

**CHALLENGES OF TEACHING AND LEARNING MATERIALS IN
PUBLIC SECONDARY SCHOOLS, IN TANA- RIVER DISTRICT, KENYA.**

BY

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**A Research Project Submitted to the school of Education in Fulfillment of the
Requirements for the Award of Masters of Education (planning) of Kenyatta
University.**

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DECLARATION.

This project is my own original work and has not been submitted for an award of a degree in any other university.

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DEDICATION.

This work with due respect and honour, I'm dedicating it to my parents Francis and Rachael for their word of encouragement since when I was young.

Lastly I'm dedicating it to my wife Josephine and my son Frank for psychological, material and moral support they offered when I was at the verge of desperation due to great pressure and challenges I faced on my route to completion of this work.

ACKNOWLEDGEMENT.

I wish to acknowledge almighty God for his favour and endless grace and strength throughout my studies to this far. I do acknowledge my supervisors M/S Merioth Githogori and Dr. Norbert Ogeta for their unlimited guidance. Without them I could not have attained this.

I would like also to extend my sincere gratitude and appreciation to the principals, staff and students of the sampled schools for their co-operation in filling the questionnaires .I can't also forget to thank District Quality and assurance standard officers of Tana River and Tana North District and parents representative for their co-operation during the interview. Am greatly indebted to the principal and my staff colleagues at Hirimani secondary school, for their understanding and editing this work.

May the creator bless them all. Read Psalms 34:1-9

ABSTRACT.

This study was an investigation of challenges of teaching and learning materials in public secondary schools in Tana River District, Coast Province, Republic of Kenya. Teaching and learning materials greatly influence education quality and standards since it affect the teaching and learning process at all levels. The purpose of this study was to investigate the impact of shortages of teaching and learning materials in public secondary schools in Tana River District. The specific objectives of this study were to;

Find out challenges of inadequate teaching and learning materials, Determine ways, in which teaching and learning materials are sourced, Investigate how teaching and learning materials are maintained and replaced, Assess whether teaching and learning materials are adequate and Establish ways and means of improving existing teaching and learning material in public secondary schools in Tana River District.

The study adopted exploratory approach using descriptive survey design. The population comprised of ten public schools, 3500 students and 126 teachers. The sample was having 5 public schools, 4 principals, 4 laboratory Technicians, 24 HODs, 2 DQASOs, 5 parents representatives of either form three or four and 97 students from form three and four students where stratified and interval random sampling was applied to select them. Piloting was done in school F and test retest was done to determine reliability of the instruments. The data collected was both Qualitative and Quantitative. Spearman rank order correlation coefficient gotten was 0.6 and the instruments were regarded of good reliability.

The results indicated that (69.2 %) of the respondents agreed that teaching and learning materials are inadequate. All respondents (100%) showed that ICT infrastructure is lacking in the institutions. The teachers (79.2%) showed that inadequate funds and great distance (45%) are the biggest problem in relation to teaching and learning materials acquisition. (50%) Of the respondents said materials are fairly maintained and (22.4 %) commented that there is no specific period of replacement while (33.3 %) said storage rooms are lacking in our institutions. Concerning teacher's availability (100%) of the respondents commented they are not enough and (33.3%) of the respondents asserted that tours and excursions are not undertaken. The study revealed that there is only one laboratory in all the institutions (100%) and (100%) of the respondents said it is not spacious. All the parent Representative respondents (100%) reported that computers and daily newspapers are lacking in their homes. Availing more teaching and learning materials was mentioned by (45.8%) of the respondents and more funding was highlighted by (82.5%) of the respondents as ways of improving teaching and learning materials.

Conclusions made by the study were that teaching and learning materials are inadequate and this leads to ineffective teaching and learning and also poor performance. Resource rooms, modern libraries are not in place in most schools and storage rooms are in poor state of neglect. Inadequate funds and long distance was a major problem in relation to teaching and learning materials acquisition and this consequently lowers time utility. The government policy guiding IT infrastructure is long overdue. Research of this kind was recommended to all other educational institutions and teachers challenges in bid to develop and improve education quality and standards hence poverty alleviation in this country.

LIST OF ABBREVIATIONS AND ACRONYMS.

| | |
|--------|--|
| CAMFED | - Campaign for Female Education. |
| DQASO | - District Quality and Assurance Standards Officer. |
| EFA | - Education for All. |
| FAWE | - Forum for African Women Educationist. |
| FPE | - Free Primary Education. |
| FSE | - Free secondary Education. |
| GOK | - Government of Kenya. |
| ICT | - Information and Communication Technology. |
| JKF | -Jomo Kenyatta Foundation. |
| KIE | - Kenya Institute of Education. |
| KLB | -Kenya Literature Bureau. |
| MOE | -Ministry of Education. |
| NGOS | -Nongovernmental organization. |
| PTA | -Parents Teachers Association. |
| SEPU | -School Education Production Unit. |
| SPSS- | -Statistical package for social sciences. |
| TSC | - Teachers' service commission. |
| UPE | -Universal Primary Education. |
| UNESCO | -United National Education scientific and cultural organization. |

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CHAPTER ONE.

1.0 Introduction.

The chapter presents the background information of the study, statement of the problem, study objectives, research questions, study significance, scope of the study, limitations of the study,

delimitations of the study, Assumptions of the study, theoretical, conceptual framework and operational definition of central terms.

1.1 Background to the study.

After UNESCO declared Education a Universal Basic Human right in 1948, various countries in the world came up with different mechanisms to help them achieve that goal. Other organizations such as FAWE, CAMFED among others, have been formed for the realization of the above. The Jomtien conference in Thailand 1990 was also held to sensitize people and all governments in the world on issues to do with EFA goals which were to be realized in the year 2000. Dakar conference was also held in the year 2000 to examine goals which were set in 1990.

After independence, the Kenyan government realized that for the country to develop there is need to invest in Education and therefore, slowly by slowly the education sector was expanded and especially quantitatively. The table 1.1 below shows the progressive increase of Education institutions in this country from Year 2002-2008.

Table 1.1 Educational institutions from year 2002-2008.

| Year | 2002 | 2003 | 2006 | 2007 | 2008 |
|------------------------------------|--------|--------|--------|--------|--------|
| Primary schools | 19,124 | 19,496 | 25,925 | 26,104 | 26,206 |
| Secondary Schools | 3,667 | 3,989 | 5,659 | 6,485 | 6,566 |
| Primary Teachers Training colleges | 32 | 32 | 33 | 36 | 36 |
| Universities | 19 | 23 | 24 | 28 | 28 |

Source: MOE, June 2009.

Lauwery's (1969) asserts “ *It has come to be generally accepted that skilled manpower is a national resource equal to, say, developed mineral deposits or oil fields*’.

The government embarked on provision of high quality and relevant education for the young nation and in response to this, Various Education commissions have been formed since

independence for the purpose of reviewing education system. Through acts of parliament, TSC, JKF, SEPU, KIE, and KLB were formed for the purpose of promotion of Education standards and quality in this country.

The Education Act of 1968 empowers the Education Minister to promote both Quantitative and Qualitative aspects of Education in this country. The Qualitative aspects can be attained through the use of teaching and learning materials in schools among other ways. The financing of education in Kenya has been assuming a cost-sharing strategy among various stakeholders. Orodho (2005) avers; *“A historical analysis of patterns and trends of Education financing in Kenya reveals existence of partnership between the state and communities long before the introduction of cost-sharing policy by the Government of Kenya. In the cost-sharing strategy the government finances Education administration and professional services while the communities, parents and sponsors provide physical facilities, books, and supplementary readers, stationary and consumables”*.

The teaching and learning materials provided by stakeholders in public institutions provide learners with necessary experiences. The free primary education and free tuition waive in secondary schools which were started in 2003 and 2008 respectively have increased enrolment in schools and this study was an investigation on how this has impacted on quality and standard of education in relation to inadequacy of teaching and learning materials in Kenya and in particular, Tana –River District. Table 1.2 below shows the increase in secondary school enrolment in Kenya from 2002-2008 attributed to the above.

Table 1.2 Secondary School Enrolment From Year 2002-2008.

| YEAR | 2002 | 2007 | 2008 | % INCREASE |
|-----------|---------|-----------|-----------|------------|
| ENROLMENT | 851,836 | 1,180,267 | 1,382,211 | 15.0 |

Source: MOE, June 2009.

Constituency Development Fund provides monies to schools and learners in particular which is used to buy teaching and learning materials in schools. MOE circular (2008) to all secondary school head teachers has the information that each student was to receive Ksh.10, 625 per year for tuition. Despite this effort by the GOK, assessment reports in the DEO's Office, Tana River District and some schools visited by the researcher reveal that teaching and learning materials have challenges. Table 1.3 below shows MOE Expenditure from 2003/2004-2008/2009(KShs. 000,000). High enrolment requires more funding.

Table 1.3 MOE Expenditure From 2003/2004- 2008/2009.(kshs.000,000)

| Year | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 |
|-----------|-----------|-----------|-----------|------------|------------|-----------|
| Recurrent | 68,215.50 | 77,219.00 | 84,420.50 | 93,114.44 | 95,818.12 | 106,062.3 |
| Devt. | 4,076.50 | 2,863.80 | 6,293.66 | 7,735.62 | 8,868.27 | 10,068.6 |
| Total | 72,292.00 | 80,082.80 | 90,714.16 | 100,850.06 | 104,686.39 | 116,130.9 |

Source: MOE, 2008/2009 Budget estimates and Economic survey, 2009.

Tana-River District is characterized by high levels of illiteracy and poverty and these constrains locals from supplementing teaching and learning materials. Poor infrastructure and insecurity also characterize this region. Eshiwani (1983) notes that high levels of teacher /pupil ratio has effect on Education quality. Table 1.4 below shows the number of teachers in public schools in this country during the period year 2002-2008. Employment of teachers by the government was frozen and this has also impacted negatively on Education standards.

Table 1.4 Number of teachers From Year 2002-2008.

| Year | 2002 | 2003 | 2006 | 2007 | 2008 |
|-----------------|---------|---------|---------|---------|---------|
| Primary(Public) | 178,037 | 178,622 | 162,990 | 173,157 | 170,592 |

| | | | | | |
|-------------------|--------|--------|--------|--------|--------|
| Secondary(public) | 45,901 | 47,035 | 42,403 | 44,305 | 43,162 |
|-------------------|--------|--------|--------|--------|--------|

Source: MOE, June 2009.

High enrolment attributed to free secondary tuition waive has impacted on teaching and learning materials in schools. According to Education permanent Secretary Professor Ole Kiyai says that FDSE has a great impact on the secondary school enrolment and since its inception in 2008 a total of kshs.43billion has been disbursed to all 5,549 public secondary schools in Kenya. Between 2007-2010 secondary school enrolment rose from 1.03-1.6 million. (Daily Nation, 2010:27).

The number of teachers and available teaching/learning materials in most public secondary schools do not match the enrolment. Table 1.6 below shows enrolment statistics by province and gender in this country from year 2003-2008.

Table 1.5 Enrolment by province and gender from year 2003-2008.

| Year | 2003 | | 2004 | | 2005 | | 2006 | | 2007 | | 2008 | |
|-----------|----------|---------|---------|---------|---------|--------|-----------|---------|-----------|--------|-----------|--------|
| | Boys | Girls | Boys | Girls | Boys | Girls | Boys | Girls | Boys | Girls | Boys | Girls |
| Coast | 27,235 | 22,121 | 31,982 | 24,724 | 25,257 | 23,034 | 31,791 | 26,682 | 35,882 | 29,422 | 38,078 | 29,964 |
| Central | 82,338 | 88,929 | 91,954 | 95,468 | 89,409 | 91,669 | 101,449 | 102,693 | 112280 | 110964 | 128376 | 131641 |
| Eastern | 84,706 | 82,181 | 90,299 | 86,262 | 87,730 | 84,948 | 93,696 | 89,822 | 113904 | 100133 | 124118 | 119844 |
| Nairobi | 11,409 | 8,803 | 19,824 | 13,659 | 15,935 | 12,524 | 16,851 | 12,843 | 26755 | 22973 | 33602 | 25273 |
| Riftvaley | 104,689 | 91,288 | 112,351 | 94,724 | 110,615 | 93,998 | 132,143 | 111,005 | 14449 | 121856 | 174366 | 140919 |
| Western | 53,559 | 55,949 | 60,980 | 58,208 | 62,626 | 54,677 | 61,662 | 58,676 | 78377 | 67320 | 98023 | 84981 |
| Nyanza | 83,319 | 72,351 | 84,723 | 63,274 | 97,201 | 72,443 | 102,702 | 80,280 | 121247 | 85747 | 141762 | 99386 |
| N/Eastern | 10,872 | 1,579 | 3,977 | 1,657 | 4,287 | 1,796 | 5,778 | 2,007 | 6539 | 2458 | 8188 | 3691 |
| Total | 4518,127 | 423,201 | 496,090 | 437,976 | 493,060 | 435089 | 546,072 | 484,008 | 639393 | 540874 | 746513 | 635698 |
| TOTAL | 881,328 | | 934,068 | | 928,149 | | 1,030,080 | | 1,180,267 | | 1,382,211 | |

Source: MOE, Education facts and figures, 2002-2008.

A Summative Evaluation of the secondary school Education curriculum done by MOE (2010) states “Instructional materials are inadequate and some have factual and editorial errors”. According to the 2009 National population and Housing census report there are 311,543 homes or

3.6% of all Kenyan households with a computer (Daily Nation, 2010:27). For more than a decade the outcome of national examinations in the district has not been good hence affecting the transition rate to public universities. Table 1.6 below shows Tana-River District KCSE performance for the last seven years.

Table 1.6 Tana River District KCSE Performance.

| YEAR | MEAN SCORE | MAXIMUM SCORE |
|------|------------|---------------|
| 2002 | 3.34 | 12.0 |
| 2003 | 3.32 | 12.0 |
| 2004 | 3.44 | 12.0 |
| 2005 | 3.33 | 12.0 |
| 2006 | 3.41 | 12.0 |
| 2007 | 3.66 | 12.0 |
| 2008 | 3.54 | 12.0 |

Source: DEOs Office Tana River District.

Apart from the government, Churches, Muslim organizations, individuals, parents and other stakeholders also assist in provision of teaching and learning material and in view of this; the study investigated challenges of teaching and learning materials in public secondary schools in Tana-River District availed by the above parties.

1.2 Statement of the problem.

As evidenced from above, teaching and learning materials in public secondary schools in Tana River District have challenges, and the literature available has proved beyond any reasonable

doubt that teaching and learning materials are essential elements which improve the learners' understanding and grasping of concepts. Ayot and Patel (1987) says that *“quality Education will entail development of the school subjects through properly trained class teachers using appropriate audio – visual aids, textbooks and following communication techniques that impart maximum knowledge and skills to pupil”* This implies that teaching and learning materials are necessary at all levels of Education.

