EFFICIENCY IN RESOURCE UTILIZATION IN PRIMARY SCHOOLS IN KENYA: A CASE OF GATUNDU NORTH DISTRICT, KIAMBU COUNTY, KENYA

PETER NJIRU IRERI

E55/CE/11770

A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR MASTERS OF EDUCATION DEGREE (PLANNING) KENYATTA UNIVERSITY.

AUGUST 2014.
DECLARATION

This thesis is my original work and has not been presented for a degree in any other University

Signature_________________ __________
Ireri Peter Njiru Date
REG: NO. E55/CE/11770/07

This thesis has been submitted for examination with our approval as university supervisors

Signature_________________ __________
Dr. Nobert Ogeta Date
Lecturer,
Department of Education Management, Policy and Curriculum Studies

Signature_________________ __________
Mr. Gatimu Kiranga Date
Lecturer,
Department of Education Management, Policy and curriculum Studies.
DEDICATION

To my wife Beatrice and children Tony, Paschal and Stella. May this work be an inspiration to your future success. To my parents and sisters. You have been a force from which I have always derived energy to soldier on.
ACKNOWLEDGEMENT

Am grateful to God for giving me the strength both mental and physical to undertake and accomplish this work. I am indeed indebted to my supervisors Dr. Nobert Ogeta and Mr. Gatimu Kiranga for their guidance, patience and service. Their professional suggestions and encouragements assisted me to complete this thesis. Special thanks to all my lecturers who saw me through my coursework.

I sincerely thank all my respondents for providing me with all the required information without which this work would not have been completed.

Special thanks go to my family members for their continuous support. To all my classmates for their ideas during discussions. To all those who helped me accomplish my mission.

May good lord bless you abundantly.
# TABLE OF CONTENTS

DECLARATION ............................................................................................................. i
DEDICATION ................................................................................................................. iii
ACKNOWLEDGEMENT ............................................................................................... iv
TABLE OF CONTENTS ............................................................................................... v
LIST OF TABLES ......................................................................................................... viii
LIST OF FIGURES ...................................................................................................... x
ABBREVIATIONS AND ACRONYMS .................................................................... xi
ABSTRACT .................................................................................................................. xii

CHAPTER ONE: INTRODUCTION................................................................................. 1
1.1 Background to the problem ................................................................................... 1
1.2 Statement of the Problem .................................................................................... 10
1.3 Purpose of the Study .......................................................................................... 11
1.4 Objectives of the Study ...................................................................................... 11
1.5 Study Questions .................................................................................................. 11
1.6 Significance of the Study ................................................................................... 12
1.7 Assumptions of the Study .................................................................................. 12
1.8 Limitation of the Study ...................................................................................... 12
1.9 Delimitations of the Study .................................................................................. 12
1.10 Theoretical Framework ..................................................................................... 13
1.11 Conceptual Framework ..................................................................................... 15
1.11 Operational Definition of Terms ....................................................................... 17

CHAPTER TWO ......................................................................................................... 19

LITERATURE REVIEW .............................................................................................. 19
2.1 Introduction .................................................................................................................. 19
2.2 Educational Resources ............................................................................................... 19
2.3 Availability of Educational Resources in Primary Schools .................................. 26
2.4 Hindrances to Efficient Resource Utilization in Primary Schools .................... 28
2.5 Summary of Literature review .................................................................................. 31
CHAPTER THREE ............................................................................................................. 32
RESEARCH METHODOLOGY .......................................................................................... 32
3.1 Introduction ................................................................................................................ 32
3.2 Research Design ......................................................................................................... 32
3.3 Study Location ............................................................................................................ 32
3.4 Target Population ....................................................................................................... 33
3.5 Sampling Technique and sample size ..................................................................... 33
3.6 Research Instruments ................................................................................................. 34
3.6.1 Questionnaire for Head Teachers ........................................................................ 35
3.6.2 Questionnaire for Teachers .................................................................................. 35
3.6.3 Interview Schedules for Quality Assurance Officers ........................................ 35
3.6.4 Classroom Observation Schedule ....................................................................... 35
3.7 Pilot Study ................................................................................................................... 36
3.8 Reliability .................................................................................................................... 36
3.9 Validity of the instruments ........................................................................................ 37
3.10 Data Collection techniques ..................................................................................... 37
3.11 Data analysis ............................................................................................................. 37
3.12 Ethical Issues and logistical considerations ......................................................... 38
CHAPTER FOUR .................................................................................................................. 39
RESULTS AND DISCUSSIONS .......................................................................................... 39
4.1 Introduction .................................................................................................................... 39
4.2 Demographic Information ............................................................................................ 39
4.3 Resources within Primary Education that Largely Influence Learner’s Performance. .............................................................................................................................. 52
4.4 Utilization of Available Resources in Schools in Gatundu North District .............. 61
4.5 Factors that May Hinder Efficient Utilization of Educational Resources in Primary Schools in Gatundu North District ................................................................. 70

