learning sessions.

### Use of Teaching and Learning Materials in Lesson

Teaching and learning materials are used at various stages of lesson delivery. The lesson is organised and delivered at three stages, namely: Introduction, Activity development and Closure or reflection. Some teachers introduce their lessons by presenting teaching and learning materials to interact and then relying on the brief interaction with the materials, the lesson is built the experience. Upon this interaction, teachers then elaborate the concept for deeper explaining. The second stage of a lesson involves activity development where learners are actively involved and assigned to manipulate, move, arrange and draw meanings through the use of these materials in course of the lesson. Teachers at the third and last stage may be observed using teaching and learning materials to conclude their lessons. Learners may be presented with the teaching and learning materials to reflect on them so as to generate knowledge from their interactions.

Regarding how teachers use teaching learning materials in class, one participant remarked as follows: *"I use teaching and learning materials to introduce lessons, other times during the development or during the conclusion stage of the lesson"*. Another participant also remarked:

I use teaching and learning materials at the beginning of the lesson, I display them, at the beginning before presentation and in the middle of a lesson during presentation and at the evaluation stage of the lesson.

Other teachers contended that they use teaching and learning materials at the introduction and conclusion stages. They argued that at the introduction part of the lesson, they use the teaching and learning materials when a concept is being explained at the introductory stage of the lesson. They may also use the teaching and learning materials to explain a practical issue or problem or for purposes of demonstration. Some teachers also indicated that they use the teaching and learning materials to develop the lesson beyond the introduction stage. One other participant said:

I use teaching and learning materials anytime I have a lesson that demands the use of the teaching and learning materials; I use them as and when the need arises and when its necessary.

Some respondents claimed they use teaching and learning materials only at the introductory part of their lesson. Those who teach ICT claimed that they use teaching and learning materials during ICT lessons, and also when the topic is more practical in nature. One of the participants remarked: "I use teaching and learning materials during practical lessons for ICT as reference resources". Others contended that they use teaching and learning materials during teaching and learning process. Some were of the view that they use teaching and learning materials during the entire instructional hour in their lesson delivery. In some instances, participants explained that they use teaching and learning materials during the introduction of their lessons to show a real situation. They contended that teaching and learning materials served as intermediary for better understanding. To support this assertion, a participant remarked thus:

I normally use teaching and learning materials when I introduce new topic and want my students to understand the topic better, I use teaching and learning materials to enhance my students understanding of concept.

From the foregoing, it can be deduced from the many comments from respondents regarding how they use teaching and learning materials that, there are multiple uses of these materials in the schools. Besides using teaching and learning materials to achieve understanding of lesson objectives, they may be used to provide opportunities in the classrooms for learners to interact with the subject of study and among themselves. Occasionally, teachers use teaching and learning materials in critical situations when teaching difficult topics that one cannot easily find resources for. Teachers further argued that they use teaching and learning materials when teaching practical subjects such as geometrical construction, statistics and probability, among others.

There are however, some teachers who seldom use teaching and learning materials in their teaching. One of such teachers said: "I use teaching and learning materials once a while because there are lessons that you cannot teach without using teaching and learning materials". Other teachers who shared the same philosophy argued that not all topics call for the use teaching and learning materials in a lesson, and so they only use them when the topics call for their use. "For example, when pupils do not understand it in abstract terms", the teacher has to use teaching and learning materials in order to enhance their understanding. A teacher in one of the schools said:

Teaching and learning material is only used when it becomes available from the source, then we use it during the lesson presentation". Another teacher claims: "I use teaching and learning materials when we are to do reading, textbooks are used and also when illustrating a point or copying notes during construction of figures".

Participants obviously had varied reasons or arguments for or against the use of these materials in their lessons. While some teachers believe there are some stages within the lesson such as the

introductory part, activity development stage or at the lesson closure when teaching learning materials should be used, others believe the nature of topic to be taught may call for the use of TLMs, and that not all topics require the use of these materials to teach them. An observation of teaching and learning situations in some of the schools visited, it was obvious that some teachers spell out the kind of teaching and learning materials to be used in their lesson notes, and really use those teaching and learning materials during the actual lesson presentation.