In line with the above, the study sought to investigate challenges of teaching and learning materials in public secondary schools, Tana – River District. The study sought to know the impact of challenges of essential teaching and learning materials on teachers and students. The level of availability of materials in public secondary schools in Tana-River District was of great concern to this study, in relation to how it affects teaching and learning process. The transition rate to public universities for the last seven years was zero, and in connection with this, the study sought to know the contribution of teaching and learning materials to this situation.

1.3 Purpose of the study.

Teaching and learning materials has a major impact on education outcome since they influence the learning environment. Moreover, a major part of the success of a good school depends on how well teaching and learning material are sourced, utilized, managed replaced and maintained. Therefore, the purpose of the study was to investigate challenges of teaching and learning materials in relation to the above mentioned.

1.4 Objectives of the study.

Below were the objectives the researcher intended to accomplish;

1. Find out challenges of inadequate teaching and learning material in public secondary schools in Tana – River District.
2. Determine ways in which public secondary schools in Tana River District acquire teaching and learning materials.
3. Investigate how teaching and learning materials are maintained and replaced in public secondary schools in Tana River District.
4. Assess whether teaching and learning materials in public secondary schools are adequate.
5. Establish ways and means of improving existing teaching and learning materials in schools.

1.5 Research questions.

The researcher intended to answer the following research question after the study;

1. What are the difficulties teachers and students face due to inadequate teaching and learning materials?
2. Which methods do school principals and students use to acquire teaching and learning material?
3. How are teaching and learning materials maintained and replaced in public secondary schools in Tana–River District?
4. What is the status of teaching and learning materials in public secondary schools?
5. Which recommendations are necessary for improving existing teaching and learning materials?

1.6 Significance of the study.

The outcome of the proposed study will have significance in that it will contribute to the advancement of knowledge in the area of teaching and learning materials and the impact they have on learning process. Practically it will assist in giving suggestions on how challenges faced in relation to inadequacy of teaching and learning materials can be resolved. The research findings will draw attention of the Ministry Education and KIE to problems encountered by teachers in

acquiring teaching and learning materials and solutions will be sought. Teachers will also be challenged to use locally available teaching and learning materials and even improvise non – existent ones and hence increasing teacher’s knowledge in the area of teaching and learning materials.

The findings will also assist educational planners in developing budgets for acquiring more teaching and learning materials. Finally, the study will form a base on which others can develop their studies (Orodho, 2005).

1.7 Limitations.

The limitations of the proposed study were mainly financial and time. Due to financial and time Constraints involved, the researcher covered only Tana – River District. There are also logistical problems and inaccessibility to some regions hence the study will be confined to some schools in Tana - River District. The sample may not necessarily be a good representation of all secondary schools in the Country. This is because Tana –River is one out of forty seven counties in Kenya, all of which have different, varied factors: environmental, cultural and socio-economic.

1.8 Delimitations.

The researcher delimited himself to public Secondary schools in Tana – River District. Only those in session in public secondary schools were be sampled. Teachers and students who were absent were not included in the sample. Those who had completed school or had done KCSE were not included. The study was confined to challenges of inadequate teaching and learning materials in public secondary school, in Tana – River District.

1.9 Assumptions.

The following assumptions were made;

1. Respondents approached will be co –operative and provide reliable responses.
2. There are challenges of inadequate teaching and learning materials.
3. Teachers and learners are aware of teaching and learning materials.
4. Sampled schools for the study are representative of all secondary schools in Tana River District.
5. Use of teaching and learning materials improves quality and standards.
6. That the presence of the researcher in the classroom will not interfere with the lesson.

1.10 Theoretical frame work.

Resource based theory in education.

The fundamental principle of resource based theory is that the basis for a competitive advantage of a firm lies primarily in the application of the bundle of valuable resources at the firm's disposal. Based on the empirical statement above, resource based theory provides us with the understanding that certain unique existing resources will result in superior performance and ultimately build a competitive advantage. There is a vital need to modify and develop resources in order to encounter future market competition. An organization should exploit existing business opportunities using present resource while generating and developing a new set of resources to sustain its competitiveness in future market environment hence an organization should be engaged in resource management and development (Chaharbagh, and Lynch (1999)).

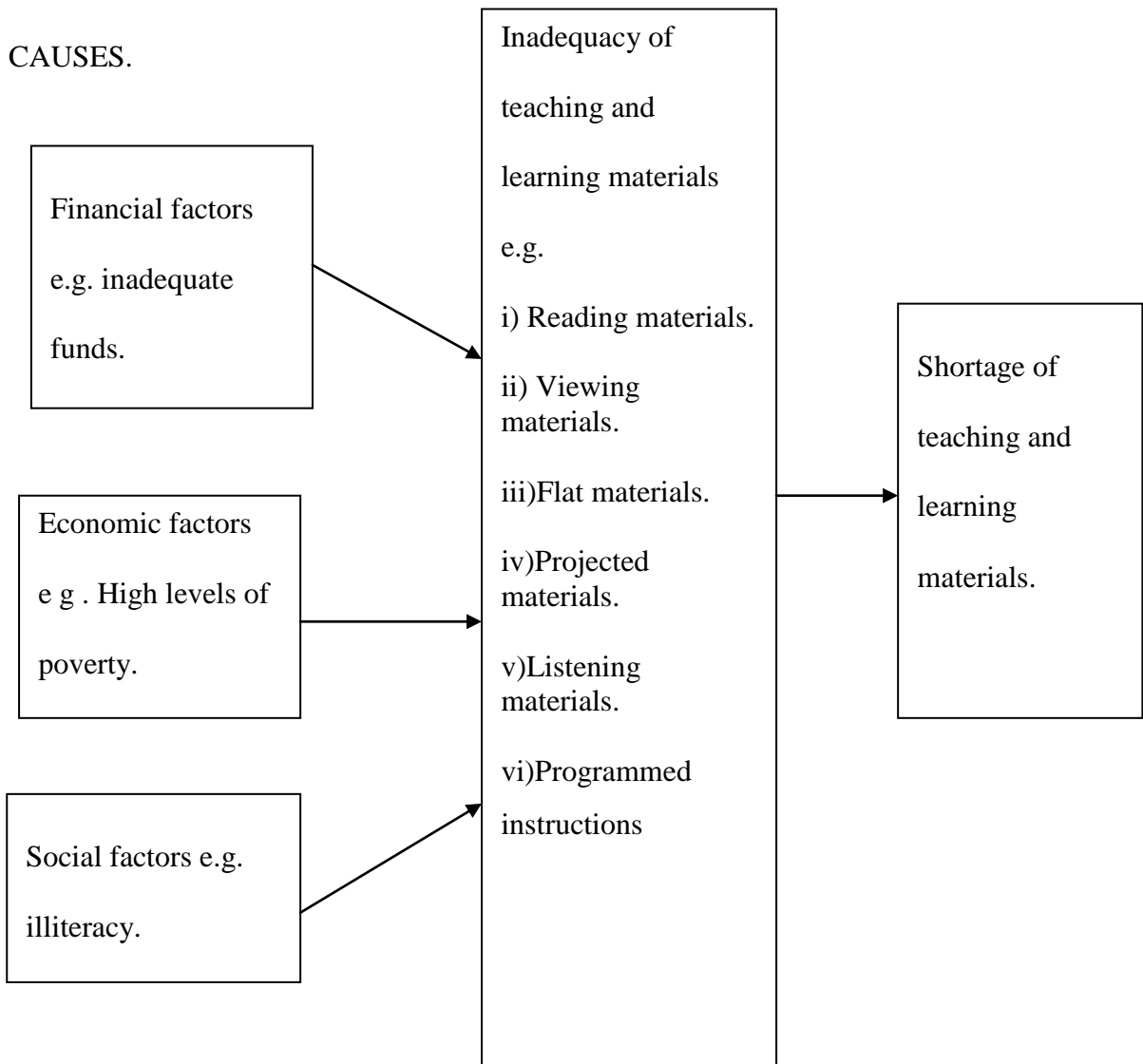
In order to sustain the competitive advantage, it's crucial to develop resources that will strengthen their ability to continue with the superior performance. Any industry or market reflects high uncertainty and in order to survive and stay ahead of competition new resources become highly necessary. In Educational settings, teaching and learning materials influence learning environment hence educational output. To attain qualitative aspects of education, teaching and learning materials must be utilized and any problems hindering attainment of that goal should be solved for maximum gain. The use of multiple teaching and learning materials to cater for various sensory

organs in teaching and learning are paramount. This will lead to better understanding which will consequently result in good performance and therefore quality Educational Output. Modifying and developing new teaching and learning materials makes the cognitive, affective and psychomotor domain, be catered for in the teaching and learning process.

At any given time, resources are always scarce, and therefore the ones which are there should be properly maintained to avoid high costs of buying new ones each and every time. Improvisation and use of locally available teaching and learning materials in the school vicinity should be utilized to supplement the ones which are already in the school. In this manner, internal efficiency will be achieved, school enrolment will be high and therefore there will be no under-utilization of teaching and learning materials. Likewise, due to quality teaching, the school will remain attractive to both learners and parents. Dewey (1938) is quoted by Odege (2002) saying “*Child-Centered Education involves learning by doing. A child learns best by activity, imitating drawings, collecting and observing. The main emphasis by these philosophers was the use of resources catering for all sensory organs of the students*”.

Financial, Economic and social factors are responsible for the inadequacy of teaching and learning materials such as viewing and reading materials among others in our Educational institutions. This makes them scarce and therefore cannot match with the increasing Enrolment due to the ever growing human population in our country hence contributing to low Educational attainment.

Figure 1.1 Conceptual Framework.



Source: Researcher 2010.

Figure 1.11 above represents factors responsible for the inadequacy of teaching and learning materials in public secondary schools in Tana-River district. According to Mugenda and Mugenda (2003), conceptual frame work involves forming an idea about relationship between variables in the study showing relationship graphically or diagrammatically. The above shows causes of inadequate teaching and learning materials, which finally leads to shortage hence affecting Quality and standards of Education.

1.12 Operational definition of terms.

- 1. Tana River District-** Refers to the original District after independence measuring 38,446 km², which is currently, divided into three districts namely Tana-River, Tana-Delta and Tana-North.
- 2. Resource** – refers to school possessions, assets and means to achieve objectives.
- 3. School** – place with more than ten learners getting instruction under the guidance of the teacher.
- 4. Challenges** – problems which hinder, hold back, slow down or impede progress of certain actions.
- 5. Public secondary schools** – refers to secondary schools which are state sponsored.
- 6. Inadequate-** A situation whereby the ratio of teaching and learning materials/ items to the students' enrolment is not 1:1
- 7. Quality grade-** scoring B and above which makes someone to access public university Admission.
- 8. Learning environment-** Physical conditions in the classroom that include resources, facilities and class size that to some extent influence learning process.
- 9. Performance-** Refers to successful accomplishment in particular area summarized in ranking of grades, scores or descriptive commentary.

CHAPTER TWO.

LITERATURE REVIEW.

2.0 Introduction.

This chapter reviews related studies conducted on challenges of teaching and learning materials. Issues discussed include, relevance of materials to the teaching and learning process, maintenance, improvisation of teaching and learning materials and difficulties encountered due to inadequacy of materials in schools.

2.1 Literature sources.

Sources of literature review included;

1. Reputable daily newspapers
2. Published work.
3. Journals.
4. Research papers.
5. Thesis and dissertations.

2.2 Relevance of teaching and learning materials.

The 2009 census report entitled Free education lures million to schools says “Education is a key pillar towards the realization of vision 2030 and the importance and relevance of education is determined by its ability to produce manpower relevant to the economy”(Daily Nation ,2010:26)

The human capital theory lays emphasis on investment in Education and training which in turn yield both pecuniary and non-pecuniary benefits to the individual and the society at large, and literature available supports the use of teaching and learning material in schools for the realization of the above mentioned. They make learning become meaningful and abstract concepts are simplified and made real by use of materials. Millennium development goals, which are a set of quantified and time bound targets bound to reducing poverty by 2015, is to be achieved among other ways through achieving universal primary Education by 2015 and also attainment of Gender equality and empowerment of women through provision of Quality Education. These two goals

are important in the sense that they recognize the crucial role played by Education in the society. Lauwerys (1969) says “*A human being is not in the proper sense till he is educated.*”

According to the Ministry of Education (2006), manipulation of teaching and learning materials helps to convey meaning and will serve a motivational force to awaken the interest of learners. Walklin (1982) avers “*To be successful in classroom, aids must supplement the teacher’s work and should be flexible in their application*”. One necessary skill for the teacher within the context of lifelong Education is the capacity to make a broad range of teaching and learning material. This can foster pupils’ ability to learn without the supervision or the structure of the formal schooling. The above is supported by Shipley (1968) who says “*The general objective for use of audio-visual materials is to make learning more meaning ful*”.

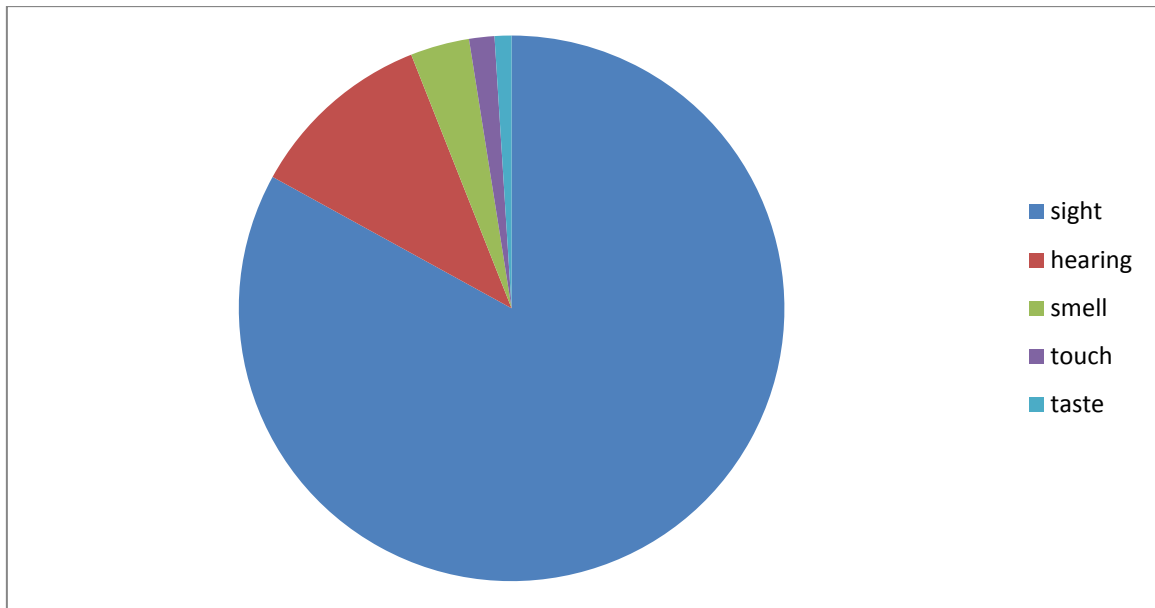
Twoli (2007) notes that teaching materials enhance standard participation in class for effective learning. Patel and Mukwa (1993) notes that teaching and learning should be used as an integral part of learning activity in order to achieve the highest level of understanding within the concept of the subject matter relationship but they should not replace the teacher. In support of high demand for teaching and learning materials ,Meredith Unwin and Mc Alesee (1978) reckoned that ‘*Great learning results, when media is integrated into the traditional learning process, that equal amount of learning are often accomplished in less time. Use of education....Media facilitates learning and teaching*’. A point to mention here is, use of education technology in teaching and learning, help in delivery of immediate up to date education materials. Radio, print and television media play a fundamental role in provision of education materials to learners. Use of ICT facilitates communication and interaction in teaching and learning materials. Butcher Neil(1996) says ‘*proper resources mobilization, utilization and making ICT a priority, will shift use of resources from unproductive cultural practices and increase level of education .This will in the long run lead to social economic development*’.

