

INFLUENCE OF UTILIZATION OF INSTRUCTIONAL RESOURCES ON ACADEMIC PUPILS' LEARNING IN PRIMARY SCHOOLS IN CHANGAMWE DISTRICT, MOMBASA COUNTY, KENYA

Francisca Kamwaki Syengo –Lecturer, South Eastern Kenya University

Jackson Maalu – Senior Lecturer, Dept. of Business Administration, University of Nairobi

Fredrick Musyoka – Lecturer, Mount Kenya University

Oddillia Nabwire – Lecturer, Mount Kenya University

Abstract

This study intended to assess how the utilization of instructional resources influence learning among primary school pupils in Changamwe District of Mombasa County. Instructional resources are important in the teaching and learning processes. The specific objectives of the study were: To identify the extent of use of instructional resources in the teaching- learning process in primary schools, to determine the effect of class enrolment on use of instructional resources in teaching-learning process, to establish whether teachers' training and experience influence the effective use of instructional resources during the teaching-learning process and to investigate the influence of instructional resources utilization on pupils' learning and academic performance. A descriptive survey research design was adopted. Frequencies, percentages, the mean and standard deviation were used to analyze the data. The findings revealed that effective utilization of instructional resources influenced pupils' learning which leads to high academic performance. The policy implication of the study is that utilization of instructional resources should be intensified by way of increasing awareness to teachers, monitoring and supervision to ensure that pupils are getting quality education through effective utilization of instructional resources.

Key Words: *utilization, instructional, resources, academic, learning*

Introduction

Instructional resources are learning materials, the effective utilization of which helps learners to learn faster and better (Ogbondah, 2008; Agun, 1988). Ikerionwu (2000) views instructional resources as objects or devices, which help the teacher to make a lesson to the learner. Thus instructional resources are concrete or physical objects which provide sound, visual or both to the sense organs during teaching, (Agina-Obu, 2005). Brunner (1973) stated that the teacher's work as a communicator, model and identification figure can be supported by a wise utilization of a variety of resources that expand experience, clarify it and give it personal significance.

Instructional resources can be broadly classified into three groups namely; Primary, Secondary and Tertiary. The primary category comprises the actual objects seen in their natural environment such as, grazing cattle, musical instruments in use, animals in their habitats and species of trees growing in a natural forest. The secondary category comprises models and preserved specimen such as sounds recorded on cassette or produced on radio, mounted leaves and specimen of animals such as fish and birds. These do not have the reality of the primary category. Finally the tertiary category comprises two-dimensional representations of the real objects. They include text books, films, pictures, charts, photographs, maps, and the chalkboard along with the latter's accessories.

Utilization of instructional resources refers to the art of effective selection, acquisition and use of the instructional resources to enhance achievement of the lesson objectives. For this to happen, resources must be made available. The same must be adequate and relevant to the level of learners and the content being taught. Under the current Kenyan education system, performance in class tests, term examinations as well as national examinations is recognized as the reflection of the level of learning of pupils once they complete a given learning process within a specified period of time. Tests and examinations are the most common modes of assessing learning after a teaching/learning experience either after a given term or immediately after or towards the end of a lesson.

The Free Primary Education programme has been ongoing since year 2003. Educators and the entire Kenyan society are disillusioned with the question as to what needs to be done so as to realize the benefits anticipated when the programme was incepted. The government has in addition continued to provide in-service training for both classroom teachers and school principals while at the same time employing more teachers to cater for the national staffing deficit. The problem of poor performance has nevertheless been persistent.

In the Kenyan context, the school inputs that seem to have won much government attention are the instructional resources and teacher training. However, this effort has been constrained by the challenge of large class enrolment with some schools recording well over 80 pupils per class against the recommended 40 pupils per class. School buildings and facilities are not getting expanded in proportion to the upsurge in enrolments since the FPE funds do not cater for building of classrooms and sanitation facilities. The fund has been restricted to financing of recurrent expenditure items most of which are of instructional nature giving a wide berth to investment in development infrastructure that is, physical facilities.