CHAPTER FIVE .................................................................................................................. 74
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS ........................................... 74
5.1 Introduction .................................................................................................................... 74
5.2 Summary ...................................................................................................................... 74
5.3 Conclusion ................................................................................................................... 74
REFERENCES ................................................................................................................... 78
APPENDICES .................................................................................................................. 84
APPENDIX A : Questionnaire for head teachers ............................................................... 84
APPENDIX B: Questionnaire for Primary school Teachers ............................................. 87
APPENDIX C: Interview schedule for quality assurance officer ..................................... 90
APPENDIX D: Lesson Observation Schedule .................................................................. 92
APPENDIX E: WORK PLAN ............................................................................................ 93
APPENDIX F: Approximate Budget .................................................................................. 94
APPENDIX F: RESEARCH PERMIT ................................................................................. 95
LIST OF TABLES

Table 1: Annual Report of Primary Schools in Gatundu South District 2003 and 2004 .... 5
Table 2: Annual Reports of Primary Schools in Gatundu North District 2004 and .... 6
Table 3: School Returns between 2010 and 2011 .................................................. 7
Table 4: Mean score for Public Primary School in Gatundu North District 2007-2010 .... 8
Table 5: Mean scores for Private Primary Schools in Gatundu North from 2007-2010 .... 8
3.5 Sampling Technique and sample size ..................................................................... 33
Table 3.1: Summary for Head Teacher’s Sample in the District ............................... 34
Table 3.2: Summary for Teacher’s Sample in the District ...................................... 34
Table 4.1: Distribution by gender among respondents .............................................. 39
Table 4.2: Distribution by gender among head teachers .......................................... 40
Table 4.3: Distribution by gender among Quality Assurance and Standards Officer ..... 40
Table 4.4: Teachers’ qualifications ............................................................................. 41
Table 4.5: Head teacher’s qualification ..................................................................... 42
Table 4.6: Teachers working experience ................................................................. 43
Table 4.7: Head teachers working experience ......................................................... 44
Table 4.8: Distribution of the respondents by age, .................................................. 45
Table 4.9: Distribution of head teachers by age ....................................................... 45
Table 4.10: Gross enrolment in schools .................................................................. 46
Table 4.11: Number of streams in schools .............................................................. 47
Table 4.12: KCPE Performance from 2006 to 2007 ............................................... 48
Table 4.13: Measure to be taken to improve KCPE Performance ......................... 50
Table 4.14: Availability of Physical Facilities in the Schools, ................................. 52
Table 4.15: Availability of Textbooks in the Schools, ............................................ 55
Table 4.16: Availability of Text books in the Teaching Subjects ............................ 56
Table 4.17: Availability of Visual Aids ................................................................. 58
Table 4.18: Learning aids commonly Used by Teachers ...................................... 59
Table 4.19: Teachers’ absenteeism .................................................................. 61
Table 4.20: Workload of teachers .................................................................. 62
Table 4.21: Views of Head teachers on how often teachers Miss Classes ........ 64
Table 4.22: Inspection of teachers, ................................................................. 64
Table 4.23: Teacher’s In-service Courses and Workshops ............................... 65
Table 4.24: Preparation of lesson Plans ........................................................... 66
Table 4.25: Availability of Schemes of Work, .................................................... 67
Table 4.26: Availability of Teaching Aids in Learning ........................................ 68
Table 4.27: Are the lesson notes available ....................................................... 69
Table 4.28: Lesson Plan Preparation ............................................................... 70
Table 4.29: Factors that May hinder Efficient use of Educational Resources ........ 71
LIST OF FIGURES