Most educators have come to consider the eyes as the most important gate way to the minds. Sounders (1974) argued that *‘visual rouses interest, gives an accurate impression, help memory stimulate the imagination and provide a shared experience’*. In support of Sounders ideas Addo (1960) reports that when a teacher makes use of chalk board to provide a summary of the lesson, he is making use of the visual sense which is so vital in learning, the entire lesson having reached the students mind through the ears.

Jowi and Njogah (1981) reckons that learning aids are vital for any effective teaching and learning to take place. As concerns the use of sensory organ, they say *“For proper communication and learning, students wants certain media available and used not only because media are interesting and make school time pass more quickly but because when various senses are used in teaching and learning, there will be greater perception, understanding, reinforcement and hence easy retention of the subject matter.”*

Getz (1972) cites Commenius as saying that..... the sense of hearing should always be conjoined with that of sight and the tongue..... And in combination with the hand. The subjects taught should be pictorially illustrated and thus develop imagination by the help of the eye. Teaching and learning materials should be used as an integral part in learning activity in order to achieve the highest level of understanding within the context. Figure 2.1 below shows what is retained after teaching and learning through various sensory organs.

Figure 2.1 Retention after learning through various sensory organs.



Source: Patel 2001.

A study conducted by Servaij and Varga (971) found out that a well designed material aid can to a certain extent protect unspoilt creativity of the pupil from adult knowledge which has become a little stable by constant repetition and manipulation. In an attempt to highlight the importance of experiential approach to teaching and learning ,wittich and shuller (1973) summarizes the work of commenius ,Pestalozzi, harbert and Froebel as follows “ The most effective way to help students to become informed about their social and natural environment is to provide for them learning experiences which are real or life like and which are available to them for first hand scrutiny ,questioning and cognition.”

2.3 Maintenance and improvisation of teaching and learning materials.

The newly promulgated Kenyan constitution, chapter 4 says, “Every child has the right to free and compulsory basic Education and the state shall take measures to ensure that the youth have access to relevant Education”. In response to this the governments have initiated the issue of contractual teachers to ease the work load in schools and improve the quality of Education provided in our Institutions. Some of the key challenges facing free secondary Education include high rate of wear and tear of text books and particularly in rural areas, and they need to be

maintained if the government policy of materials lasting for four years is to be achieved (Daily Nation,2010:27). Literature available suggests the need for proper maintenance of teaching and learning materials resources for future use. Saunders (1974) advised teachers that if they store their pictures carefully, they can use them repeatedly and that in local production the sources of Available materials are virtually endless. Proper maintenance will also lead to cutting down of costs related to acquiring of new teaching and learning materials. Such resources will be channeled to other areas for the learners and the schools' benefit. Learning environment devoid of resources utilization, learners' achievement is low.

Sumner (1965) says that models require storage rooms and should be protected from dust where they are stored. Some schools lack storage rooms for teaching and learning aids and this is a setback. The ones which have them are poorly maintained, poorly ventilated, lack enough spaces and vital physical facilities such as chairs/desks are not available. The study is an investigation of how such materials are maintained and incase of shortage are materials improvised in order to demystify abstract concepts.

2.4 Difficulties due to inadequate teaching and learning materials.

Wernerfelt (1984) comments that if resources are limited there is varied implication on teaching and learning. Where people have restricted access to resources, the possibilities of independent studies are reduced; therefore quality and standards will be wanting. The world Education Forum in Dakar (2000) noted that more than one third of world secondary schools have no access to new skills and technologies that could help in process of acquisition of knowledge. This is the situation in Kenya. The report adds that where resources are limited, the range of work is reduced. The role of ICT in education cannot be under estimated. ICT makes learning interesting and motivates learners. Industrialization will be achieved once learners adopt/undertakes course which are scientific and technological oriented; and this can only be possible if ICT is integrated in teaching

and learning process. Various authors have cited problems which are related to this area .Inadequate ICT infrastructure in schools limits the teachers and learners to embrace contemporary forms of knowledge acquisition. Digolo (1986) did a research on availability of community resources in primary school and his study revealed that there was inadequacy of teaching and learning material resources. He is supported by the works of Khisa (1995) who did a study on learning resources in Nairobi primary schools and found that most of the books used were outdated. They were published more than ten years ago.

Misoy (1987) did study on instrumental materials used for teaching geography in secondary schools, in Kericho District and she found out that many schools had inadequate textbooks, reference books, maps, globes, wall charts, and pictures and even lacked facilities such as projectors. Lack of textbooks and other teaching and learning materials and unprepared teachers who taught without schemes of work and lesson plans were some of the major problems postulated by Shiundu (1980) and Malusu (1985) in teaching of CRE in Kenya primary schools which impacted on quality.

2.5 Summary and gap analysis.

The chapter reviewed issues related to challenges of teaching and learning materials with particular emphasis on relevance of teaching and learning materials, level of adequacy of the said materials, maintenance and difficulties posed by inadequacy brought about by increased enrolment and even effects of 2007 post election violence that led to loss of vital instructional materials. These materials create a conducive learning environment. In Tana-River district challenges of teaching and learning materials have not been reviewed scholarly and the researcher found it a ground that needs attention bearing in mind low education attainment as seen in poor KCSE performance for the last seven Years.

CHAPTER THREE.

RESEARCH DESIGN AND METHODOLOGY.

3.0 Introduction.

This chapter presents the study design and the methodology used in gathering the required information needed for the purpose of completing the study. It describes research design, target population, sampling strategy, and data collection instruments, procedure and data analysis criteria.

3.1 Research design.

The study adopted exploratory approach using descriptive survey design. This is because there were a number of answers to the same question by various respondents. The emphasis was on answers to one question by all respondents and the design has easier means of obtaining information. Bog and Gall (1989) notes that descriptive survey research is intended to produce statistical information about aspects of education that interest policy makers and educationists. This study takes little time to carry out and most importantly, its cost effective. Mugenda (1999) observes that descriptive methods are widely used to obtain data useful in evaluating present practices and providing basis for decision.

3.2 Variables.

In this study the teaching and learning material resources were the independent variable and the school/education output was the dependent variable. The quality of the learners depends on the quality of the education that they had received in the schooling system and this could only be realized by utilization of teaching and learning material resources which enhances understanding and makes the teacher's work easier.

3.3 Location of study.

The study confined itself to Tana River District. The researcher was familiar with the District and also works there hence convenient in terms of time on the part of researcher. It covers an area of 38,446km², and is approximately 500kms from Nairobi, the capital city of Kenya. It lies between latitude 0⁰ and 3⁰s and longitude 39⁰ to 41⁰E. The District is in arid region and temperatures range between 28⁰ to 38⁰c. Rainfall in the region is unreliable and therefore this cannot support crop farming without irrigation and therefore this makes nomadic pastoralism the main economic activity among the indigenous people. River Tana is the major geographical feature and there is limited farming along it.

Infrastructure is poor and historically it was part of Northern Frontier District and sometimes tribal clashes are evidenced in the region and a case in point is in 1997 and 2002. Poverty and illiteracy levels are high which in turn constrains the locals from supplementing teaching and learning materials in schools. There are Bura and Hola irrigation schemes which are on and off.

The neighbouring districts are: -

1. Isiolo District to the North,
2. Garissa District to North east
3. Lamu District to the East
4. Malindi District to the South east
5. Taita District to the South
6. Kitui District to the West
7. Mwingi District to the North West

3.4 Target population.

In this study, ten public secondary schools were targeted. The students population was 3,500 and the number of teachers was 126. The schools were as follows;

1. Madogo Mixed Day Boarding Secondary School.

2. Hirimani Mixed Day Boarding Secondary School.
3. Mau Mau Girls Boarding Secondary School.
4. Hola Boys Boarding Secondary School.
5. Wenje Mixed Day Secondary School.
6. Garsen Mixed Day Secondary School.
7. Tarasaa Mixed Day and Boarding Secondary School.
8. Gadeni Mixed Day and Boarding Secondary School.
9. Kipini Mixed Day and Boarding Secondary School.
10. Ngao Girls Boarding Secondary School.

3.4.1 Sampling techniques and sample size.

For the purpose of this study attempts were made to select a sample that was representative of the population. The schools were purposively selected because of their gender nature and because of being either day or boarding for the essence of being truly representative of the situation on the ground and then random sampling was used to determine respondents. All are in rural area and semi-desert region of Tana River District

3.4.2 Sample size.

Sampling was done for generalizing purposes since it was not possible to reach the whole population.

(A) Schools.

The study purposively selected five secondary schools from the population of ten schools in Tana-River District. This represented 50% of schools. Simple random sampling was then applied to come up with 2 mixed day and boarding schools, 1 girls boarding school, 1 mixed day secondary school and the only boys boarding schools qualified automatically. These schools were A, B, C, D and E. Piloting was done in school F.

(B) Principals.

The principals of the five sampled schools were to form part of the sample but one of them was not available and therefore four principals were used. They accounted 40% of the head teachers.

(C) Teachers.

The HODs of the five sampled schools were anticipated to be part of the sample but one of them due to factors beyond his control could not be reached .These HODs were in the following areas; Mathematics, Languages, Sciences, Humanities and Technical. Each school had five HODs. In total they were 24 representing 18.3% of the teachers in the district.

(D) Students.

Ninety seven students from forms three and four were used. In this case stratified and interval random sampling was used to select them. To get twenty students from each school in form three and four, class registers were used and the formula below was applied.

$$\text{Number of students in Form 3/10} = K^{\text{th}}$$

Every k^{th} student in the class register was picked. This method applied also to the form fours. Three students fell sick during the day of administering the questionnaire and the study ended up with 97 instead of 100.They comprised 2.77% of all students in the District.

(E)Laboratory Technicians.

The laboratory technicians of the 5 sampled schools were to be part of the sample but one of them was on leave and the researcher gave questionnaire to four technicians. They accounted for 40% in the District.

(F) Quality assurance and standard officers.

The larger Tana –River District has 3 DQASOs. Two were selected using lottery method. They represented 66.6% of the DQASO in the District.

(G) Parent representative.

The parent representatives of the form three or form four of the five sampled schools formed part of the sample. Simple random sampling of tossing a coin was undertaken to decide between the form three and four parent representative. In total they were five.

Table 3.1 Sampling grid.

| Respondents | N | % |
|--------------------------------|-----|------|
| Head teachers | 4 | 2.9 |
| Teachers | 24 | 17.6 |
| Parents representative | 5 | 3.7 |
| Students | 97 | 71.4 |
| Quality and assurance officers | 2 | 1.5 |
| Laboratory technicians | 4 | 2.9 |
| Totals | 136 | 100 |

Source: Researcher, 2010.

3.5 Data collection instruments.

The researcher used questionnaires, interviews and observation .A questionnaire enables one to collect information from a big number of respondents within a short period of time. It is the most commonly used method when respondents can be reached and are willing to co-operate and descriptive data are typically collected through administering of questionnaires (Gay ,1992).

3.5.1 Principals questionnaire.

The Principal is the executive officer in the school and implements government policies in the

School. They also ensure that the curriculum is well implemented and therefore they were in a position of commenting about teaching and learning materials in schools. Their Questionnaire is attached as APPENDIX A.

3.5.2 HODs questionnaire.

The HODs ensure that the curriculum is implemented in their areas of specialization. They are well versed with teaching and learning materials in their departments. They also present their departmental requirements to the tender committee.

Questionnaire is attached as APPENDIX B.

3.5.3 Laboratory technician questionnaire.

They work hand in hand with the HOD sciences. They are the experts in this area and they easily commented on crucial chemicals and equipments lacking as well as problems they face in the laboratory as a result of inadequacy of teaching and learning materials.

Questionnaire is attached as APPENDIX C.

3.5.4 Student questionnaire.

They can be equated to raw materials in an industry. They determine whether Educational Output has been achieved or not. They are in a position of commenting about teaching and learning materials they are lacking and the impact they have on their studies.

Questionnaire is attached as APPENDIX D.

3.5.5 Interview schedules for DQASOs.

DQASO are Ministry of Education agents who are in charge of Quality and standards. They carry Out assessment on regular basis and they are in a position of commenting on the status of teaching and learning materials in schools in their area of jurisdiction. The researcher interviewed the

DQASO because they are busy hence lack time for filling Questionnaire. This is attached as APPENDIX E.

3.5.6 Interview schedule for the parent representative.

Parents cannot be excluded from teaching and learning process because they play a vital role. Like in form three and four parent are supposed to buy set books for their sons and daughters. During schools holidays they take their children to various sites which are of educational importance. They were interviewed because of their level of education and to get clarity of the responses. This is attached as APPENDIX F.

3.5.7 Researchers observation schedule.

Certain information was collected by the researcher by mere observation.

This is attached as APPENDIX G.

3.6 Piloting of research instruments.

Kerlinger (1964) advises that an instrument should measure what it purports to measure and, in order to test the reliability of the research instruments, piloting was done at school F. Research instruments were given to the principal, five HODs , the laboratory technician and ten students in Form three and four. This helped in removing errors and weaknesses in them.

3.6.1 Validity of the instruments.

Validity is the degree to which a test measures what it is supposed to measure, Gay (1992).Content validity was assessed by seeking expert judgment and discussion with the two supervisors. Orodho (2005) says “*Content validity of research instruments will be determined by panel of three judges competent in the area being investigated.*”

3.6.2 Reliability of the instruments.

Gay (1992) says “Reliability of the instruments concerns the degree to which a particular measuring procedure, instruments gives similar results over a number of repeated trials”. Questionnaires were given to the piloting group and responses were analysed after which two week period was allowed to pass before the same treatment was applied to the same respondents. After test –retest, the results were subjected to spearman coefficient of correlation in order to come up with a coefficient to show whether the items in the instrument of data collection were reliable. The value gotten was 0.6 and the items were regarded as reliable. The formula used was;

$$\text{Rho } (r_s) = \left\{ 1 - \frac{(6\sum d_i^2)}{n(n^2-1)} \right\}$$

Where rho(r_s) = Spearman’s coefficient of correlation.

d_i = difference between ranks of pairs of the two variable.

n = the number of pairs of observation.