The overall problem addressed in this study is that, despite the Kenyan government's commitment to provide funds to all public primary schools for procurement of instructional materials, academic performance of pupils in Coast region has been unable to match other areas such as the Central, Nairobi and Nyanza regions among others. The Ministry of Education Science and Technology (2005) hypothesized that some of the problems affecting the quality of learning in primary schools in Kenya relate to poor resource management, poor learning environment due to overcrowding and inadequate facilities. As Psacharopolous (1985) pointed out, it is not enough simply to provide instructional resources to schools, some efforts must be made to ensure that they are adequately used. The study therefore sought to find out the influence of the utilization of instructional resources on pupils' learning in primary schools in Changamwe district in Mombasa County. The study focuses on the following objectives;

1. To find out the various types of instructional resources available in the primary schools.
2. To identify the extent of use of instructional resources in the teaching- learning process in primary schools.
3. To determine the effect of class enrolment on use of instructional resources in teaching-learning process
4. To establish whether teachers' training and experience influence the effective use of instructional resources during the teaching-learning process.
5. To investigate the influence of instructional resources utilization on pupils' learning and academic performance.

Literature Review

This study theoretically employed the framework of the experimental learning which was developed by David Kolb. This theory looks at learning as a four-stage cyclical theory of learning (Kolb, 1984). Kolb's Experimental Learning Theory is a holistic perspective that combines experience, perception, cognition and behavior. The American educational theorist observed that during the learning process, knowledge is created through the transformation of experience. The theory presents a four cyclical model of learning consisting of four stages. The first stage is concrete experience which he refers to as "do". The second stage is the reflective observation (or "observe"). The third stage is abstract conceptualization (or "think") while the last stage is active experimentation (or "plan").

According to this theory the utilization of instructional resources enhances learning in pupils as they are actively involved in doing, observing, creative thinking, and experimentation and consequently improve their academic performance. Effective pupils' learning during a teaching-learning process takes place when the learners are involved by manipulating the resources, making observations and drawing conclusions based on their findings as opposed to the teacher delivering the content by narrating the observations to the pupils. It is imperative therefore that pupils' learning could be hindered by ineffective utilization of instructional resources which occurs mainly in the form of unavailability, inadequacy and irrelevancy of the resources presented for the lesson.

The role of the instructional resources in the teaching-learning process cannot be overemphasized. However, it is important to take note of the relevance of the instructional resources to the content being taught. Most of the research findings indicate that there is a strong positive relationship between instructional resources and pupils performance. Mwamwenda and Mwamwenda (1987) found out that school facilities including textbooks are among the factors that contribute to pupils' academic achievement. Jamison (1981) studied the correlation between the availability of physical facilities and the level of teacher education and concluded that the two collectively created a classroom quality that can predict the pupils' achievements. A study by the Kenya National Examination Council (KNEC, 2010) on the other hand found that teachers were to blame for pupils' poor performance, as some of them were not able solve a class six mathematical problem. This finding corroborated an earlier study by Coombs (1970) in which he asserted that the problem of teacher supply is not one of simple numbers but of quantity and quality. Another study that contributed to the discussion on pupils' learning observed that over enrolment is a contributing factor to poor performance in public primary schools in Kenya (Boy, 2006).

The cited studies have laid emphasis on availability of physical facilities and the quality of teachers as the factors that determine pupils' performance. These factors have been well addressed through the Free Primary Education (FPE), but the pupils' performance remains unsatisfactory. This calls for need to establish the extent to which teachers are using instructional resources in their lessons and how the use or lack of it is influencing learning during a learning process. An empirical study is required to ascertain the type of instructional resources and frequency of use of the resources and whether the resources used during the teaching/learning process are relevant as to enhance pupils' learning. This study sought to bridge this knowledge gap by determining the influence that utilization of instructional resources has had on pupils' learning in primary schools in Changamwe district.

Research Methodology

The study used the descriptive survey to investigate the influence of instructional resource utilization on pupils' learning and performance. The study involved observing a lesson in progress purposely to ascertain the availability of instructional resources and their use or lack of it and how it influences the teaching-learning process.

All the primary (both public and private) schools in Changamwe district formed the target population. The latter comprises of 421 trained teachers and 19,064 pupils. The district which is subdivided into educational divisions namely Changamwe and Jomvu has a total of 20 public and 42 private primary schools. Purposive sampling was used to select one class from each category such that class three, five and eight (standard 3, 5 and 8) formed the sample. Random sampling was used to select the lesson to be observed for classes 3 and 5 as this depended on the school timetable while purposive sampling was applied in the selection of class teachers who teach in the sampled classes and the school head teacher.