Figure 1: Primary school Dropout Rates in Kenya (Source: Abagi, 2004) ...................... 4

Figure 4.1 Ratio of Text books in the Schools................................................................. 54

Figure 4.2 Reasons for not using Teaching Aids Regularly ............................................. 60
# ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEO</td>
<td>Area Education Officer</td>
</tr>
<tr>
<td>EFA</td>
<td>Education for All</td>
</tr>
<tr>
<td>FPE</td>
<td>Free Primary Education</td>
</tr>
<tr>
<td>GoK</td>
<td>Government of Kenya</td>
</tr>
<tr>
<td>KESSP</td>
<td>Kenya Education Sector Support Program</td>
</tr>
<tr>
<td>KCPE</td>
<td>Kenya Certificate of Primary Education</td>
</tr>
<tr>
<td>KICD</td>
<td>Kenya Institute of Curriculum Development</td>
</tr>
<tr>
<td>MDGs</td>
<td>Millennium Development Goals</td>
</tr>
<tr>
<td>MoE</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>NARCK</td>
<td>National Rainbow Coalition Government</td>
</tr>
<tr>
<td>QASO</td>
<td>Quality Assurance and Standards Officer</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
</tr>
<tr>
<td>SWAP</td>
<td>Sector Wide Approach to Planning</td>
</tr>
<tr>
<td>TMSS</td>
<td>Third International Mathematics and Sciences Study</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United</td>
</tr>
</tbody>
</table>
ABSTRACT

The Kenyan government introduced free primary education in 2003 in order to fulfill the commitments of the World education forum of 2000 as well as to make education accessible to all school age children irrespective of their social class. This initiative led to an upsurge in primary school enrolments with the resultant effects of numerous strains on human and material resources, high dropout rates and poor performance in national examinations. As a result of this, the government has been undertaking many reforms aimed at addressing the challenges resulting from education service expansion. The overall purpose of these reforms has been to improve efficiency in education provision by addressing factors that influence learning. Thus the purpose of the study was to assess the level of resource utilization in primary schools in Gatundu North District of Kiambu County. The research aspired to give possible suggestions on how resources can be used efficiently in primary schools. Since the introduction of FPE in 2003, a number of educational reforms have been put in place to address equity and access to education service but no significant ones have been made to address the way the resources provided by the government are being utilized. The objectives of the study were; to investigate the trend of examination performance over the years, to assess the availability and use of educational resources in the district and to investigate factors that may hinder efficient use of resources in the district. The study employed the theory of production as education today is viewed as a service where products are expected after using inputs. The study adopted a descriptive survey design and utilized both qualitative and quantitative approach. The target population of the study was 58 public primary schools in Gatundu North District. A total of 12 sample primary schools were selected using random sampling from the three existing zones. This formed 20% of the total school population. For each selected school, the head teacher and 5 teachers were targeted to respond to questionnaire items yielding 12 head teachers and 60 classroom teachers. Teachers were first stratified into male and female strata. There was also classroom observation and interview schedules for quality assurance officers. Pilot study was done with two schools neighboring the district and a reliability of 0.85 was established. Quantitative data was coded and analyzed using SPSS. Qualitative data was analyzed by arranging them according to objectives, research questions and themes. Data was then summarized using frequency tables and graphs. Inferences, conclusions and recommendations were then made. The findings revealed that from 2006 to 2011, almost all the schools in the district have been performing below average. It also revealed that some physical facilities and other strategic resources needed to support learning activities were lacking. The study also established that learning materials especially books were not adequate in the schools. Teachers prepare curriculum documents but most of them don’t use teaching aids regularly. To improve on KCPE performance, the study established that there is need to involve all the stake holders on matters related to the education provision and early syllabus coverage in all subjects at all levels. Use of resources was mainly hindered by their unavailability. The study recommends that all education stakeholders focus on equitable provision together with proper use, management and monitoring of educational resources in order to ensure efficiency in their use. The study was necessary in order to ensure efficiency in resource utilization in Gatundu North District.
CHAPTER ONE: INTRODUCTION

1.1 Background to the problem

Most African Governments, donor agencies and nongovernmental organizations embraced education for all (EFA) movement and took up the challenge of providing basic education to all school age children. This initiative culminated from World conferences on EFA in Jomtiem Thailand 1999 and World Education Forum of April 2000 in Dakar where the governments committed themselves to provide basic education for all by year 2015. The governments and donor countries also pledged to provide educational resources for educational provision service, (UNESCO 2005). Thus most African government made their targets of attaining UPE and EFA and set a considerable portion of their budgetary allocation to improve educational resources and teacher training.