3.7 Data collection procedure.

The researcher sought permission from the ministry of Education, Science and Technology to conduct research from teachers, students and DQASOs in Tana River District. There was recruitment of five research assistants who were teachers from each of the five sampled schools. This was done to ensure smooth data collection and establish good rapport with the respondents. They were inducted for three hours to understand research problem, methodology and the instruments. The respondents were assured confidentiality of the information that it was for study purposes only. Questionnaires were distributed to the respondents at 3.00 pm and interview was done at 10.00 am during tea time. Filled questionnaires were edited and checked by the researcher to see whether they were properly answered before analysis.

3.8 Data analysis and presentation.

Responses from questionnaires and interview schedules were organized according to pertinent aspects of the study. Collected data was both qualitative and quantitative. Qualitative was from open ended while Quantitative was from closed ended questions.

Qualitative data from open ended questions was coded manually using code book to enable quantitative analysis. The quantitative analysis made use of statistical package of social sciences (SPSS) to give descriptive statistics such as mean, mode, frequency and percentages. Analyzed data was tabulated using graphs, tables and pie charts.

3.9 Logistical, Ethical and Human consideration.

For successful completion of conducting this study, the researcher undertook certain logistical and ethical issues. In this case pre-field work logistics involved developing search tools. The researcher drew work plan to ensure no time wastage. Budget was also drawn to enable sourcing of finances before embarking on the study. Permission was requested from the school administration concerning distributing questionnaires to the staff and the students. The new Kenyan constitution chapter 4 says “Every citizen has the right of access to information held by another person”. In the same vein every has the right to privacy which includes the right not to have the privacy of their communication infringed and therefore the respondents were convinced that the information sought from them was confidential and for study purposes only. After questionnaires were filled they were collected, counted and coded.

CHAPTER FOUR.

DATA PRESENTATION, ANALYSIS AND INTERPRETATION.

4.0 Introduction.

The study was about challenges of teaching and learning materials in public secondary schools, Tana-River District. The chapter is divided into two sections. Section one deals with demographic data of the respondents and the second section deals with the results of the study which was organised along research questions. Questions were posed and the data relating to that research question was presented. The following Research questions were the principal guiding factors in the data analysis which was followed by summary statement of the conclusion of the study in regard to the question.

- i What are the difficulties teachers and students face due to inadequate teaching and learning materials.
- ii Which methods are used to acquire teaching and learning materials?
- iii How are teaching and learning materials maintained and replaced in public secondary
- iv What is the status of teaching and learning materials?
- v Which recommendations are necessary for improving teaching and learning materials?

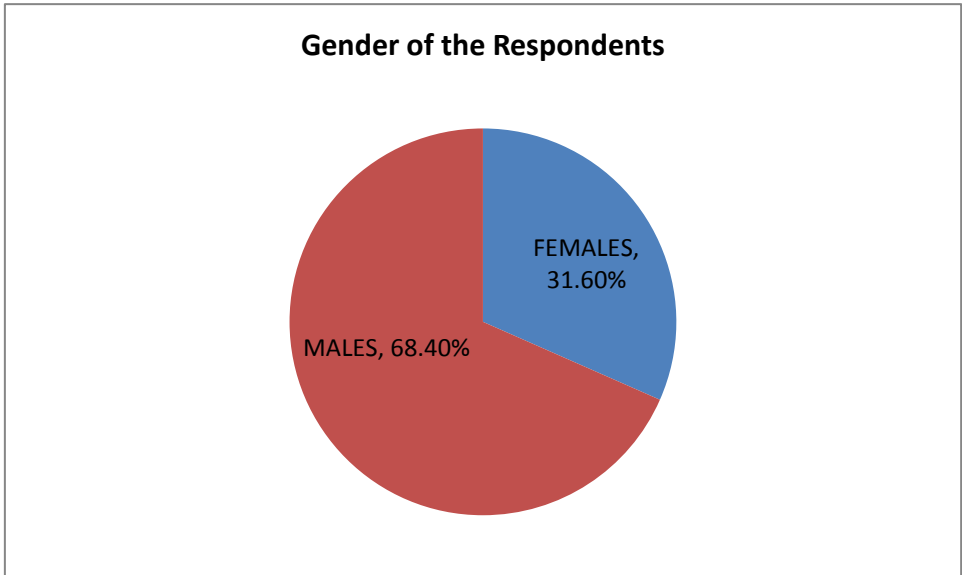
Four principals, Twenty four HODs, Ninety seven students and Four Laboratory Technicians were given Questionnaires. Two DQASOs and five parent representatives were interviewed and there was observation schedule for the researcher.

4.1 Demographic data of study participants.

The respondent's demographic data is presented in the following figures;

Figure 4.1 Gender of the respondents. (n=136)

The study sought to know the composition by gender of the respondents and the figure 4.1 below shows the findings.

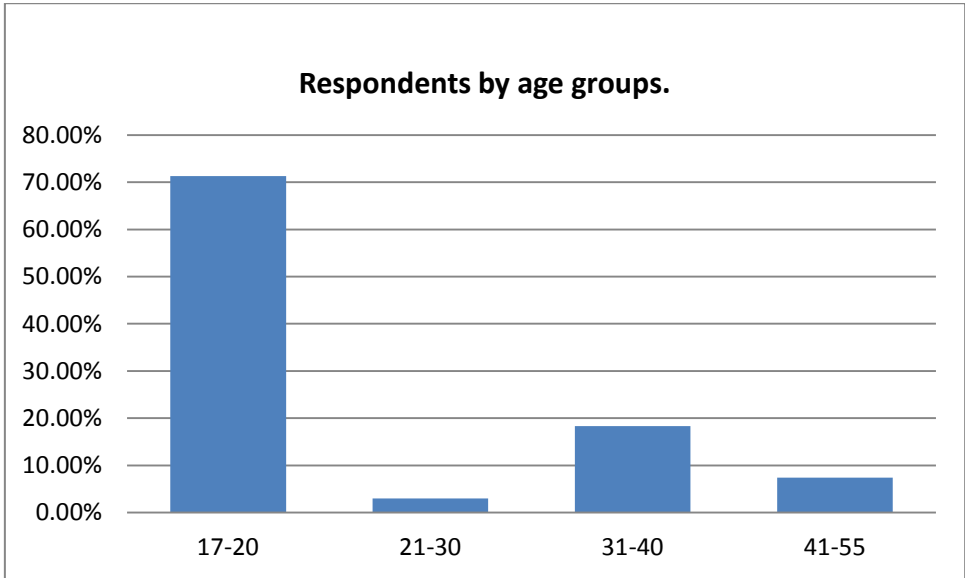


Source: All questionnaires and interview schedules.

Figure 4.1 above, shows that 31.60% of the respondents were females and 68.40% were males.

Figure 4.2 Age of the respondents. (n=136).

The figure 4.2 below shows ages of the study respondents.

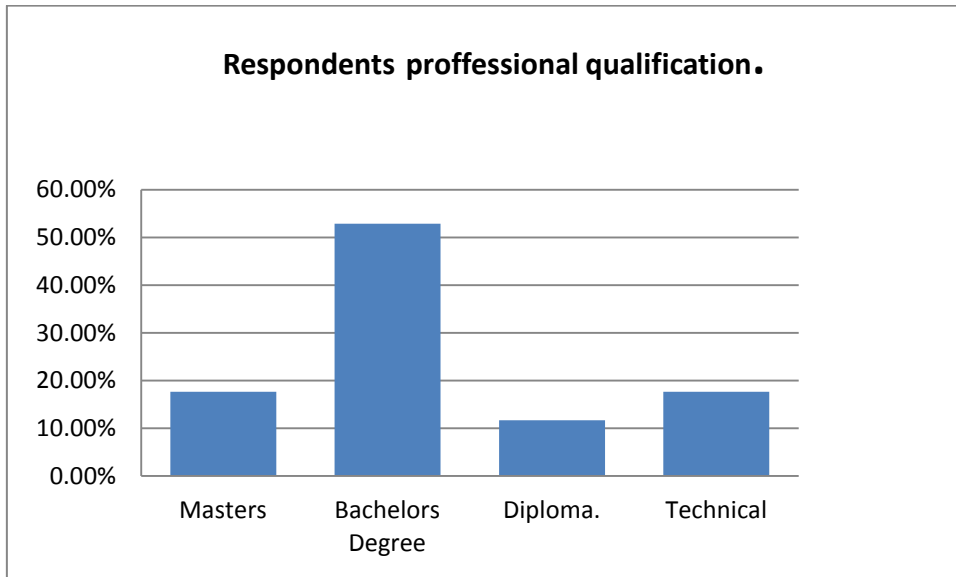


Source: Questionnaires and interview schedules.

The figure 4.2 above shows that, respondents by age groups were as follows 41-55 years were 10 (7.4%), 31-40 years were 25(18.3%), 21-30 years were (3.0%) and 17-20 years were 97 (71.3%) being the highest in number.

Figure 4.3 Professional qualification of the Respondents.(n=34).

The study was also interested in knowing the professional qualification of the respondents and the findings are in the figure 4.3 below.

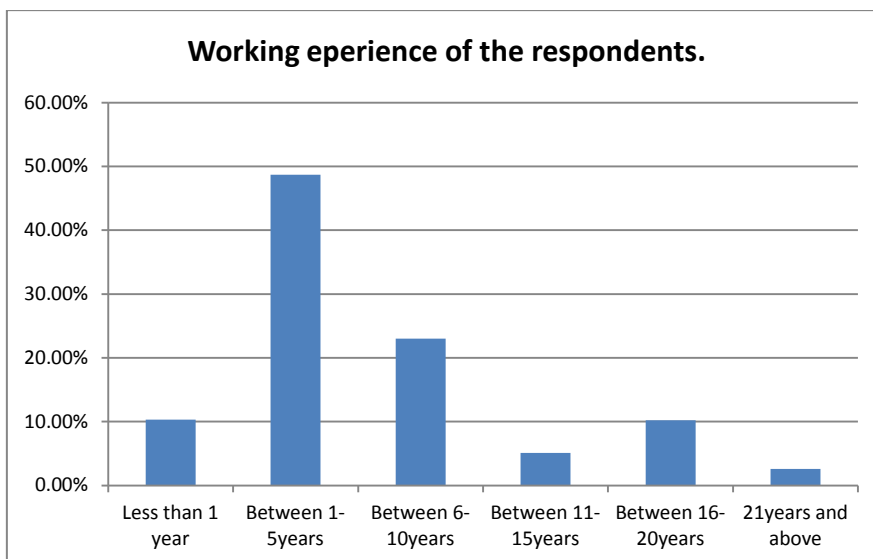


Source: HODs, Technicians, Principals questionnaires and DQASOs’ interview schedule.

Figure 4.3 above shows that 6 respondents (17.7%) had masters and Technical in each case, 4 (11.7%) had Diploma and 18 (52.9%) had Bachelors Degree which was the highest.

Figure 4.4 working experience of the Respondents.(n=34).

The working experience of the respondents was of concern to this study and the findings are as shown in figure 4.4 below.



Source: HODs, Technicians, Principals questionnaires, DQASOs and Parent schedules.

According to figure 4.4 above, the working experience 4 (10.3%) Respondents had less than one year, 9 (23.0%) had worked between 6-10 years, 2 (5.1%) had worked 11-15 years, 4(10.29%) had an experience of 16-20 years, 1(2.6%) had 21 years and above, while 19 (48.7%) had worked for 1-5years which was the highest. Kiragu (1986) points out that the more training a teacher has received, the better the achievement of his students.

4.2 Challenges due to inadequacy. (n=6.)

The first research question sought to find out challenges due to inadequate teaching and learning materials. The study revealed the following as the challenges due to inadequacy of teaching and learning materials. Below are the challenges.

T1 -Ineffective teaching and learning.

T2- Poor performance.

Table 4.1 challenges due to inadequacy. (n=6)

| Challenges | Frequency | % |
|------------|-----------|-----|
| T1 | 6 | 100 |
| T2 | 3 | 50 |

Source: Principals questionnaires and DQASOs schedule.

According to Table 4.1 above, 6(100%) of the respondents said, due to inadequacy there is ineffective teaching and learning while 3(50%) said inadequacy results in poor performance.

4.2.1 Lacking teaching and learning materials.

World education forum (2000) notes that more than 1/3 of world secondary schools have no access to new skills and technologies that could help in acquisition of knowledge. The study sought to know what the schools were lacking. Below were the findings.