At the lower primary levels of education, teachers argue that they use teaching and learning materials to show images to pupils, and then use them to facilitate questioning in the classroom. Others claim they use teaching and learning materials to draw and to bring pupils' attention to the class, while some others also use these materials to facilitate demonstration lessons for pupils to actively feel and manipulate them in their groups or as individuals. One respondent commented that: *"For me I use teaching and learning materials by demonstrating to pupils how to make them and through that, pupils observe and after which they are able to use them"*.

"Sometimes, I demonstrate to students with the materials during lessons for them to observe and then again, I will allow them to use the material themselves with the supervision of the teacher," said another participant.

Another participant said: *"Sometimes I use teaching and learning materials at the introductory level of my lesson and sometimes at the activities stage (showing it to them or demonstrating how to use it)"*.

Sometimes the teaching and learning materials are used as reference materials and serves as guide in order to enable proper delivery of lessons. As teaching and learning materials are used at each stage in the lesson delivery, pupils are given the opportunity to interact with them. By so doing pupils are assisted to identify, learn how to use and manipulate the TLMs. In some instances, teachers demonstrate the use of the teaching and learning materials for pupils to observe and replicate or perform. Generally many teachers display the teaching and learning materials on the chalkboard for every pupil to see and observe the content of it and the purpose for which it is brought to the classroom. Attesting to this fact, one of the participants said:

"in using teaching and learning materials, I introduce the materials for pupils to see them by displaying them in the classroom for pupils to interact with them or by posting them on the board and use them to explain the concepts and sometimes by showing the materials to pupils while explaining the points or concept".

Teaching and learning materials assist pupils in brainstorming during lessons in order to come out with proposed solutions to given problems or questions presented. These materials are used to facilitate group interactions during lessons. For this reason, one of the participants indicated that: *"sometimes I put pupils in groups and make them interact with the teaching and learning materials and in doing so, I am around to guide them as to how to perform a given task"*. In the case of video programmes, the programme is played on a video Cassette for pupils to view, and to arouse and sustain pupils' interest in the lesson. *"Sometimes, I used teaching and learning materials during my lesson delivery to sustain pupils' interest in the lesson and to facilitate understanding of concepts"* said a participant. Beyond arousal of interest, materials may be used to elicit prediction in the classrooms or to summarise the lesson to students by way of a demonstration to promote understanding during the teaching and learning process.

In sum, the above demonstrates the multi-functions of teaching and learning materials in the classrooms and that without them, teachers may just be wasting the time of both pupils and their own at the basic schools in the Tamale metropolis.

#### Research Question 4: How Often Do Basic School Teachers Use Instructional Materials in Teaching?

This research question was purposed to estimate the frequency at which teachers use teaching and learning materials during instructions at the Basic schools within the Tamale metropolis. A summary of the responses on this subject matter are presented in Table 8.

Table 8: Participants rating of the Frequency in the use of TLM in Teaching

Response	Frequency	Percentage
Never	31	17.1
Seldom	48	26.5
Often	96	53.0
Very Often	6	3.3
Total	181	100.0

Field Survey, 2016

Results presented in Table 8 reveal that respondents in the various schools had different views about the frequency of use of teaching and learning materials among teachers in the schools. Some 53% of participants contended that they often use teaching and learning materials in teaching. Another 26.5% said that they seldom use teaching and learning materials, with 17% admitting that they never use teaching and learning materials in their teaching. The implication is that although some teachers use teaching and learning materials in their teaching, a large proportion of teachers do not use teaching and learning materials during their lessons.

#### Reasons for Not Using TLMs in Teaching and Learning Process

Participants ascribed several reasons for not using teaching and learning materials in Basic schools during lesson. While some argue that pupils can understand concepts without teaching and learning materials, others contended that teaching and learning materials are not just available in the schools with few others maintaining that, the subjects they teach do not require use of any teaching and learning materials. One of the participants said that the way he teaches is enough for students to understand even without teaching and learning material: “I assume that the pupils will understand, besides I consider use of TLMs as waste and time consuming”. Another participant who thought the same way had this to say: “Because social science subjects are not all that in need of TLMs, materials needed for meaningful delivering are not available”. One of the English teachers in one of the schools remarked: “Most of the topics especially under English grammar do not require concrete materials”

Other respondents held that their schools had non-functioning equipment and so could not be used for anything. A teacher in one of the schools said: “The computers are not functioning; sometimes too, time constraints prevent us from using them. The time used to organise the TLMs sometimes consumes into the time of the lesson”. One of the teachers who complained about the lack of teaching and learning materials in the basic schools said: “Because we do not have teaching learning materials that pertain to my subject area and where they are, the quantity is inadequate, or very expensive to purchase and so I am unable to use them to teach”.