The Kenyan government on its part placed its target of attaining universal primary education (UPE) by the year (2005) and EFA 2015 in order to fulfill the above commitments. Like most African countries, the Kenyan government has been increasing resources to the education sector in order to achieve its sector goals and objectives. To fulfill the commitments of the world education forum of 2000, the government reintroduced free primary education in 2003. It has also been undertaking many reforms aimed at addressing the overall goals of education. Some of these reforms include: increasing budget allocation to the education sector to cater for staff shortage and provision of teaching/learning materials, e.g. in 2003/04 financial year the government increased its education budget by 17.4% to K.sh. 79.4 billion (Government of Kenya 2005) and reintroducing of FPE in 2003 to make education accessible to all children of school going age. It has also taken some initiatives to
address the challenges faced by the education sector after the reintroduction of free primary education for instance KESSP. The rationale of these reforms has been to improve efficiency and cost effectiveness in resource allocation and utilization.

In the Sessional paper NO 1 of 2005 on ‘A policy Framework for Education Training and Research, the government aimed to consolidate the gains accrued from FPE, and to address the main issues in the education sector in order to strengthen management and delivery of education services to improve access, quality, equity and relevance of education and training. To make the Sessional paper operational, the government through the ministry of education developed the Kenya Education Sector support Programme (KESSP). Through the sector wide Approach to planning (SWAP) KESSP was to focuses on all issues related to education sub sector. One of the areas it concentrated on was the need for efficient utilization of available resources since this is critical to the attainment of education sector goals and priorities. The government also spelt out the need for efficient management and utilization of teachers who form a critical resource in the education provision service and the quality of learning outcomes. It articulated the need to improve capacity and effectiveness of the Ministry of Education Science and Technology and its institutions especially at the district level where most educational activities were to be concentrated. Through the KESSP initiative, the government was able to develop a complete set of strategies to deliver quality education and training to Kenyans through capacity building of teachers, provision of teaching and learning materials and rehabilitation of the existing physical facilities.

Following the implementation of free primary education, there was a dramatic increase in pupil enrolment with primary schools in Kenyan registering an increment
of 22%, (World Bank 2004). This brought numerous strains to the existing physical facilities and learning resources in schools. The government thus developed a programme of providing schools with learning resources which were initially provided by parents through the initiative of cost sharing introduced in 1998. However this initiative by the government cannot match the overwhelming numbers of pupils in primary schools and this necessitates the need for efficient utilization of the available resources to address the issue of quality in education provision which is perceived to be falling as indicated by poor performance at national examinations.

Eshiwani (1996) asserts that education resources can be defined from distant to proximal levels. From distant levels, they may only represent the availability and presence of textbooks in class but from proximal levels, they may include all that which comes into play to facilitate smooth learning. With this in mind we can perceive resources as the amount of time that we have, the space for activities and strategies, the people who can help, the places we might visit and the money available to facilitate the smooth learning of school programmes. All the above inputs should be utilized fully if education is to serve its objectives at both individual and national levels and be efficient.

The extent to which a school system is described as efficient depends almost entirely on the uninhibited flow of students from the initial grade to the final grade. (Gravenir, 2004). Wastage in primary schools is manifested in the form of repetition, dropout and low completion and graduation rates. Inefficient flow of students is accompanied by inefficient use of the scarce resources and students space. However school efficiency cannot only be measured by the smooth students flow from one grade to another especially in countries where there is government
regulation on repetition thus students may progress to higher grades without gaining meaningful experiences. Once enrolled, students drop out of school for a number of reasons including, the low quality of schooling, discouragement from poor performance, poor school environments and direct and indirect costs of schooling, (World Bank 2003). Thus, apart from reducing wastage to improve on efficiency of learning in primary schools, it is also necessary to improve on the curriculum, teaching and learning materials, teachers’ qualification, adequate facility, sufficient teaching and learning time, school environment and appropriate class size.