The response rate was 90.3% denoting a low standard margin of error. The sample involved a total number of three hundred and sixty respondents out of whom three hundred and twenty five responded to the items in the questionnaires. The high response rate was as a result of the questionnaires being easy to understand and within reasonable length. The fact that the researcher administered the questionnaires also contributed to high response rate as the respondents felt obliged to participate in the study as the researcher waited to collect them. This was possible given the number of schools sampled and the size of Changamwe district where schools are closely located.

Findings and Discussion

This section discusses the findings of the study focusing on the extent of utilization of instructional resources and the influence it has on pupils' learning. Availability of instructional resources in the stores and in class during the teaching/learning process, frequency of their use, relevance to the level of the learners and subject matter and adequacy were used as the measures of the extent of utilization of instructional resources.

The results revealed that textbooks, mathematics charts, the globe, maps and science charts were available in every school. This could be due to government initiative to provide funds for the procurement of the above mentioned resources. However it should be noted that no single school in Changamwe District has attained the government projected textbook-pupil ratio of 1:1 reasons being over enrolment, loss of the textbooks and wearing out of the same over time. Some schools were found to have as many as four pupils sharing one text book. The results also showed that printed resources are the ones mainly available resources to primary schools as compared to other types of instructional resources such as radio, computer, and projector. Thus the learners have no access to electronic instructional resources. This means absence of exposure of the learners to the information communication and technology devices.

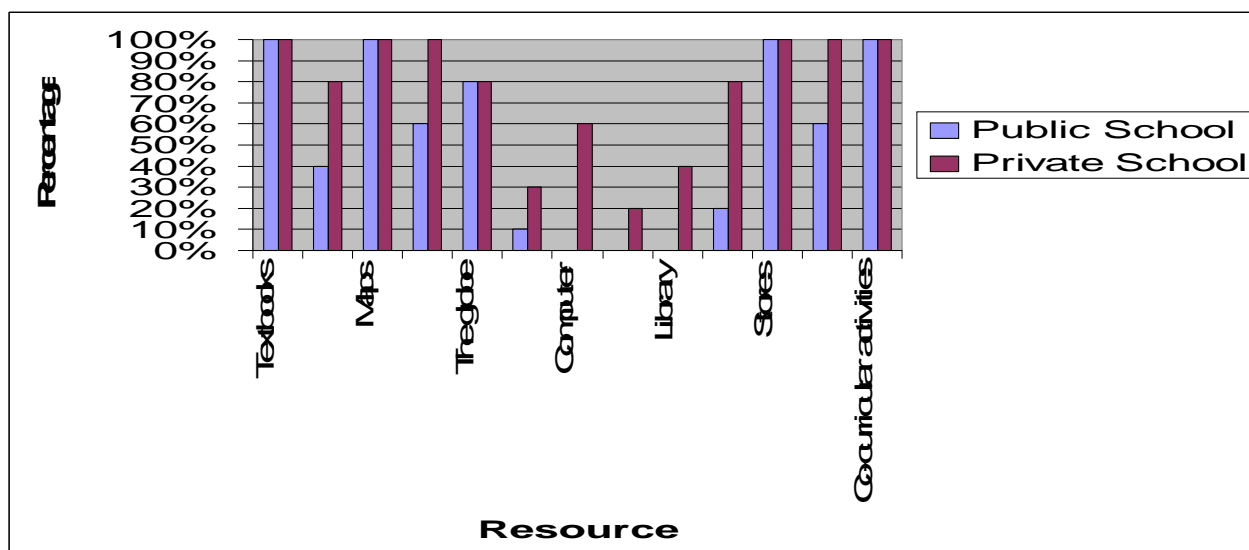
Table 1; Showing responses of the Head teachers on the availability of various instructional resources

| Name of resources | Respondents | | No. of Schools With the resources |
|---------------------|-------------|-----------|--------------------------------------|
| | Public | Private | |
| Textbooks | 10 100% | 5 100% | 15 |
| -Mathematics charts | 4 40% | 4 80% | 8 |
| Maps | 8 80% | 5 100% | 13 |
| The globe | 8 80% | 4 80% | 12 |
| Science charts | 6 60% | 5 100% | 11 |
| Radio | 1 10% | 3 60% | 4 |
| Computer | 0% | 2 40% | 2 |
| Projector | 0% | 0% | 0 |
| Library | 0% | 4 80% | 4 |
| Computer laboratory | 2 20% | 4 80% | 6 |
| Stores | 10 100% | 5 100% | 15 |