#### Summary of Key Findings

1. From the analysis done so far, it is obvious that while some basic schools in the Tamale metropolis lacked teaching and learning materials, others had variety of these teaching and learning materials including TV sets, wall clocks, cylinders, beakers, bottles, dry cells, laptop, desktops, keyboards, DVLA programmes, projectors, DVD cassettes, DVD Deck LED flat screens, pairs of compasses, rules, globe, and flip cards/charts,, pictures, textbooks, syllabus, graph boards and drawing

instruments, Mathematics graphs, boards and charts, markers, abacus, word cards, multiphase blocks, Cuisenaire rods, empty tins/bottles, bottle caps among others relevant for teaching multiple subjects.

2. With regards to availability of teaching and learning materials in the basic schools, while some participants claimed that there were enough teaching and learning materials in their schools, others contended that teaching and learning materials were virtually non-existent for use in the classrooms. Where the materials were available in the school, they were kept in most cases in the headmaster's office, the storeroom, in the classrooms or the ICT Centre. In some cases, teachers had to make formal requests to the appropriate authorities to be able to use them. Sources of acquiring these materials were generally through donations (NGOs), purchase, GES or prepared for used.
3. It was established that teachers use teaching and learning materials at various stages of their lessons. While some teachers use TLMs to introduce their lessons, others use them to develop activities in the lesson, whereas some other teachers use TLMs for learners to reflect on them and to draw conclusions to their lessons. Overall, teaching and learning materials were found to have multiple uses at different stages of the lesson, ranging from practical demonstrations to eliciting predictions in the classrooms during the teaching and learning process.

### ***Discussion***

Apart from the private schools, where parents are mostly middle level income earners who could be tasked to purchase materials or charged the cost of the materials as a fraction of the school fees, most parents who have their children attending public schools look up to government to provide essential teaching learning materials or expect school authorities to buy those essential materials using the capitation grants which the government pays for each child.

From the results presented, it is apparent that some basic schools in the Tamale metropolis lack teaching and learning materials, while others have variety of these teaching and learning materials including technological materials such as TV sets, wall clocks, cylinders, beakers, bottles, dry cells, laptop, keyboard, DVLA programmes, projectors, DVD cassettes, DVD Deck LED flat screens, pairs of compasses, rules, globes among many others.

This finding aligned with the literature of instructional materials since all these things are used to support, facilitate, influence or encourage acquisition of knowledge, competency and skills (Josua, cited in Abiodun-Oyebanji & Adu, 2007). Basically, all the items enumerated play roles in facilitating the acquisition of knowledge in the schools and classrooms. The relevance of instructional materials in facilitating understanding in the teaching and learning situations therefore suggest that, in the absence of these materials, effective learning cannot be achieved. Teachers should learn to improvise, because with these materials, understanding or effective communication in the learning process is enhanced, and learners' full participation in the lessons is guaranteed, creating rooms for inquiry, problem-solving, discussion and clarification of issues and ideas among students and the teacher (Abdu-Raheem, 2014).

Riveire (2006) noted that improvisation is a valuable teaching tool teachers should make maximum use of. Adeleke (2010) attributed non-availability, inadequacy and non-utilization of learning materials to teachers' poor knowledge and skills of how to use or improvise them. The findings that emerged exposed some short falls in teachers' skills and knowledge in the use of the teaching and learning materials, inviting conclusions on the need for periodic capacity building for classroom teachers. Teachers require regular training in improvising instructional materials for the teaching and learning in our basic schools.

It was also established from the findings that; true understanding of concepts is achieved when teachers and learners interact together through instructional materials in the teaching and learning activities. It was also revealed that some subject areas or programmes necessarily require visual teaching aids or teaching apparatus to engender understanding and true learning among learners. Some of the common instructional materials used in educational institutions include visual materials, audio-visual aids and community resources.