With the introduction of FPE in 2003, the GER increased from 92 percent in 2002 to 104 percent in 2003. This made the numbers in enrolment rise from 6131000 to 7208100 in 2003. This was followed by high dropout rates. A study carried out by the ministry of education showed that there is a high rate of school dropouts in Kenya.

![Primary school Dropout Rates in Kenya](Source: Abagi, 2004)
The study established that over 90 percent of public primary schools in Kenya lack access to save water and do not have even the simplest hand washing facility. Lack of such facilities and poor hygiene affect boys and girls although other reasons could be lack of pads for girls, poor family backgrounds, and poor parental attitudes towards education just to mention.

In the year 2002, Gatundu North District recorded 182 primary schools which included 153 public primary schools and 30 private schools with a total of 49266 learners, (Ministry of Education 2002). After the inception of FPE in the year 2003, the pupil’s population increased greatly from 49266 to 52822 at the beginning of the year. By the end of the year, the population had risen to 53142 pupils (MoE 2003). The enrolment changed greatly the following year with class one registering 8720 pupils down by 1320 a drop of 13.15 percent of the previous year. When comparison is done on the basis of promotion to the next class, the following changes was realized indicated by percentage decrease.

Table 1: Annual Report of Primary Schools in Gatundu South District 2003 and 2004

<table>
<thead>
<tr>
<th>Class</th>
<th>Year 2003</th>
<th>Class</th>
<th>Year 2004</th>
<th>Increase/Decrease</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5558</td>
<td>2</td>
<td>4745</td>
<td>-813</td>
<td>14.60</td>
</tr>
<tr>
<td>2</td>
<td>6344</td>
<td>3</td>
<td>5827</td>
<td>-617</td>
<td>9.83</td>
</tr>
<tr>
<td>3</td>
<td>6274</td>
<td>4</td>
<td>5922</td>
<td>-352</td>
<td>5.60</td>
</tr>
<tr>
<td>4</td>
<td>6604</td>
<td>5</td>
<td>6147</td>
<td>-457</td>
<td>6.92</td>
</tr>
<tr>
<td>5</td>
<td>5994</td>
<td>6</td>
<td>5322</td>
<td>-672</td>
<td>11.20</td>
</tr>
<tr>
<td>6</td>
<td>4283</td>
<td>7</td>
<td>3929</td>
<td>-354</td>
<td>8.26</td>
</tr>
<tr>
<td>7</td>
<td>7012</td>
<td>8</td>
<td>5405</td>
<td>-1607</td>
<td>22.90</td>
</tr>
</tbody>
</table>

Source: Gatundu North District Education office (2004)
The total number of pupils who dropped out of school between 2003 and 2004 were 4872 excluding pupils registered in standard one and form one intake in the year 2004.

Comparing the trend in the year 2004 and 2005, the following changes were realized.

Table 2: Annual Reports of Primary Schools in Gatundu North District 2004 and 2005

<table>
<thead>
<tr>
<th>Class</th>
<th>2004</th>
<th>Class</th>
<th>2005</th>
<th>Increase/Decrease</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5672</td>
<td>2</td>
<td>5219</td>
<td>-433</td>
<td>7.46</td>
</tr>
<tr>
<td>2</td>
<td>5427</td>
<td>3</td>
<td>5312</td>
<td>-515</td>
<td>8.81</td>
</tr>
<tr>
<td>3</td>
<td>6272</td>
<td>4</td>
<td>6312</td>
<td>+40</td>
<td>4.48</td>
</tr>
<tr>
<td>4</td>
<td>6604</td>
<td>5</td>
<td>6308</td>
<td>-296</td>
<td>1.40</td>
</tr>
<tr>
<td>5</td>
<td>6032</td>
<td>6</td>
<td>6122</td>
<td>+90</td>
<td>1.40</td>
</tr>
<tr>
<td>6</td>
<td>4283</td>
<td>7</td>
<td>4180</td>
<td>-103</td>
<td>0.20</td>
</tr>
<tr>
<td>7</td>
<td>7912</td>
<td>8</td>
<td>6820</td>
<td>-187</td>
<td>2.60</td>
</tr>
</tbody>
</table>

Source, Gatundu North District Education Office (2005)