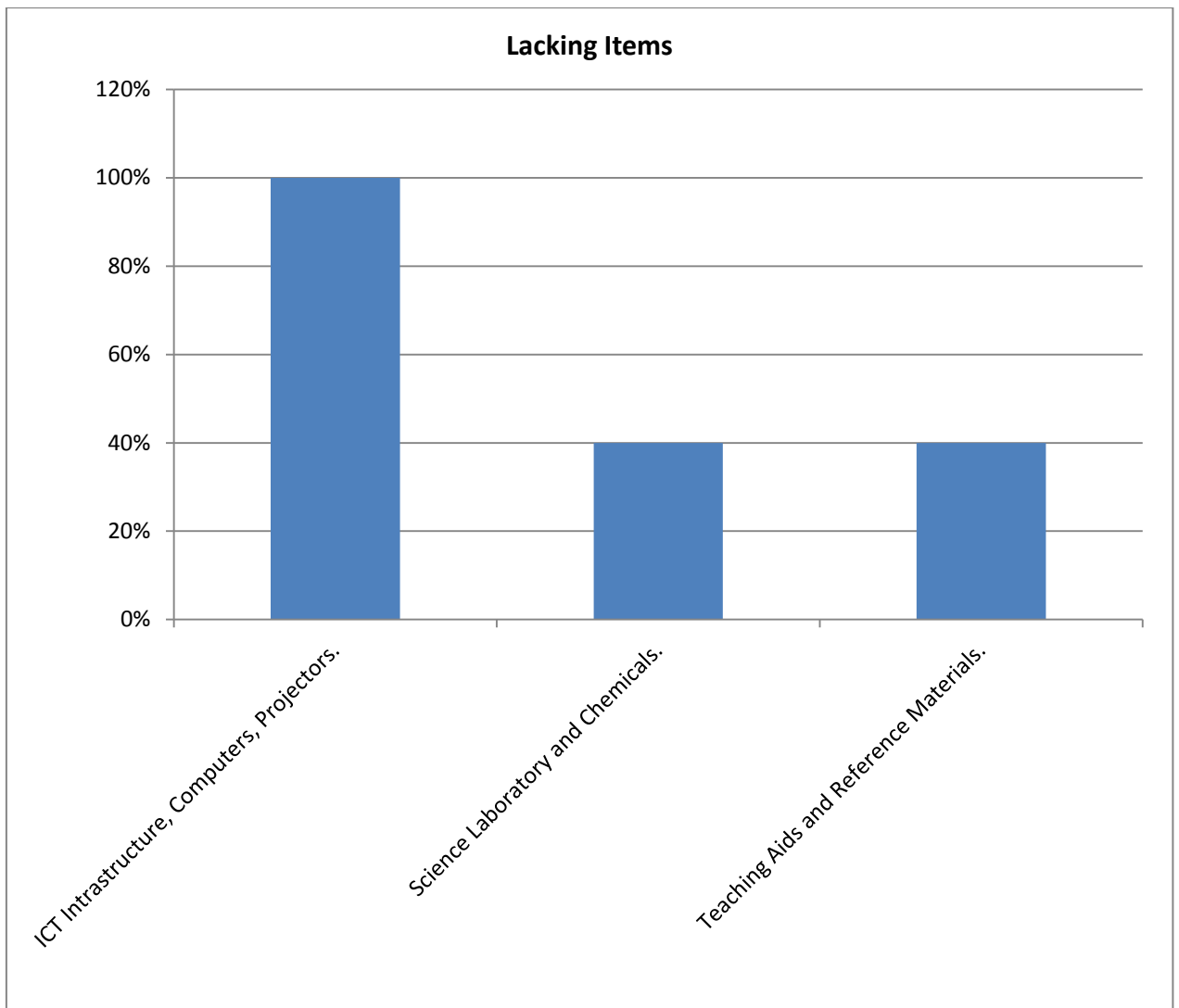
M1- ICT Infrastructure, computers, projectors.

M2- Science laboratory and chemicals.

M3- Teaching Aids and reference materials.

Figure 4.5 lacking items.

The study sought to know essential teaching and learning materials which are lacking in the institutions and the findings are as shown in figure 4.5 below.

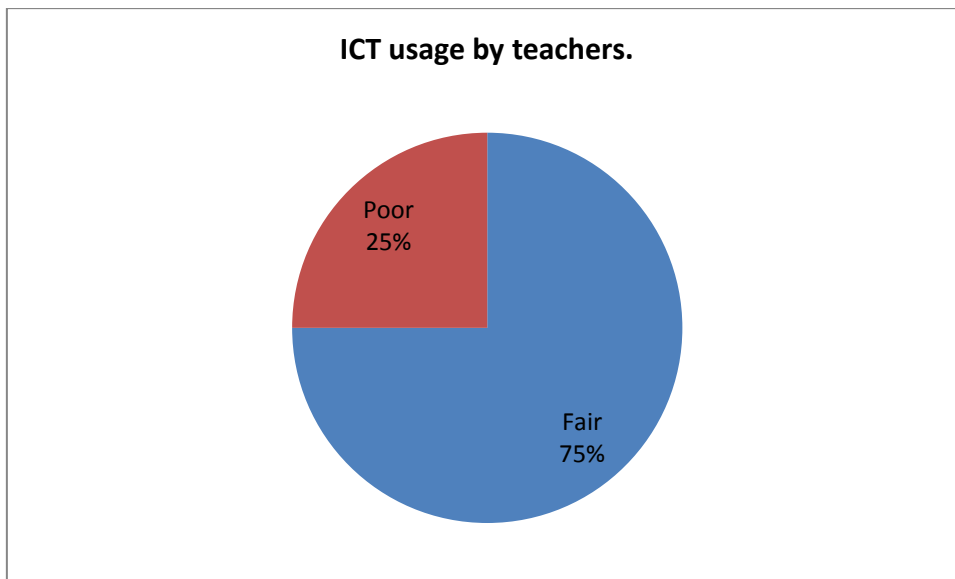


Source: Principals questionnaires and Researcher's observation schedules.

According to the Figure 4.5 above, the study revealed that all respondents 5(100%) said schools are lacking ICT infrastructure, computers and projectors while 2(40%) commented that they are lacking science chemicals, reference materials and teaching aids. Information technology makes learning and teaching interesting. The study also sought to know the usage of ICT by teachers in their work.

Figure 4.6 ICT usage by teachers=4.

The study sought to know whether teacher use ICT in teaching and learning process. The finding are as shown in figure 4.6 below.



Source: Principals questionnaires.

Figure 4.6 above shows that 3(75%) of the respondents said that teachers were fairly rated in terms of ICT utilization and 1 (25%) of the respondents rated teachers poorly. The statistics above shows that usage of ICT in teaching and learning process was minimal. This was in line with summative evaluation done by MOE (2010) which says ‘‘Inadequate ICT Infrastructure in schools limits teachers and learners to embrace contemporary forms of knowledge acquisition’’

4.2.2 Problems associated with acquisition of teaching and learning materials. (n=24).

According to the respondents, the following were the problems associated with acquisition of teaching and learning materials.

K1 -Inadequate funds.

K2- Long distance.

K3- Red tape.

K4-Optional subject neglected.

K5- Late presentation of requisition list.

K6 –Breakages.

K7- Ignorance of existence of certain Teaching and learning materials.

K8- Lack of some materials in the market.

K9- Obsolete materials from the donors.

Table 4.2. Problems associated with acquisition.(n=24)

| Problem | n=24 | % |
|---------|------|------|
| K1 | 19 | 79.2 |
| K2 | 11 | 45.8 |
| K3 | 6 | 25 |
| K4 | 1 | 4.2 |
| K5 | 1 | 4.2 |
| K6 | 1 | 4.2 |
| K7 | 1 | 4.2 |
| K8 | 1 | 4.2 |
| K9 | 1 | 4.2 |

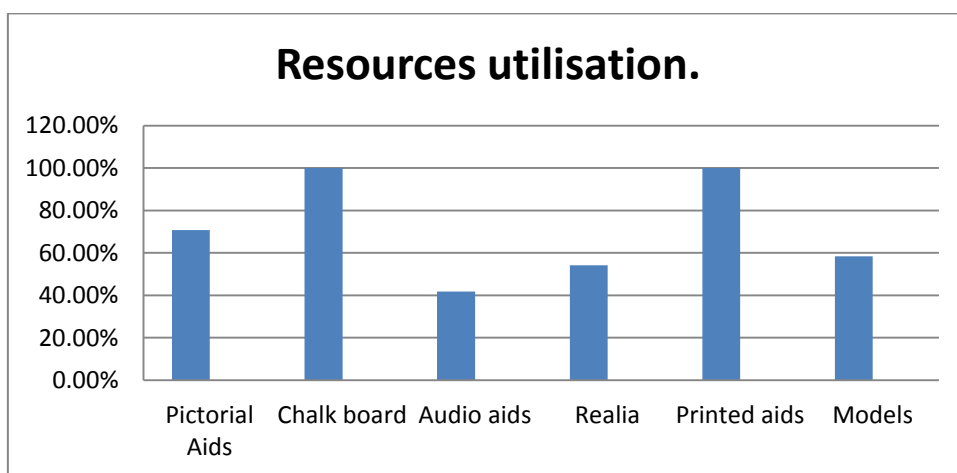
Source: HODs questionnaires.

According to Table 4.2 above 19(79.2%) of the respondents said inadequate funds was the greatest problem in relation to materials acquisition, followed by long distance 11 (45.8%). Tana-River is approximately 550kms from Nairobi and the road infrastructure is poor. Administrative red tape was mentioned by 6(25%) of the respondents while other factors were mentioned by 1 (4.2%) of the respondents. The Ministry of Education secondary mathematics handbook (2006) notes that manipulation of teaching and learning materials helps to convey meaning.

They make abstract concepts understandable

Figure 4.7 Resources Utilization. (n=24).

The study was interested in knowing the resources widely used and the findings were as below.



Source: HODs questionnaire.

According to the figure 4.7 above, 17 (70.8%) of the respondents said they utilized pictorial Aids, 10(41.7%) utilized Audio aids, 13(54.2%) utilized realia, 14(58.3%) utilized models and 24(100%) utilized chalkboards and printed aids.

Table 4.3 Problems associated with resources utilization. (n=24)

| Problems | n=24 | % |
|--|------|------|
| Inadequate/Not available. | 14 | 58.3 |
| Poor maintenance. | 4 | 16.7 |
| Crowded classrooms. | 3 | 12.5 |
| Rough boards, outdated materials. | 3 | 12.5 |
| Lack of technical knowhow. | 2 | 8.3 |
| Loss of teaching and learning materials. | 2 | 8.3 |
| Difficulty in acquisition. | 1 | 4.2 |
| Poor record keeping. | 1 | 4.2 |

Source: HODs questionnaires.

Table 4.3 above shows, 14(58.3%) of the respondents said materials were not adequate or were unavailable and 4(16.7%) commented that materials were poorly maintained while 3 (12.5%) of the respondents said there were problems related to outdated materials and crowded classrooms. Others included lack of technical knowhow and especially of ICT 2 (8.3%) and loss of teaching and learning materials 2 (8.3%).Difficulty in acquisition and poor record keeping accounted for 1(4.2%) each.

4.2.3 Problems learners face due to lack of certain items.

Below were the findings.

L1-Failing

L2-Wasting time

L3-Unfinished homework

L4- Difficulty in studying, understanding.

L5-Stress

L6-Lack of reading materials

L7-Not completing the syllabus

L8- makes someone to steal.

L9- makes someone to buy.

Table 4.4 problems learners face due to inadequacy.(n=97)

| Problems | Frequency.n=97 | % |
|----------|----------------|------|
| L1 | 49 | 50.5 |
| L2 | 42 | 43.3 |
| L3 | 35 | 36.1 |
| L4 | 53 | 54.6 |
| L5 | 12 | 12.4 |
| L6 | 6 | 6.2 |
| L7 | 7 | 7.2 |
| L8 | 1 | 1.0 |
| L9 | 3 | 3.1 |

Source: Learners questionnaires.

Table 4.4 above shows due to inadequacy 49(50.5%) of the respondents said there is failing, 42(43.3%) of the respondents said, it leads to time wastage, 35(36.1%) said it leads to unfinished homework. 53(54.6%) of the respondents asserted that inadequacy results in problems related to language, studying and understudying, 12(12.4%) commented it results to stress while lack of reading materials was mentioned by 6(6.2%) of the respondents. Not completing the syllabus, making someone to steal and buy was said by 7(7.2%), 1 (1.0%) and 3 (3.1%) of the respondents respectively.

4.3 Ways of acquiring teaching and learning materials by principals.

The second research question sought to determine ways of acquiring teaching and learning materials.

Table 4.5. Acquisition of materials by principals.(n=4)

| Ways | Frequency.n=4 | % |
|---------------------------|---------------|-----|
| Buying. | 4 | 100 |
| Improvisation by teachers | 2 | 50 |
| Donations | 2 | 50 |

Source: Principals questionnaires.

According to Table 4.5 above, all the four respondents 4 (100%) commented that acquisition was by buying, while improvisation by teachers and donations was 2 (50%) each. The study was also interested in knowing who selects teaching and learning materials.

Table 4.6 Selection of Teaching and learning materials. (n=4.)

| Selection by | Frequency.n=4 | % |
|--------------|---------------|-----|
| Teachers | 4 | 100 |
| HODS | 2 | 50 |
| Principals | 1 | 25 |
| Students | 1 | 25 |

Source: Principals questionnaires.

Table 4.6 above shows, all respondents 4 (100%) said that selection was done by teachers, while 2 (50%) commented that selection was by HODS.Principals and students each accounted for 1 (25%) each.

Table 4.7 Ways of acquiring learning materials by learners.(n=97).

| Ways | Frequency. n=97 | % |
|------------------|-----------------|------|
| Issued by school | 37 | 38.1 |
| Donation | 5 | 5.2 |
| Borrowed | 12 | 12.4 |
| Bought | 61 | 66.0 |

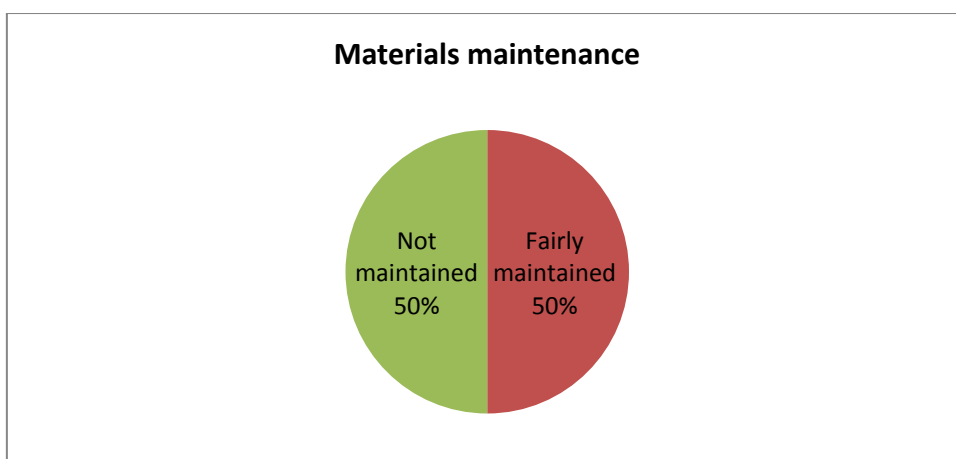
Source: Students questionnaires.

Table 4.7 above shows, high number of respondents 61 (66%) said they bought their learning materials, 37 (38.1%) of the respondents asserted that they acquired them by being given by school, 12(12.4%) said they borrowed their learning materials from friends and 5 (5.2%) of the respondents said they acquired them through donation.

4.4 MAINTENANCE AND REPLACEMENT OF MATERIALS.

The third research question sought to investigate how teaching and learning materials were maintained and replaced. Saunders (1974) says that proper maintenance of teaching and learning materials will lead to cutting down of costs of acquiring new ones. Figure 4.8 below shows the findings.

Figure 4.8 Teaching and learning materials maintenance .n=2



Source: DQASOs interview schedules.

Figure 4.8 above shows that 1(50%) of the respondent commented that schools fairly maintain their teaching and learning materials while 1 (50%) of the respondent said that school do not maintain their materials. The study also sought to know who repairs teaching and learning materials.

Table 4.8 Repair of teaching and learning materials.(n=24).

The study also sought to know who repairs teaching and learning materials once they are broken or spoilt and the finding are shown in Figure 4.8 below.

| Repaired by | Frequency.n=24 | % |
|----------------|----------------|------|
| Students | 5 | 20.8 |
| Teachers | 9 | 37.5 |
| School workers | 3 | 12.5 |
| Experts | 6 | 25 |
| Nobody | 6 | 25 |

Source: HODs questionnaires.