In spite of the importance of teaching and learning materials in lesson delivery, it was revealed that some teachers still did not accept the need to use these instructional materials in teaching. For this reason, there was controversy among respondents regarding the availability or otherwise of these teaching and learning materials in their schools. While some participants claimed that there were enough teaching and learning materials in their schools, others contended that teaching and learning materials were either non-existent or were available in inadequate quantities.

Ogbondah (2008) advocated for enhancing teacher resourcefulness in schools, encouraging teachers to make conscious searches for necessary instructional materials through local means to supplement or replace the standard ones. Also, the fact that some teachers found it necessary to improvise buttressed Oso's (2011) assertion that the best way for teachers to make use of their manipulative skills was to improvise so as to achieve their lesson objectives at least to some reasonable extent. Improvisation of instructional materials has the tendency of transforming learning into concrete and real environment that allows the students to participate in the production of materials, thereby making teachers and students resource oriented (Jekayinfa, 2012).

Improvisation involves adventure, creativity, curiosity and perseverance on the part of the teacher, and such skills are only realizable through well-planned training programmes (Adebimpe, 1997; Daramola, 2008). The improvised teaching and learning materials available in schools must be kept in well-ventilated and secured space such as the headmaster's office, the storerooms, in well-fortified classrooms or the ICT centre (Abdu-Raheem & Oluwagbohunmi, 2015). These materials should be used regularly for teaching and learning but upon making a formal requests relevant school authorities, to ensure that the materials last for very long while in the schools.

## **Conclusions**

Followings discussions of the findings of the study, some conclusions or inference were arrived at. It emerged from the discussions that not all basic schools in the Tamale metropolis, were endowed with the necessary teaching and learning material required for effective teaching and learning in the schools. While some basic schools particularly some private ones had adequate numbers of and varieties of teaching and learning materials, most public schools lacked some basic teaching and learning materials to enhance learning. In most cases, where these materials were available in public basic schools, they got these materials through donations either from PTAs, NGOs or from Ghana Education Service offices.

Regarding the use of teaching and learning materials in the classrooms, teachers varied in terms of how they applied TLMS in the teaching and learning process. It emerged that while some teachers used TLMs to introduce their lessons, others use them for activity development in the lesson, and still other teachers used them to conclude their lessons, depending on lesson objectives and the style of teaching. Whereas some topics or subject matter easily lend themselves to the use of TLMs, it is equally true that some subject matter may not easily lend itself to use of TLMs. It behoves on teachers to use experience and skills to achieve understanding of the relevant concepts or subject matter in our classrooms and schools for that matter.

### **Recommendations**

The conclusions arrived at following discussions of findings from the study provided the basis for making the following recommendations:

1. To ensure that all basic schools have adequate quantities and variety of teaching and learning materials for effective teaching and learning, Ghana Education Service should demand that a percentage of Capitation grant for every release to the school, be set aside for the acquisition of teaching and learning materials so as to bridge the resource gap in Basic schools within the Tamale metropolis, and hence minimize the incidence of lack teaching and learning materials.
2. Ghana Education Service in collaboration with other stakeholders in education, and Non-governmental Organizations interested in education could generate list of less endowed schools, and make deliberate plans to resource such schools to bring them up to speed with their counterparts in the Tamale metropolis. Such schools should be supported to enable them store and keep these materials to last for very long while so learners can benefit from their use.
3. Ghana Education Service together with other stakeholders should encourage heads to embark on school wide or cluster based in-service trainings to build the capacities of basic school teachers, on how to use contemporary technological teaching and learning materials donated to the schools, to promote teaching and learning. Through skills trainings, teachers will be enabled to effectively utilize these resources in their teaching without much hindrance.
4. To enhance the frequency of use, and also attain prolong the life spans of these materials, Head teachers are encouraged to assign at least two teachers to be responsible for keeping and maintaining the instructional materials available to the schools, so as to enable other teachers have to access them at their convenience. All possible hindrances or barriers likely to obstruct the release of these materials regularly to colleague teachers who require their use must be eliminated or minimized to the barest. The incidence of theft of and unaccountability for these instructional materials may also be overcome since they will be under the care of teachers.

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