The total number of pupils decreased by 1554 and increased by 130 between the year 2004 and 2005. The current situation of data collected from three randomly selected school returns in Gatundu North District shows a lot of wastage among primary school pupils.
Table 3: School Returns between 2010 and 2011

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>42</td>
<td>31</td>
<td>21</td>
<td>16</td>
<td>21</td>
<td>18</td>
</tr>
<tr>
<td>2</td>
<td>38</td>
<td>36</td>
<td>18</td>
<td>14</td>
<td>37</td>
<td>33</td>
</tr>
<tr>
<td>3</td>
<td>42</td>
<td>40</td>
<td>24</td>
<td>16</td>
<td>32</td>
<td>37</td>
</tr>
<tr>
<td>4</td>
<td>52</td>
<td>48</td>
<td>29</td>
<td>21</td>
<td>44</td>
<td>38</td>
</tr>
<tr>
<td>5</td>
<td>47</td>
<td>36</td>
<td>26</td>
<td>23</td>
<td>43</td>
<td>37</td>
</tr>
<tr>
<td>6</td>
<td>48</td>
<td>42</td>
<td>19</td>
<td>18</td>
<td>38</td>
<td>31</td>
</tr>
<tr>
<td>7</td>
<td>46</td>
<td>28</td>
<td>22</td>
<td>18</td>
<td>43</td>
<td>45</td>
</tr>
<tr>
<td>8</td>
<td>37</td>
<td>28</td>
<td>19</td>
<td>12</td>
<td>46</td>
<td>40</td>
</tr>
</tbody>
</table>

Source: Gatundu North District Education Office (2011)

The trend cited in table 3 is more pronounced in lower primary between standard one and standard two and between standard 2 and 3. In upper primary wastage is more pronounced between standard 7 and 8. This wastage could be as a result of inefficiency in use of resources among other factors. Efficiency as noted earlier is not only measured by the smooth flow of students from one grade to another but could be as a result of students frustration due to failure to gain meaningful learning experiences as indicated by poor performance in examinations. Table 4 shows the trend of KCPE Performance in Gatundu North District between the year 2007 and 2010.
Table 4: Mean score for Public Primary School in Gatundu North District 2007-2010

<table>
<thead>
<tr>
<th>Divisions</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chania</td>
<td>205.16</td>
<td>199.84</td>
<td>201.95</td>
<td>209.67</td>
</tr>
<tr>
<td>Mang’u</td>
<td>227.47</td>
<td>233.20</td>
<td>212.46</td>
<td>246.69</td>
</tr>
<tr>
<td>Githobokoni</td>
<td>214.76</td>
<td>212.76</td>
<td>215.32</td>
<td>214.12</td>
</tr>
<tr>
<td>District Mean</td>
<td>215.78</td>
<td>215.21</td>
<td>209.91</td>
<td>223.49</td>
</tr>
</tbody>
</table>

Source: Gatundu North District Education Office (2010)

From the above analysis, public primary schools have not been faring well in national exams as evidenced by the mean scores of less than 250 which is accepted as a fair performance. This is contrary to the results recorded by private primary schools within the same period provided in table 1.2.

Table 5: Mean scores for Private Primary Schools in Gatundu North from 2007-2010

<table>
<thead>
<tr>
<th>Division</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghania</td>
<td>315.37</td>
<td>311.32</td>
<td>310.41</td>
<td>304.22</td>
</tr>
<tr>
<td>Mang’u</td>
<td>262.49</td>
<td>294.36</td>
<td>342.00</td>
<td>343.82</td>
</tr>
<tr>
<td>Githobokoni</td>
<td>281.54</td>
<td>284.40</td>
<td>304.07</td>
<td>300.27</td>
</tr>
<tr>
<td>District mean</td>
<td>286.13</td>
<td>302.03</td>
<td>318.80</td>
<td>316.27</td>
</tr>
</tbody>
</table>

Source: Gatundu North District Education Office (2010)

The analysis provided shows that the district public primary schools have not been faring well in national exams as compared to the private ones. This is despite the
district being located in one of the economically high potential counties in the country. This could be conceived as inefficiency with which resources are being utilized in public primary schools among other factors. This arouses the interest of assessment of the adequacy, availability and utilization of resources in public primary schools for education service provision in the district.