Source: Head teachers' questionnaire

Table 1 showed that 100% of the schools have textbooks, while 80% of the schools have maps only 40% and 60% have mathematics and science Charts respectively. In addition the study found that 100% of the schools have stores for books, 20% of the schools have Computer laboratory while none of the public schools has a library. This implied that both the public and private schools are well endowed with the printed instructional resources, that is, text books and maps. Further while 80% of private schools have mathematical charts, only 40% of public schools have them. The table showed that electronic resources were unavailable in public schools except in one school making 10% of the sample population whereas 60% of private schools have electronic instructional resources. Unavailability of library facilities in public schools displayed lack of strong foundation for learners to develop their individual study skills hence making them entirely dependent on classroom teaching.

Figure 1 Clustered bar graph showing the availability of instructional resources and the head teachers responses.



4.2 Extent of use of instructional resources during teaching-learning process

The results indicated that there are a variety of resources available in the schools that teachers were not using in their lessons. Thus the head teachers may not be supervising learning in their schools. It was further observed that there was ineffective use of instructional resources as majority of the teachers use the textbooks and the chalkboard often while other resources are occasionally or not at all used. This showed that the type of resources teachers use in classes are those that do not allow and enhance essential learning and intellectual skills. This implies that to achieve the lesson objectives, teachers need to combine the textbooks with visual or audio resources so as to have the pupils fully participating in the lesson as they use all their senses. This in turn helps the learners to develop deeper understanding and retention of the concepts.

This question sought to find out how often teachers were using given resources during teaching-learning processes.

Table 2; Showing teachers' frequency of use of various instructional resources

| Frequency of use of Instructional resources | Often | | Occasionally | | Not at all | |
|---|------------|-----------|--------------|----------|------------|----------|
| | Public | Private | Public | Private | Public | Private |
| Textbooks and chalkboard | 10 100% | 5 100% | 0 0% | 0 0% | 0 0% | 0 0% |
| Charts, maps and pictures | 15 50% | 9 60% | 13 37% | 6 40% | 2 7% | 0 0% |
| Models, specimens and real objects | 10 33% | 3 20% | 11 37% | 9 60% | 9 30% | 3 20% |

| | | | | | | |
|--|---------|---------|-------------|-----------|-------------|----------|
| Radio, computer, TV and video recorder | 0 0% | 0 0% | 3 10% | 5 33% | 27 90% | 3 20% |
| Field trips and resource persons | 0 | 0 | 14 46.7% | 12 80% | 16 53.3% | 3 20% |

Table 2; showed that all the teachers (100%) often use the textbooks as the main resource during teaching/learning. This type of resource denies the learners an opportunity to utilize all their senses thus leading to ineffective learning. Only 50% of the teachers often used maps, charts and pictures in public primary schools. This meant that the remaining 50% of the teachers lacked the initiative to prepare the resources despite all of them having been trained on the production of instructional materials. Further the study found that 37%, 33% and 30% of the teachers used models and specimens or real objects often, occasionally or not at all respectively during teaching-learning process. Most of these resources are locally available in the school compound and as such, teachers have no excuse for not using them. The use of electronic instructional resources was quite minimal with only 10%, occasionally using such resources as compared to 90% who do not use them at all. Field trips are an effective way to aid delivery of the subject matter during teaching/learning. However this does not seem to have been embraced by majority of the teachers since only 46.7% of teachers occasionally use field trips or invite resource persons while 53.3% of the teachers do not at all use these resources.

Table 3: Showing pupils' responses on frequency of use of instructional resources such as textbooks, chalkboard, print, non-print, specimen, real objects, electronics, field trips, experiment and practical lessons

| Frequency of use of Instructional resources | Often | Occasionally | Not at all |
|--|--------------|--------------|--------------|
| Textbooks and the chalkboard | 259 97.7% | 6 2.3% | 0 0% |
| Charts, maps and pictures | 115 43.4% | 57 21.5% | 93 35.1% |
| Models, specimens and real objects | 14 5.3% | 109 41.1% | 142 53.6% |
| Radio, computer, TV and video recorder | 0 0% | 17 6.4% | 248 93.6% |
| Field trips and resource persons | 13 5.0% | 176 74.0% | 56 21.0% |
| Experiments | 131 49.4% | 73 27.5% | 52 19.6% |
| Practical lessons (Giving the learners opportunity to manipulate the resources) | 124 46.8% | 102 38.5% | 35 13.2% |

This question sought to find out how often pupils were using given resources during learning processes. Table 3 depicts a situation where textbooks, chalkboard, charts, maps and pictures were the often used resources whereas the fieldtrips, models, real objects and practical lessons are only occasional used. Radio, computer programmes and recorded materials are some of the resources not at all used in teaching/learning in primary schools.