From the table 4.8 above it clearly shows that 9 (37.5%) of the respondents said that repair was done by teachers, 5(20.8%) of the respondents asserted it was done by students, 3 (12.5%) of respondents asserted it was by school workers, 6(25%) of the respondents said it was done by Experts and 6 (25%) of the respondents said there is nobody who did it.

Table 4.9 Replacement of teaching and learning materials=125

According to government policy the life expectancy of materials such as books should be four years and the statistics above shows that something needs to be done to attain this goal. Sumner (1965) says that models require storage rooms and should be protected from dust. The findings are shown in the Table 4.9 below.

| Period | Frequency.n=125 | % |
|----------------------------|-----------------|------|
| Immediately | 93 | 74.4 |
| After one term | 42 | 33.6 |
| After two terms | 14 | 11.2 |
| Others(No specific period) | 28 | 22.4 |

Source: Students, HODs and Technicians questionnaires.

Table 4.9 above shows 93(74.4%) of the respondents said that materials were replaced immediately, 42(33.6%) of the respondents said materials were replaced after one term, 14(11.2%)

asserted that replacement was after two terms and 28(22.4%) of the respondents commented that there was no specific period of replacement.

Table 4.10 Storage of teaching and learning materials.(n=24)

| Place | Frequency.n=24 | % |
|---------------------------|----------------|------|
| Staffroom | 7 | 29.1 |
| Library | 4 | 16.6 |
| Head of department office | 7 | 29.1 |
| Classroom | 1 | 4.1 |
| Resource room | 1 | 4.1 |
| Others(boxes, book store) | 8 | 33.3 |

Source: HODs questionnaires.

Table 4.10 above shows that 7(29.1%) of the respondents said teaching and learning materials were stored in the staffroom and head of department office in each case,4(16.6%) of the respondents asserted materials were kept in the library,1(4.1%) of the respondents said they were kept in classroom and resource room and 8(33.3%) said teaching and learning materials were kept in boxes and book store which was the highest.

Table 4.11.Problem of storage rooms.(n=24)

Sumner (1965) says some school storage rooms are poorly maintained, ventilated and lack enough space. The study revealed the following information as shown in the Table below.

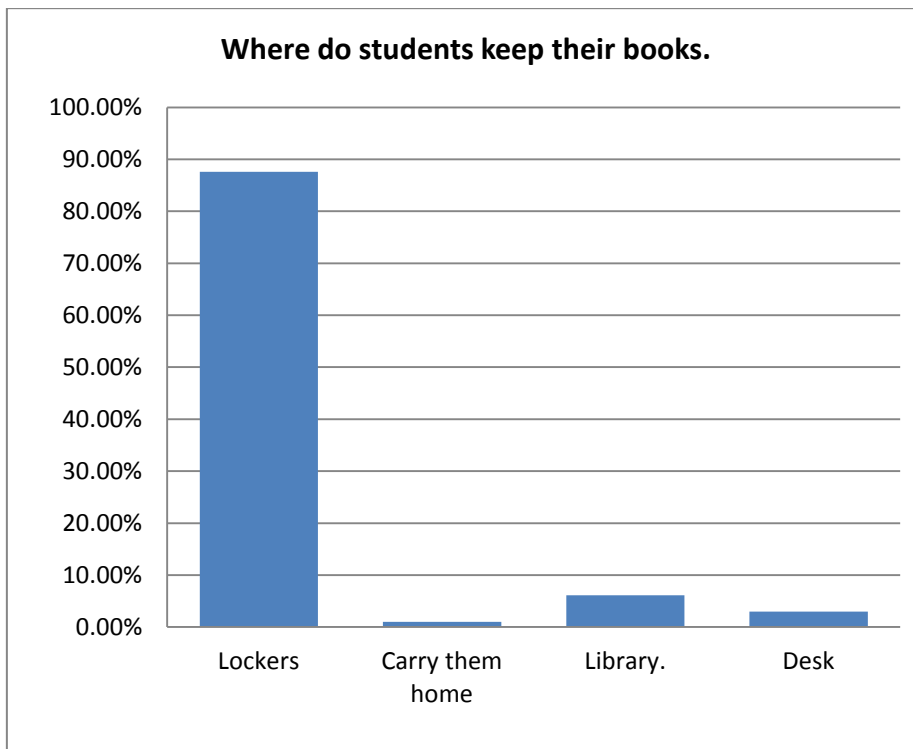
| Problem | Frequency.n=24 | % |
|------------------------------|----------------|------|
| Leaking roof. | 5 | 20.8 |
| Dusty. | 4 | 16.7 |
| Insecurity | 6 | 25.0 |
| Lack of storage room. | 8 | 33.3 |
| Rodents, Termites attack | 7 | 29.2 |
| Lack of space & inaccessible | 6 | 25.0 |
| Poor recording | 2 | 8.3 |

Source: HODs questionnaires.

Table 4.11 shows 5(20.8%) of the respondents commented on leaking roof, 4(16.7%) said that storage rooms were dusty,6(25%) highlighted the problem of storage rooms being insecure,7(29.2%) asserted that materials were attacked by rodents and termites in the storage

room,6(25%) of the respondents talked of lack of space and inaccessibility of the storage rooms,2(8.3%) of the respondents commented about poor recording and 8(33.3%) said that storage rooms were lacking.

Figure 4.9 Where do students keep their books?.(n=97)

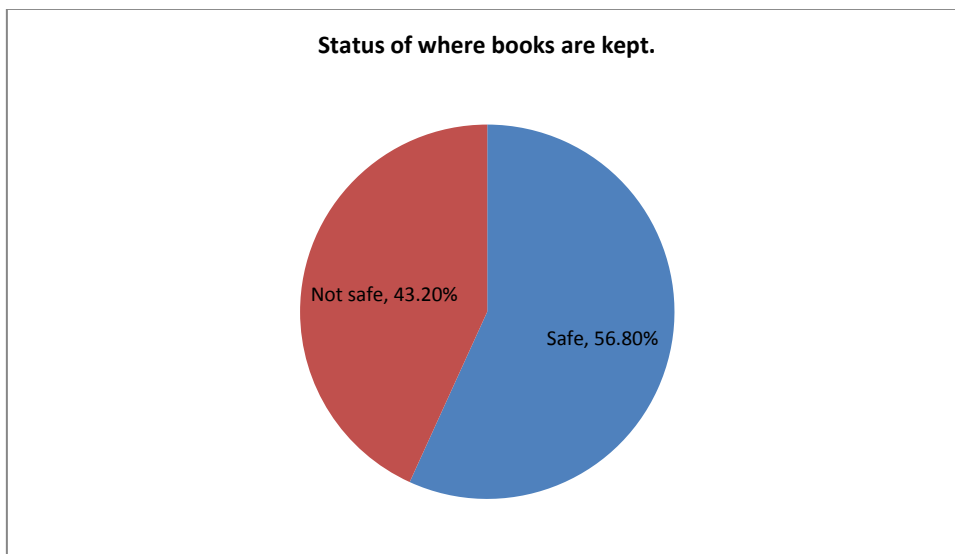


Source: Students questionnaires.

Figure 4.9 above shows that 85 (87.6%) of the respondents said they keep their materials in their lockers, 1(1%) said they carry them home, 6(6.1%) commented they keep them in the library and 3(3%) said they keep them in the desk.

Figure 4.10 Where students keep their books is it safe or not? (n=97).

The study was interested in knowing whether students' learning materials are safe or not, and the study revealed the following information as per the figure below.



Source: Students questionnaires.

Figure 4.10 above reveals that 42 (43.2%) of the respondent said that where books are kept is not safe and 55 (56.6%) respondents said that where they keep their books is safe.

Table 4.12 Maintenance of school books by students.(n=97)

The study sought to know how students maintain their books and the findings were as per the table below.

| Maintained by | Frequency.n=97 | % |
|-------------------------|----------------|------|
| By covering | 13 | 13.4 |
| Replacing lost ones | 5 | 5.1 |
| Proper handling | 74 | 76.2 |
| Repairing by sol taping | 2 | 2.0 |
| Not writing inside | 9 | 9.2 |

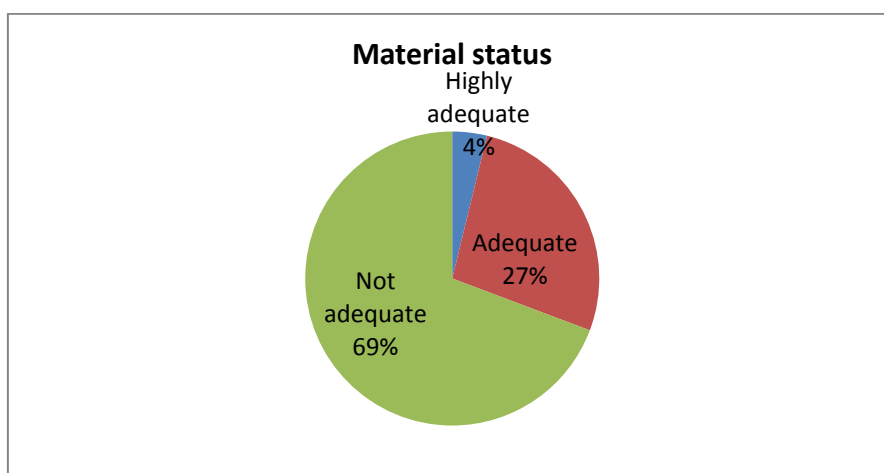
Source: Students questionnaires.

Table 4.12 above Shows 13(13.4%) of the respondents said that they maintain books by covering them, 5(5.1%) of the respondents maintain them by replacing the lost ones, 2(2%) maintain by repairing using sol tape and 9(9.2%) maintain by not writing inside unnecessarily.

4.5 Status of teaching and learning materials.

The fourth research question sought to find out the status of teaching and learning materials in public secondary schools in Tana River District. The findings are shown in Figure 4.11 below.

Figure 4.11 Material status. (n=26).



Source: HODs questionnaires and DQASOs interview schedule.

Figure 4.11 above reveals that 18 (69.2%) of the respondents said that teaching and learning materials were inadequate, 7(26.9 %) said that the materials were adequate while 3.8% said that materials were highly adequate. With the increasing enrolment and free tuition secondary waive there is need to increase allocation. Wernerfelt (1984) comments that if resources are limited there is varied implication on teaching and learning.

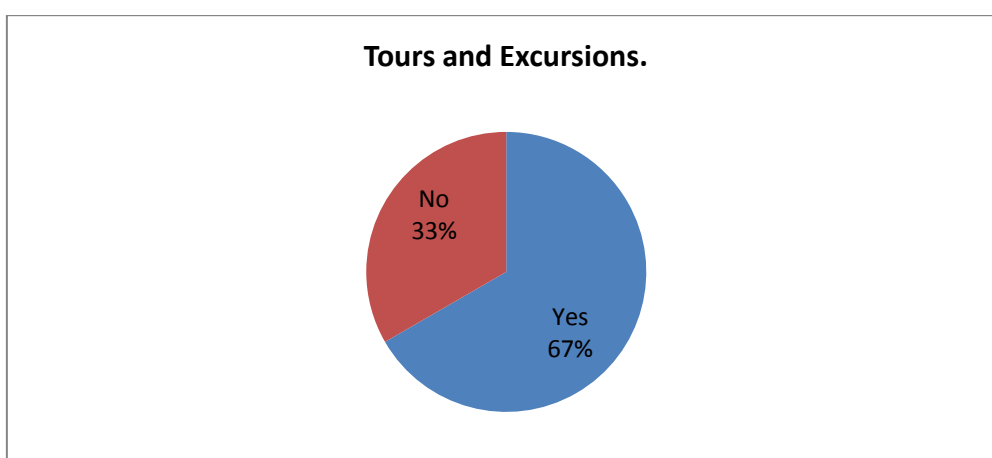
4.5.1 Teachers availability.

Mwangi (1985) asserts that there is a great dearth of qualified secondary school teachers in Kenya and the study therefore sought to know teachers availability and the study revealed that in all the

schools have inadequate teachers. Eshiwani, G. (1983) notes that shortage of teachers leads to high teacher pupil ratio and this has an effect on teaching and learning. With high enrolment teachers do not plan well for teaching and hardly mark students' books regularly.

Figure 4.12 Are Educational Tours and excursions undertaken? (n=9)

Patel (2001) says that a learner retains 83% of what is learnt through sight and therefore, the study sought to know whether educational tours and excursions were undertaken.



Source: Principals questionnaires and Parent Representatives schedules.

The study revealed that 6 (66.6%) of the respondents said that education trips were undertaken while 3(33.3%). Tours widen the mental scope of learners and help in imagination creation ability.

4.5.2 In service training of teachers.

Study by fuller (1985) reveals that there is a positive correlation between in service training and performance and therefore the study was interested in knowing whether teachers attend seminars.

The study revealed that some teachers do attend seminars.

4.5.3 What students are lacking.

According to the education policy, by year 2009 the ratio of students: learning materials was supposed to be 1:1. This means a lot more needs to be done in terms of availing more teaching and

Learning materials. Table 4.13 shows what students are lacking.

Table 4.13 What students are lacking.(n=97).

| ITEM | Have (%) | lack (%) |
|-------------------|-----------|----------|
| Textbook | 17.5 | 82.4 |
| Exercise books | 90.7 | 9.2 |
| Atlas,Bible,Quran | 34.0 | 65.9 |
| Calculator | 42.2 | 57.7 |
| Geometrical set | 56.7 | 43.2 |
| Logarithm table | 71.1 | 28.8 |
| Dictionary | 36.0 | 63.9 |
| Kamusi | 38.1 | 61.8 |

Source: Students questionnaires.

Table 4.13 above reveals that 82.4% were lacking all text books required, 65.9 % of the respondents were either lacking an atlas, bible or quran and 57.7 % were lacking a calculator. Moreover 63.9% and 61.8% of the respondents were lacking dictionary and kamusi respectively.

4.5.4. Number of science laboratories.

The study sought to know the number of science laboratories available and whether they were spacious enough or not. Kenya's vision 2030 states, "Kenya aims at expanding access to university education from 4.6% to 20%, with an emphasis on science and technology courses". The study revealed that all sciences are taught in one laboratory and is not spacious and this automatically leads to congestion and overcrowding.

4.6 Ways of improving existing materials.

The fifth research question sought to know how existing teaching and learning materials can be improved.

Table 4.14 Ways of improving teaching and learning materials according to teachers.(n=24).

| Ways | Frequency.n=24 | % |
|--------------------------------------|----------------|------|
| Regular maintenance and replacement. | 7 | 29.2 |
| ImprovingICT | 6 | 25.0 |

| | | |
|--|----|------|
| Infrastructure. | | |
| Availing more teaching and learning materials. | 11 | 45.8 |
| Proper storage | 5 | 20.8 |
| Purchasing variety | 1 | 4.2 |
| Improvising | 3 | 12.5 |

Source: HODs questionnaires.