The question confronting policy makers today is how available resources can be used more efficiently to make education achieve its objectives at both individual and national levels. These objectives are to enhance performance, reduce repeater rates, and increase graduation rates at the end of the cycle without clogging the system and to ensure that pupils transit to secondary level without much wastage.

Extensive research conducted in developing countries has largely focused on quality of education. If education is to enhance economic and social development in these countries, then careful attention must be paid to promote high standards of education everywhere. Data should be availed on how and where resources are to be allocated to assess progress (how resources are being used), for process evaluation (how resource distribution mechanisms operate) and for impact evaluation i.e. how additional resources target the outcome. In a nutshell this implies assessment of utilization of resources at the disposal of any education system to produce outcomes. With this in mind therefore there is need to assess how resources are used in Kenyan primary schools to predict how educational challenge of quality is being addressed. Thus the study will aspire to assess both human and material inputs in education provision service. They include; Teacher characteristics, Quality and provision of physical facilities, availability of instructional materials and time.
1.2 Statement of the Problem
By making primary education free in 2003, the government hoped that children from all social classes would access education and benefit from it. This was highly achieved as it led an increase of 22% in public primary school enrolment that jumped from 5.9 million to 7.2 million between 2003/2004,(World Bank 2004). However this was followed by high dropout rates in primary schools in Kenya and Gatundu North District was no exception as is shown on tables 2 and3 of the school returns. There has also been very poor KCPE performance over the years. The rise in enrolment had the resultant effect of overstressing the existing educational resources as was evidenced by; overcrowding in classes rooms, introduction of double and triple shifts, overstretching of physical facilities and shortage of teachers, textbooks and other learning materials. This compromised the quality of educational service offered because educational resources could not adequately serve the pupils in schools. The poor performance and the high drop out rates could have been as a result of the way resources are utilized thus there is need to assess the availability and the way these resources are utilized with a view to suggesting policy guidelines to guide the use of educational resources. Important to note is that the coverage, quality and effectiveness of education provision clearly depend to a large extent on the level, (amount) and the way resources are used. To achieve quality outcomes in schools, there is need to identify, allocate and utilize resources efficiently with a view to improving education provision service. Thus we need to make maximum use of the available resources and reallocate in areas of highest marginal productivity for internal efficiency. A clear knowledge of these variables and how they are utilized will provide a basis for formulation of policies that would lead to efficient use of resources in Kenyan
primary schools.

1.3 Purpose of the Study
The main purpose of the study was to assess the efficiency of resource utilization in schools in Gatundu North District to ensure quality provision of education service for efficiency.

1.4 Objectives of the Study
The study was based on the following objectives.

i. To investigate the trend of KCPE performance in primary schools in Gatundu North District

ii. To investigate the educational resources which could be fully utilized to provide relevant learning experiences for quality education in Gatundu North District

iii. To investigate the use educational resources in Gatundu North District

iv. To investigate factors that may hinder effective utilization of resources in primary schools in Gatundu North District.

1.5 Study Questions
The study was guided by the following questions

i. What has been the KCPE performance in public primary schools in Gatundu North District?

ii. Which educational resources are available in primary schools in Gatundu North District?

iii. Are the available resources in primary schools efficiently utilized in Gatundu North District?

iv. What factors may hinder efficient utilization of educational resources in
primary schools in Gatundu North District?

1.6 Significance of the Study
The biggest task facing the Kenyan education system is the provision of quality education. The teaching practices that will help resolve this problem are based on efficient use of resources at the disposal to support learning experiences. The study was vital in that it sought to identify management and policy guidelines which will ensure that resources are utilized to the maximum to uplift the quality of education in Kenyan primary schools. Once completed, the study may highlight to teachers and head teachers resource utilization approaches that may uplift the quality education given to learners in primary schools.

1.7 Assumptions of the Study
The study was based on the following assumptions

i. That effective allocation of resources encourages methods of teaching that are responsive to the needs of the learner.

1.8 Limitation of the Study
Since respondents were drawn from some selected schools in Gatundu North District, the effects would mainly reflect the situation in the district hence the findings of the study may not be representative of all the primary schools in Kenya.