4.3 Class enrollment and use of instructional resources

This study found out that class enrollment affected use of instructional resources. Textbooks were being shared among four pupils while it was difficult for the teacher to improvise resources for the

learners especially in large classes. Large class enrollment also proved a challenge while trying to organize pupils into groups so as to share the limited instructional resources. During the demonstration teachers had difficulty reaching the pupil at the back of the class hence the teacher preferred to use the chalkboard only.

The question sought to find out whether teachers have difficulties in teaching large classes using instructional resources. The responses were rated based on the Likert scale where each response was awarded points as shown below.

Strongly agree = 5, Agree = 4, Disagree = 3, strongly disagree = 2, Uncertain = 1.

Table 4; Teachers' Responses on, Use of Instructional Resources in Large Classes

| X | F | Fx | Dx | (dx) ² | f. (dx) ² |
|---|-------------|---------------|-------|-------------------|-----------------------|
| 5 | 22 | 110 | 0.69 | 0.4761 | 10.47 |
| 4 | 18 | 72 | -0.31 | 0.0961 | 1.73 |
| 3 | 3 | 9 | -1.31 | 1.7161 | 5.15 |
| 2 | 1 | 2 | -2.31 | 5.3361 | 5.34 |
| 1 | 1 | 1 | -3.31 | 10.9561 | 10.96 |
| | $\sum f=45$ | $\sum fx=194$ | | | $\sum f.(dx)^2=33.65$ |

X= Mean= 4.31 Standard deviation = 0.8647

The results presented in table 17 showed a mean score of 4.31 which was almost 4 point in the Likert scale showing agreed option and the standard deviation was 0.8647. This meant the dispersion was very small and therefore the responses were close together.

4.4 Teachers training and experience and how it influences the effective utilization of instructional resources

This question sought to find out whether teachers' professional training and lack of technical know-how were reasons why teachers do not use instructional resources during teaching.

Table 5: Professional Training and Lack of Technical Knowhow

| X | F | Fx | Dx | (dx) ² | f. (dx) ² |
|---|-------------|---------------|-------|-------------------|-----------------------|
| 5 | - | - | - | - | |
| 4 | 10 | 40 | 1.27 | 1.6129 | 16.13 |
| 3 | 13 | 39 | 0.27 | 0.0729 | 0.95 |
| 2 | 22 | 44 | -0.73 | 0.5399 | 11.88 |
| 1 | - | - | - | - | - |
| | $\sum f=45$ | $\sum fx=123$ | | | $\sum f.(dx)^2=28.96$ |

X= Mean= 2.73 Standard deviation = 0.8022

The results presented in table 5 showed a mean score of 2.73 which was almost 3 point in the Likert scale showing disagreed option and the standard deviation was 0.8022. This meant the dispersion was small and therefore the responses were close together. The study found out that utilization of instructional resources during the teaching-learning process did not depend on the teachers' professional qualifications.

4.5 Influence of instructional resources on pupils learning during teaching-learning process

The question sought their opinions on whether instructional resources stimulates their interest in learning, whether it enables them to learn difficult things easily and whether it enables them to remember concepts easily.

Table 6; Responses on Influence of instructional resources on pupils learning.

| X | F | Fx | Dx | (dx) ² | f. (dx) ² |
|---|--------------|----------------|-------|-------------------|------------------------|
| 5 | 178 | 890 | 0.44 | 0.1936 | 34.46 |
| 4 | 62 | 248 | -0.56 | 0.3136 | 19.44 |
| 3 | 22 | 66 | -1.56 | 2.4336 | 53.46 |
| 2 | 2 | 4 | -2.56 | 6.5536 | 13.11 |
| 1 | 1 | 1 | -3.56 | 12.6736 | 12.67 |
| | $\sum f=265$ | $\sum fx=1209$ | | | $\sum f.(dx)^2=133.14$ |

X= Mean= 4.56 Standard deviation = 0.7088

The results presented in table 19 showed a mean score of 4.6 which was almost 5 point on the Likert scale showing strongly agreed option and the standard deviation was 0.7088. This meant the dispersion in opinion was small hence the responses were close together. The research findings showed that using a variety of instructional resources stimulates learners' interests as they get an opportunity to manipulate the resources. It also enables them to learn difficult concepts easily. Thus utilization of instructional resources influences pupil's learning during teaching-learning process.