Table 4.14 reveals that 7(29.2%) of the respondents said that improvement by regular maintenance and replacement,6(25%) said improvement is by improving ICT infrastructure,11(45.8%) of the respondents improvement can be by availing more materials,5(20.8%) said can be improved by storing properly,1(4.2%) of the respondents can be by purchasing variety and 3(12,5%) said it could be achieved by improvising.

Table 4.15 Ways of improvement according to students.(n=97).

The study sought to know how teaching and learning materials can be improved and the findings are in Table below.

| Ways | Frequency.n=97 | % |
|----------------------------------|----------------|------|
| More funding from the government | 80 | 82.5 |
| Fees increase | 4 | 4.1 |
| Ensuring security | 1 | 1.0 |
| Donations | 24 | 24.7 |
| Replacing lost items | 1 | 1.0 |
| Parents to provide | 20 | 20.6 |

Source: Students questionnaires.

Table 4.15 shows 20(20.6%) of the respondents said improvement can be through provision by parents, 1(1%) of the respondents commented on replacing lost items as a way of improvement, 24(24.7%) talked of donations, 1(1%) of the respondents talked of ensuring security, fees increment was mentioned by 4(4.1%) of the respondents and 80 (82.5%) of the respondents said more funding from the government is required.

4.7 Discussion of the findings.

From the findings of the study it was established that the government has done a lot in terms of availing teaching and learning materials in public secondary schools under the programme of Free tuition waive and this has led to increased enrolment since 2008 and consequently this has made the anticipated ratio of teaching and learning materials to learners not being 1:1. The study also revealed that modern forms of knowledge acquisition such as IT and computers are not widely used in teaching and learning process.

Inadequate funds and long distances were cited as the major factors contributing to shortage of teaching and learning materials and Audio Aids were the least utilized in teaching and learning process. Inadequacy of teaching and learning materials has led to failing and difficulty in studying and understanding. The study also found that students are least involved in selection of teaching and learning materials. Concerning maintenance and replacement of teaching and learning materials the study revealed that they are fairly maintained and in some cases there is no specific period of replacing lost and broken items and this will greatly impact on teaching and learning adversely. The storage rooms has a number of problems ranging from leaking, dusty insecurity, attack by rodents and poor recording. In some cases they are non existent and this makes them to be kept at any place. This makes them wear out quickly. The number of teachers is inadequate and this compromises the quality of education in Tana River district .A good numbers do not undertake Educational Tours and Field excursions and this limits the mental scope of learners. The study also revealed that most schools in the district have one laboratory and all sciences are taught there and is not spacious enough to contain a single classroom of forty five students. This limits learner's creativity and innovation. The ever increasing human population has led to continued increase in enrolment and the study identified more funding is necessary to avail more teaching and learning materials to ensure quality teaching and learning hence poverty alleviation.

CHAPTER FIVE.

SUMMARY, CONCLUSION AND RECOMMENDATIONS.

5.0 Introduction.

In this chapter the results of the study are summarized, discussed and recommendations made thereafter. The following were the guiding objectives in the study:

- i) To find out challenges of inadequate teaching and learning materials.
- ii) To determine ways of acquiring teaching and learning materials.
- iii) To investigate how teaching and learning materials are maintained and replaced.
- iv) To assess whether teaching and learning materials are adequate.
- v) To establish ways and means of improving teaching and learning materials.

5.1 Summary of the findings.

5.1.1 General information of the respondents.

- a) Concerning the Gender, 31.6% were females and 68.4% were males.
- b) Demographic data of the respondents showed that 68.4% fell between 17-20 years, 3.0% were between 21-30 years, another 18.3% were between 31-40 years and 7.4% were between 41-55 years.
- c) The professional qualifications of the respondents were as follows, 17.7% had masters, 52.9% had Bachelors Degree, 11.7% had Diploma and 17.7% had Technical Education.
- d) Inadequacy of teaching and learning materials leads to ineffective teaching and learning. This is according to all respondents,(100%).
- e) All respondents (100%) said teachers were not enough and 69.2% of the respondents said teaching and learning materials were inadequate.
- f) The working experience of the respondents was, those with less than 1yr were 10.3%, between 6-10 years were 23%, between 11-15 years were 5.1%, between 16-20 years were 10.29% and 21 years and above were 2.6%.

5.1.2 Challenges due to inadequacy.

- a). The study showed that as a result of inadequacy there was ineffective teaching and learning. This was according to all respondents (100%). This implies that due to the ever growing population there is need to continue availing more materials so as to match the learners enrolment.
- b) Lack of ICT infrastructure was mentioned by (100%) respondents. This means that the school administration needs to prioritize this area in order to have contemporary knowledge acquisition methods.
- c) The biggest problem in relation to teaching and learning materials acquisition was inadequate funds (79.2%) and the long distance where these materials are acquired (45.8%). In this case more funding is needed to purchase more materials and the materials needs to be ordered in time.
- d) Concerning resources utilization, none of the respondents used projected aids in their work.
- e) The respondents (58.3%) said inadequacy was a big problem associated with resource utilization and poor maintenance of teaching and learning materials was cited by 16.7% of the respondents. Resource rooms and modern libraries were needed to solve this problem.

5.1.3 Ways of acquiring materials.

- a) The study revealed that there was no improvisation by learners and improvisation by teachers accounted for 50%. There was no borrowing. The environment around the school needs to be used by both teachers and students for teaching and learning and acquiring materials that are not in the market.
- b) Concerning selection of teaching and learning materials (25%) of the respondents said it was done by students and principals. The study revealed that selection of these materials is not democratically done by all.

5.1.4 Maintenance and replacement of materials.

- a) According to the study (50%) of the respondents said materials were not maintained and it

further revealed that in the institutions (25%) nobody is charged with the work of repairing learning materials. (22.4%) of the respondents said there was no specific period of replacing lost or spoilt items. This therefore implies that implementing the government policy of learning materials lasting for four years will be difficult.

- b) Regarding where materials are kept only (4.1%) of the respondents said they were kept in the resource rooms and (16.6%) said they were kept in libraries. Effort need to be done to establish these facilities.
- c) Concerning problems related to storage rooms (33.3%) of the respondents said they were lacking, leaking roof were mentioned by (20.8%) of the respondents, and attack by rodents and termites was highlighted by (29.2%) of the respondents. It's evident from these statistics that there are many problems in relation to storage rooms.
- d) Furthermore the study revealed that, 43.2% of the respondents said lockers where students keep their books were not safe.

5.1.5 Status of teaching and learning materials.

- a) The study revealed that teaching and learning materials were inadequate (69.2%) and 100% of the respondents said teachers were not enough in our institutions. Despite huge allocation by the government to the Education sector there is need for donor funding to avail more materials to the ever growing enrolment.
- b) 25% of the respondents said Educational tours and Excursions were not undertaken.
- c) Regarding the number of science laboratories, the study revealed there was only one per school and furthermore all respondents (100%) said they were not spacious. This hampered students' creativity and innovation.
- D) The study revealed that computers and daily newspapers are lacking in our homes. This was according to (100%) of the respondents.

5.1.6 Improvement of existing materials.

- a) The study revealed that regular maintenance and replacement was a way of improving the situation. This was according to (29.2%) of the respondents.
- b) Availing more teaching and learning materials was mentioned by (45.8%) of the respondents.
- c) Improving ICT infrastructure was highlighted by (25%) of the respondents.
- d) More funding was mentioned by (82.5%) of the respondents.

5.2 Conclusion.

The study was guided by four objectives and it was found out that teaching and learning materials are inadequate and this leads to ineffective teaching and learning and also poor performance. The ICT infrastructure, computers and projectors are lacking in these institutions and this consequently leads to low utilization of the same in the learning process, and therefore contemporary forms of knowledge acquisition by both teachers and learners are not in place in most schools. Inadequate funds and long distance was a major problem in relation to teaching and learning materials acquisition and this consequently lowers time utility.

The study also found out that available teaching and learning materials are not properly maintained and in some cases there is no specific period of replacement of spoilt and lost items by learners. Resource rooms and modern libraries are not in place while storage rooms of teaching and learning materials are in poor state. Teachers were found not to be enough and students reported lack of vital Textbooks, Atlas, Bible Quran and a good number said they do not have a calculator. Most schools had only one science laboratory which is not spacious to contain single classroom of learners.

5.3 Recommendations.

The study wishes to make the following recommendations at the school, local and national levels. At the school level there should be specific period of replacing lost items and to ensure that the

government policy of teaching and learning materials lasting for four years is achieved school rules and discipline should be tightened. Parents should be sensitized concerning availing materials such as set books, Newspapers to their sons and daughters and democracy should prevail in our institutions by involving learners in selection of teaching and learning materials. At the local level, teachers and learners should highly use the environment around them for teaching and learning purposes. This will improve their creativity and imagination .At the national level, TSC should employ lacking teachers and more funding is required to avail more teaching and learning materials to the ever increasing enrolment. More science laboratories and Libraries are needed if Kenya vision 2030 is to be realized and the government policy guiding IT infrastructure in the institutions is long overdue.

5.3.1 FURTHER RESEARCH.

The study confined itself to Challenges of teaching and learning materials in public secondary schools in public secondary schools, in Tana-River District, Kenya and in view of this the study proposes the following areas for further research.

1. Challenges of teaching and learning materials in public secondary schools in Kenya.
2. Teacher challenges in public secondary schools, in Tana –River District.

REFERENCES.

- Ayot, H. O & Patel M. M .(1987). *Instructional methods of teaching in schools*. Nairobi: Kenyatta University.
- Barney, J. B (1991). *Firm resources and sustained competitive advantages*. journal of management: 17 (1), Pg 99 – 120.
- Borg ,R. W and Gallo, M. (1989). *Educational researchers, an introduction*. New York: Longman Inc.
- Dale, E. (1955). *School and community*. London: library association publishing limited.
- Digolo, O. C. (1986). A study of utilization of community resources by primary schools to provide relevance education (Unpublished Ph.d Thesis). Nairobi: Kenyatta University.
- Eshiwani, G.(1983). Factors influencing Academic performance among primary and secondary school students in western province, Kenya (unpublished report).Nairobi: Kenyatta university college.
- Fuller,w.(1985).A study of primary schooling in Thailand. Factors affecting scientific achievement of primary school people. Bangkok: Office of National Education communication.
- Gay,L.R(1992).*Educational Research*. Competence for analysis and applications.4th Edition.Newyork: Macmillan publishers.
- Getz, G.A. (1972). *Audio Visual methods in Christian education*. New York: Moody Press.
- Government of Kenya. (2007). Kenya Vision 2030.
- Government of Kenya, (1968). Ministry of education Act.
- Kiyaipi, O. (Daily Nation 20/09/2010). FPE and FSE in schools.
- Hall, O.& paulucci, B.(1970). *Teaching Home Economics*. Newyork: John wiley & Sons Inc.
- Jowi, O. and Njogah, B. (1981). Audio visual aids in learning non-project and project media. A paper presented at a seminar for English teacher Nairobi.
- Kerlinger ,F.N.(1964).*Foundations of Behavioral Research 2nd Edition*. Newyork :Harcourt Brace Jovanovich college publishers.
- Kiragu,F.E. (1986).Achievement in mathematics. An investigation of the factors that contribute to mass failure in mathematics (unpublished M.AThesis).Nairobi: Kenyatta University.
- Kneller, G. F. (1971). *Introduction to philosophy of education*. New york: Reinhold publishing co-oporation.

- Lauwerys, J. (1971). *Education and economy*, London: Evans brother Limited.
- Malusu J. M. (1981). Factors influencing CRE performance (unpublished MED Thesis). Nairobi University: Nairobi.
- Ministry of Education.(2010).Summative Evaluation of the secondary school Education curriculum.
- Ministry of Education. (2009). Education facts and figures, 2002-2008.
- Ministry of Education.(2006). Secondary mathematics Teachers handbook. Nairobi: Kenya institute of Education publications.
- Muindi, B. (Daily Nation, 1/09/2010).Tuition waive lures million to schools.
- Mwangi,D.T.(1985).Factors influencing the performance and learning among secondary school students in Kenya (unpublished Report).Nairobi: University of Nairobi.
- Odege, D. (2002). Availability and utilization of teaching and learning resources in CRE in secondary schools in Nairobi (Unpublished thesis). Nairobi: Kenyatta University.
- Orodho, A. J. (2005). *Elements of education and some science research methods*. Nairobi: Masola publisher.
- Otwori, C. (1992). Availability, utilization and management of teaching learning resources in Kenya secondary schools, a case of Nyamira District. (Unpublished thesis). Nairobi: Kenyatta University.
- Republic of Kenya, (2010). *Constitution of Kenya*. Nairobi: Government Printer.
- Tucker, R.N. (1987). *The development of resource centre of UNESCO study*. London: Kogan page Ltd.
- Wernerfelt , B. (1984). *The resources based theory of the firm*. Strategic management journal: 5 (2) Pg. 171 – 180.
- Wittich, W. A and Schuller, H.(1962). *Audio visual materials, their nature and use*. New York: Harper and now inc.
- World Educational Forum. April (2000).Dakar, Senegal.
- Reddy, G. (2006). *Slow learners. Their psychological and instruction*. New Delhi, India: Discovery publishing House.
- Twoli,N.(2007). *Instructional methods in Education*. Nairobi: KIE, publications.
- Patel,M and Mukwa,C.W.(1993). *Design and use of media in Education*. Nairobi: Lactern publications.
- Servaij, W & Varga,T.(1971). *Teaching school mathematics*. Aylesbury: Compton printing Ltd

- g) Mixed day and boarding ()
 h) Others (specify) ()

5. School enrolment (please indicate below)

| Class | No. of Streams | No. of Students |
|-----------------------|----------------|-----------------|
| Form 1 | _____ | _____ |
| Form 2 | _____ | _____ |
| Form 3 | _____ | _____ |
| Form 4 | _____ | _____ |
| Total enrolment _____ | | |

SECTION.

6. Assess the adequacy of the following teaching and learning materials in your school. Note there should be only one tick per item.

| Teaching and learning materials. | Highly adequate | Adequate | Inadequate | Highly inadequate | Not available |
|----------------------------------|-----------------|----------|------------|-------------------|---------------|
| Stationery | | | | | |
| Exercise books | | | | | |
| Office equipments | | | | | |
| Text books | | | | | |

7. Which are the ways in which your school uses to acquire teaching and learning materials? You can tick more than one.

Ways of acquiring

- a) Buying ()
 b) Improvisation by teachers ()
 c) Improvisation by learners ()
 d) Donations ()
 e) Borrowing ()

8) Which are the sources of students' textbooks in your school?