Researcher's observation on utilization of instructional resources during a Teaching/learning process.

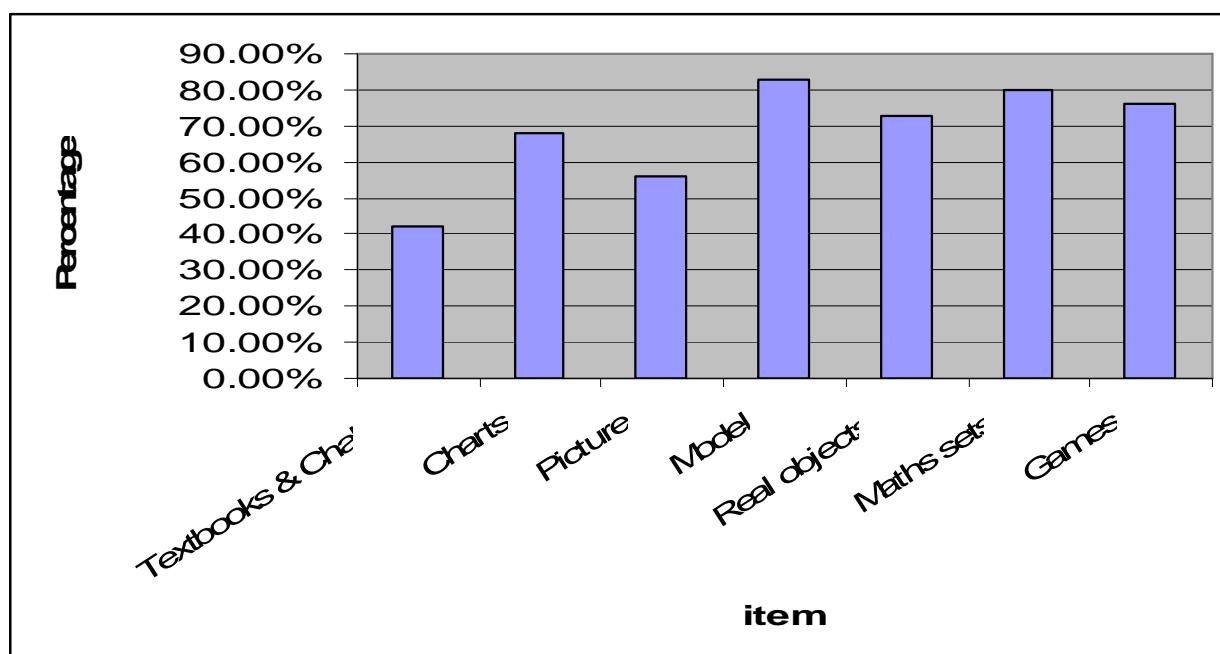


Figure 3: Influence of the utilization of instructional resources

The figure above showed that utilization of instructional resources influenced pupils learning during a teaching-learning process. It was observed that teachers who used a variety of instructional resources achieved the lesson objectives and the majority of the learners were able to successfully accomplish the tasks assigned by the teacher. It was also observed that there was participation of the learners in the lesson. High percentage of learners who were able to accomplish the tasks was recorded during the lessons when the teachers used models, real objects, charts and games as shown by percentage of 83%, 73%, 68% and 76% respectively. It was observed that teachers who used the text books and the chalkboard only had 40% of the learners learning the skills and the concept taught implying that the objectives of the lesson were not fully achieved.

Conclusion

Based on the findings of this research work, it was concluded that most schools had procured the required textbooks and other printed instructional resources but the textbook pupil ratio fell below the recommended 1:1 by the year 2010. Electronic instructional resources were not available in schools hence teachers did not use them in teaching. However the study did not establish whether teachers had the knowhow to use computers and other electronics as this was not the focus of this study. It was also shown by the responses that utilization of instructional resources is a very important factor in producing effective learning in pupils hence improving their academic performance.