- a) Parents ()
- b) School ()
- c) Both parents and school ()

9. Which parties are involved in selection of teaching and learning materials?

PARTIES

- a) Teachers ()
- b) HOD's ()
- c) Principal ()
- d) Students ()

10. Do you have enough teachers in your school?

- () Yes
- () No

If the answer is No, state by how many

11. Do you allow students out for tours?

- () Yes
- () No

12. If the answer is yes, who finances it?

- a) School ()
- b) Parents ()
- c) School and parents ()

13. Do you allow teachers to go for seminars?

- () Yes
- () No

SECTION C.

14. a) As a manager in your school what major problems does school encounter due to inadequacy of teaching and learning materials.

- a)
- b)
- c)

b) Suggest solutions to the above.

15 a) List down important teaching and learning materials which are lacking in your school.

- a)
- b)
- c)

16. (a) Do teachers in your school embrace information and communication technology in their work. Rate them

| | |
|-----------|---------|
| Excellent | () |
| Good | () |
| Fair | () |
| Poor | () |

16 (b) Suggest ways of improving ICT in your school.

APPENDIX B.

HOD'S QUESTIONNAIRE.

This research is meant for Academic purpose only. It will try to find out challenges of teaching and learning materials in public secondary schools, Tana River District. Kindly you are requested to provide answer to the Questions as honestly and precisely as possible.

Responses to these questions will be treated confidentially.

Please tick (✓) where applicable or fill the required information on the spaces provided.

SECTION A: BACK GROUND INFORMATION.

1. a) What's your Gender (i) Male ()
(ii) Female ()

b) What's your age?

2. What is your teaching experience?

- A. Less than 1 year ()
B. 6-10 years ()
C. 11-15 years ()
D. Over 15 years ()

3. What's your highest level of Education?

- i PhD ()
ii Master degree ()
iii Bachelors degree ()
iv Diploma ()
v Others (specify) ()

4. a) How many years have you served in the current station _____

b) For how long have you served as a HOD _____

SECTION B

5 (a) in your department which method is used to acquire teaching and learning materials

1. Bought ()
2. Improvised ()
3. Donations ()

- 4. Borrowed ()
- 5. Exchange ()

b) List the problems associated with the acquisition of teaching and learning materials in your department.

- 1)
- 2)
- 3)

6. Comment about the adequacy of teaching and learning materials in your department.

- A. Highly adequate ()
- B. Adequate ()
- C. Not adequate ()
- D. Not available at all ()

7. (a) Who repairs teaching and learning materials in your department?

- 1. Students ()
- 2. Teachers ()
- 3. School workers ()
- 4. Experts ()
- 5. Nobody ()

7 (b). If a book gets lost or something gets spoilt in the department, how soon is it replaced?

- (i) Immediately ()
- (ii) After one term ()
- (iii) After one year ()
- (iv) Others (specify)

8. a) As a department where do you store teaching and learning materials of your department.

- A. Staffroom ()
- B. Library ()
- C. Head of department office ()
- D. Classroom ()
- E. Department resource room ()
- F. Others (specify)

b) Which problems do you encounter as a department related to storage of your teaching and learning material?

- i)
- ii)
- iii)

9) a) In your department do you have enough teaching and learning materials .

Yes ()
 No ()

b) If the answer is No, what do you think can be done to improve existing teaching and learning material.

- i)
- ii)
- iii)

10(a) How do you rank teachers in your department in terms of utilization of resources in your department.

Good () Average () Poor () don't use at all ()

b) Do teachers in your department embrace ICT in their work?.Rate them.

Excellent () Good () Fair () Poor ()

11(a) Below are examples of teaching and learning materials. Which ones are commonly used by teachers in your department?

| Type | Example | Tick only where applicable |
|------|---|----------------------------|
| A. | Pictorial Aids Photographs, pictures, diagrams, tables, charts, graphs, cartoon. | |
| B. | Chalkboard Black boards | |
| C. | Projected Aids Slides, projectors | |
| D. | Audio – visuals Films, TV's | |

| | | | |
|----|--------------|----------------------------------|--|
| E. | Audio - Aids | Cassette recorder, Radio lessons | |
| F. | Realia | Specimens, resource persons | |
| G. | Printed Aids | Text books, duplicated material | |
| H | models | Globes ,wall charts | |

11 (b). Which problems are commonly associated with the utilization of the above?

12. In your department how do you think the existing teaching and learning materials can be improved?

- 1)
- 2)

Thank you for finding time to fill this questionnaire.

By DAVID

APPENDIX C.

LABORATORY TECHNICIAN QUESTIONNAIRE.

This research is meant for Academic purpose only. It will try to find out challenges of teaching and learning materials in public secondary schools, Tana River District. Kindly you are requested to provide answer to the Questions as honestly and precisely as possible.

Responses to these questions will be treated confidentially.

Please tick (✓) where applicable or fill the required information on the spaces provided.

SECTION A: BACK GROUND INFORMATION

- 1) What's your age (A) Below 20 years ()
(B) Between 20-30 years ()
(C) Between 30-40 years ()
(D) Over 40 years ()
- 2) What's your gender (A) male ()
(B) Female ()
- 3) What's your highest education level (A) Certificate ()
(B) Diploma ()
(C) Degree ()
(D) Others (specify).....
- 4) What's the name of the school

SECTION B

- 5) Which method is used to acquire laboratory chemicals and equipments in the school.
A) Buying ()
B) Improvisation ()
C) Donations ()
D) Borrowing ()

6) Assess the adequacy of teaching and learning materials in the laboratory.

| | | | | | |
|---------------------------------|-----------------|----------|------------|-------------------|---------------|
| Teaching and learning materials | Highly adequate | Adequate | Inadequate | Highly inadequate | Not available |
|---------------------------------|-----------------|----------|------------|-------------------|---------------|

APPENDIX D.

STUDENTS QUESTIONNAIRE.

This research is meant for Academic purpose only. It will try to find out challenges of teaching and learning materials in public secondary schools, Tana River District. Kindly you are requested to provide answer to the Questions as honestly and precisely as possible. Responses to these questions will be treated confidentially.

Please tick (✓) where applicable or fill the required information on the spaces provided.

SECTION A: BACK GROUND INFORMATION

- 1) What's your age (a) Below 14 years ().
(b) Between 15-20 years ()
(c) Between 20-25 years ()
(d) Others (specify)
- 2) What's your gender (A) male ()
(B) Female ()
- 3) In which form are you in (A) Form one ()
(B)Form two ()
(C)Form three ()
(D) Form four ()
- 4) What's the name of the school

SECTION B

5) Do you have the following items? Tick yes or no per item

| REQUIRED ITEM | YES | NO |
|-----------------------------|-----|----|
| All text books you need | | |
| All exercise books you need | | |
| Atlas,bible,quran | | |

| | | |
|-----------------------|--|--|
| Scientific calculator | | |
| Geometrical set | | |
| Logarithm table | | |
| Dictionary | | |
| Kamusi | | |

6) The items that you ticked yes above, how did you acquire them?

a) Issued by the school? ()

b) Donation ()

c) Borrowed ()

d) Bought ()

7) Which problems do you face due to lack of items you have ticked NO in question 5 above?

a)

b)

c)

8) In school where do you keep your books?

9) The answer in 8 above, is it safe?

Yes ()

No ()

10) After you lose school book or you spoil laboratory equipment, how soon do you replace it?

a) I don't replace it ()

b) Immediately ()

c) After one term ()

d) After two terms ()

e) Others (specify). ()

11) How do you maintain school property e.g. textbooks.

a)

b)

12) How can the existing teaching and learning materials be improved in our school?

a)

.

APPENDIX E.

INTERVIEW SCHEDULE FOR THE DQASO

The research is meant for Academic purpose only. It will try to find out challenges of teaching and learning materials in public secondary schools, Tana River District. Kindly you are requested to provide answer to the Questions as honestly and precisely as possible. Responses to these questions will be treated confidentially.

Please tick (✓) where applicable or fill the required information on the spaces provided.

SECTION A

BACK GROUND INFORMATION:

1. What's your Gender (a) Male ()
(b) Female ()

2. What's your Age?

- A. Less than 30 years ()
- B. Between 30- 40yrs ()
- C. Between 40 – 55yrs ()
- D. Between 55 – 60yrs ()

3. What's your highest level of Education?

4. For how long have you served as DQASO?

5. For how long have you served in this particular District in the same capacity?

6. Name of the District

7. How many secondary schools, do you have in this District?

SECTION B

8. How are the schools in this District equipped in terms of teaching and learning materials recourses?

- A. Very well equipped ()
- B. Fairly equipped ()

C. Poorly equipped ()

9. Mention problems which are associated with inadequacy of teaching and learning material in your District.

i)

ii)

iii)

10.a) Which problems are associated with usage of ICT, in teaching and learning in schools in your District

b) Kindly suggest possible solutions to the problems mentioned in 10 (a)

11. Do you think the teaching and learning materials in schools in your District is enough in relation to the enrolment?

Yes ()

No ()

12. a) Do the schools in your District have enough teachers

Yes ()

No ()

b) If the answer is no, explain how this impacts on teaching and learning.

13. Comment on maintenance of teaching and learning material resource in schools.

A. Very well maintained ()

B. Well maintained ()

C. Fairly maintained ()

D. Not maintained ()

14. Comment on transition rate from secondary to university in the District.

8. Mention problems facing the class you are representing.

- (a)
- (b)
- (c)

9a. Do the class undertake for Educational tours during school holidays.

9b. Account for your answer above?.

10. What was the class mean score last term?

11. Are the following items at your home.

| | <u>Yes</u> | <u>NO.</u> |
|-----------------------|------------|------------|
| (A) Radio | () | () |
| (B) TV'S | () | () |
| (C) Computer | () | () |
| (D) Daily newspapers. | () | () |

Thank you for your cooperation.

APPENDIX G.

Researchers' Observation Schedule.

1. Classroom

- A. Size
 - Standard size ()
 - Not Standard size ()

- B. Permanent
 - Permanent ()
 - Semi – Permanent ()

- C. Capacity
 - Crowded ()
 - Not Crowded ()
 - Quite Okay ()

2. Teaching and learning Materials

- a) Stationary
 - Adequate ()
 - Not Adequate ()

- Text books
 - Adequate ()
 - Not adequate ()

- Laboratory chemicals
 - Enough ()
 - Not enough ()

- Office Equipments
 - Enough ()
 - Not enough ()

- Sport equipment
 - Enough ()
 - Not Enough ()

- Home science equipment
 - Enough ()
 - Not enough ()

Computer —————> Enough ()
 —————> Not enough ()

Teaching Aids —————> Enough ()
 —————> Not enough ()

3. Physical Facilities Related to Storage of Learning and Teaching Material.

Book Store —————> Available ()
 —————> Not Available ()

Libraries —————> Available well stocked ()
 —————> Not Available well stocked ()

Home science Workshop —————> Well Stocked ()
 —————> Not well stocked ()

Agriculture Room —————> Available ()
 —————> Not Available ()

Computer room —————> How many computers

4. Utilization of Various Teaching and Learning Materials

School _____

Lesson _____

| | Type of Resources | In Use | Not in use |
|---|---|--------|------------|
| 1 | Pictorial Aids | | |
| 2 | Chalks Board | | |
| 3 | Project Aids | | |
| 4 | Audio Aids | | |
| 5 | Audio Visual | | |
| 6 | Realia e.g. Specimens, Resources person | | |
| 7 | Printed Aids | | |
| 8 | Models | | |

APPENDIX H:
BUDGET.

ITEM.

| Part 1 | Kshs. |
|--|---------------------|
| a) Production of research instruments | 4,000 |
| b) Typing charges (100 pages @ 40/) | 4,000 |
| c) Binding 5 copies of the project @ 400/= | 2,000 |
| d) Transport for 20 days @ 250/= | 5,000 |
| e) Subsistence for 20 days, breakfast, Lunch Supper and accommodation | 10,000 |
| SUB TOTAL | 25,000 |
| Part 2: incidental Costs | |
| i) Research Assistance @ 300 for 20 days | 6,000 |
| ii) Other Costs (Stationary, Pens, Pencils) | 4,000 |
| SUB TOTAL | 10,000 |
| GRAND TOTAL | kshs. 35,000 |

**APPENDIX I:
Work schedule.**

| Item | Activities | Duration | Dates |
|-------------|---|--------------------------------------|---|
| 1 | Proposal writing. | 5 months. | August –December 2009. |
| 2 | Correcting draft proposal as per supervisor's advice. | 4 months. | January –April 2010. |
| 3 | Correcting final draft of the proposal. | 1 Month. | May-June 2010. |
| 4 | Letter from the chairman seeking permit from the ministry. | 1 Month. | December-January 2011. |
| 5 | Research clearance permit. | 1 week | February 5 -11, 2011. |
| 6 | Field Research -Piloting. -Data collection. -Data analysis. | 2 weeks 3 weeks 1 week | 12 th - 26 th February 2011. 1 st – 22 nd March 2011. 23 rd -1 st April 2011. |
| 7 | Writing chapter 4 and 5 and submission to the Supervisors. | 3 weeks | 2 nd -25 th April 2011. |
| 8 | Correction as per the supervisors' advice. | 1 week | 26-2 rd May 2011. |
| 9 | Submission of final draft. | 1 week | 3 rd -10 th may 2011 |
| 10 | Any other corrections and binding. | 2 weeks | 11 th -25 th may 2011. |

**APPENDIX J:
Introductory letter to school**

David Kang'ethe
Department of Education Management,
Policy and Curriculum Studies
Kenyatta University,
P. O. Box 43844
Nairobi.

To,
The Principal,

.....
.....
.....

Dear Sir/Madam,

RE: INTRODUCTORY LETTER.

I am a post-graduate at Kenyatta University currently conducting a study on: challenges of teaching and learning materials in public secondary schools Tana- River District in partial fulfillment of the requirement for the award of the degree of Master of Education of Kenyatta University.

I intend to use Principals, HODs Mathematics, Sciences, Languages, Technical, Humanities, Laboratory Technicians, Form Three and Four Students and Parent Representatives either form three or four as respondents. The findings will assist in making recommendations aimed at solving challenges of teaching and learning materials in the District.

The purpose of this letter is to inform you that I wish to be in your school to collect data on I look forward to receive assistance to accomplish my research.

Thanks in advance.

Yours sincerely,

David Kang'ethe.

**APPENDIX K:
Research Clearance Permit**

**APPENDIX L:
Tana River District map**

APPENDIX M: Sampled schools

Schools.

A -Wenje Secondary School.

B -Hola Boys Secondary School.

C -Mau Mau Girls Secondary School.

D -Hirimani Mixed Secondary School.

E -Madogo Mixed Secondary School.

F -Kipini Mixed Secondary School.