Regarding objective two, the extent of use of instructional resources was found to be high as shown by the teachers and pupils' responses. However, the resources mostly used are textbooks thus disadvantaging the non-reader learners. There is need to utilize a range of resources so that differences among learners are catered to. It was found that class enrolment affects use of instructional resources as teachers find it difficult to organize the learners hence they are discouraged and only choose to use the chalkboard.

Teachers training and experience was found not to affect the use of instructional resources as majority of the teachers disagreed that their professional training and technical knowhow hindered use of resources during the teaching-learning process. Objective five sought to investigate the influence of instructional resources on pupils' learning. It was observed that instructional resources greatly influence pupils learning during teaching-learning process. Models, real objects, mathematical sets, games, counters, charts and pictures were found to be the most influencing resources to learning of pupils whereas the textbooks and chalkboards were found to be least influencing in learning of pupils.

The study concluded that utilization of instructional resources influences pupils' learning during a teaching/learning process. Further it was found that in spite of head teachers' rich experience as school heads their commitment to their role of curriculum management and supervision which should include monitoring on how teachers are utilizing instructional resources in their schools was low. There is need for a policy to guide the use of appropriate resources and empower the head teachers or a representative who should be in charge of resources, to monitor and assess the resources that teachers use in class. In secondary schools for instance, there is a laboratory technician who ensures that science teachers use the appropriate resources as opposed to the same being left to the discretion of the subject teachers where there would be a risk of teachers settling not for appropriate resources but those convenient to the teacher at the expense of the learner.

Research should be conducted to find out the challenges affecting utilization of resources during planning and delivery of the lessons by teachers.

REFERENCES

- Adekeye, R.B. (2008). Social Studies Curriculum Lecture Material on SSE 402 Unpublished
- Agina – Obu, T.N. (2005). The Relevance of instructional materials in teaching and learning in Robert – Okah, I & Uzoesh, K.c. (Ed). *Theory are practice of teaching*, Port Harcourt: Harey Publication.
- Agun, I. (1988). Learning Materials towards Education in the year 2000, *Journal of Educational Media Technology*, 1(4), 498–521.
- Boy J. (2006). *Free Primary Education & Its effects on student performance in Bungoma District*. An unpublished research thesis, Moi University.
- Bruner, J.S. (1973). *The Process of Education*, Cambridge: Harvard University Press. Coombs, P.H. (1970). *What is educational planning?;* International Institute For Educational Planning. Paris
- Ikerionwu, J. C. (2000). Importance of Aids and Resources in Classroom Teaching, in *Perspective of Classroom Teaching*, Oyeneyin, A.M. (ed), Abuja: Martmonic investment Ltd.
- Jamison, D., Searle, B., Galda, K. & Heyneman, S. (1981). Improving Elementary Mathematics Education in Nicaragua: An Experimental Study of the Impact of Textbooks and Radio on Achievement. *Journal of Educational Psychology*. 73.4 .556-567.
- Jimoh, M. F. (2009). The use of instructional Materials in the teaching of Social Studies in Secondary schools in Kabba/Buni Area of Kogi state. Retrieved from Internet <http://www.docstoc.com>
- Killen, R. (2006). *Effective Teaching Strategies: Lessons from Research and Practices (4th edition)*. New Caste Thompson.
- Kolb, D. A. (1984). *Experiential Learning: Experience as a Source of Learning and Development*. Englewood Cliffs, NJ: Prentice-Hall.
- Otieno, S. (2010). KNEC study on learning a shocker for parents. The standard .Retrieved from [http://www.standardmedia.co.ke/insidepage.php?id=2000018935 & cid=4&etl](http://www.standardmedia.co.ke/insidepage.php?id=2000018935&cid=4&etl). September 23
- Mwamwenda, T.S. & Mwamwenda, B. B., 1987 School facilities and pupils academic Achievement *Comparative*, 23(2), PP.225-235 New York John Willey & Sons ltd.

Ogbondah, L., (2008). An Appraisal of Instructional Materials Used to Educate Migrant Fishermen's Children in Rivers State, Nigeria. *International Journal of Scientific Research in Education*, 1(1), 13-25

Orodho J. A. (2009) *Elements of Education and Social Sciences research methods*. Kanezja Publisher, Maseno Kenya.

Psacharopolous G. (1985) *Education for Development*, OUP London.

Republic of Kenya, MOEST (2005). A policy Framework for Education Training and Research. Government Printer, Nairobi.