1.9 Delimitations of the Study
The study focused on Gatundu North District and targeted class 1 to 8. It was restricted to public primary schools in the District. The information source was only from schools and education offices. The study only revolved within resource utilization in public primary schools.
1.10 Theoretical Framework

Any education discussions in economics must start with the production process where raw materials are converted into products through the use of some technology, Woodhall (1972). This process is based on production function which describes the physical relationship between firm inputs (resources) and its output. Production function is a theoretical construct that gives a mathematical expression to the production that defines the maximum output to be attained from a combination of different inputs. Blaug (1969) points that in the production function, a firm being the basic unit of production utilizes a variety of inputs (a b c d ---) to produce output(x). Expressed in a production function this takes the form \( x = f(a, b, c, d, ...) \) where \( f = \text{function} \).

The study therefore was based on the theory of production since today education service is viewed as an industry that uses a variety of inputs to produce output. Within the education setup the function is referred to as the education production function, (EPF).

Education managers are under pressure to justify the amount of resources they control. They are also asked to uphold the quality of outputs (standards) which are perceived to be falling irrespective of raised expenditure. The decision is to effect optimum allocation of resources. The EPF conceives a school as an enterprise where children who are seen as raw materials and other inputs such as teachers, books, physical facilities etc are combined through a given process of technology to produce certain products. Expressing this in the production function it takes the form \( A = f(TBCEF--\partial) \)

\( A = \text{Output (Performance)} \)
Education production function permits estimation of the marginal product of the school variable which according to Hanushek (1972) is the amount of output received from using one more unit of input when all other inputs are held constant and are used in their most productive manner.

In schools as in industries, three techniques are used. Cost Benefit Analysis (CBA), which analyzes a firm based on its profitability, CFA, Cost functional Analysis. Which assesses the extent to which resources are utilized, and Cost Effective Analysis CEA, Which analyzes a firm based on its decision regarding the most combination of inputs, i.e. the combination that produces maximum output at minimum costs. Of the three CEA is most superior as it compares policy issues in terms of the marginal impact on the outcomes relative to cost and helps remove some ambiguities in policy formulations. The schools need to assess the optimum combination of inputs when allocating resources to ensure that those that will generate maximum outcome on educational outcomes are given priority.
1.11 Conceptual Framework

A conceptual framework was developed to guide efficient use of resources.

![Diagram showing factors influencing resource utilization]

**Figure 2: Factors influencing Resource Utilization**

**Source: Researcher’s conceptualization  2012**

This conceptual framework was developed to show the forces in play to determine efficient resource utilization in primary schools. From the model, the independent
variables; namely time management, supervision and in service (processes) influence the inputs namely, teacher characteristics, physical facilities, instructional materials and time to determine the outcome, namely efficient resource utilization and examination performance. This may be confounded by the attitudes of the stakeholders towards use of resources. The intervening variable can be controlled if the researcher is able to isolate those stakeholders with negative attitudes towards efficient resource utilization. Educational resources need to be used efficiently to ensure that educational output (performance) is maximized. Most of the variables directly influence each other.
1.11 Operational Definition of Terms

Efficiency
This implies maximum utilization of educational resources for the purpose of attaining the educational goals and objectives, i.e., maximum use of available resources and in the right quantities in order to produce desirable outcomes.

Inputs.
Variables that go into the school system to add value to the educational outcomes.

Outputs
These are learning products either desired or undesired that are as a result of allocation of learning resources in the provision of education service namely performance.

Pupil/Teacher Ratio
These are the number of pupils attended by one teacher as indicated by the number of pupils in one class on average.

Quality
This are desired outcomes in the education system as indicated by good performance in examinations.

Resource
These are inputs that are allocated to enhance learning and are supposed to be used efficiently to enhance performance. They include human potentials, physical facilities and material that are used in teaching and
learning activities

**Teaching experience**
These are the number of years spent by a teacher in the teaching profession.

**Time**
This is the period teachers interact with learners in the school year as indicated by the number of periods a teacher is in class. It can be compromised by absenteeism of teachers and learners and other undertakings that are not within curriculum activities.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction
This chapter examined the literature based on the studies that have been done and are related directly or indirectly to the study. Literature related to efficiency and effectiveness in resource utilization in primary schools was reviewed. The review was centered on education outputs, availability of educational resources and hindrances to effective use of resources. This review was considered locally, regionally and internationally hence the gaps were reviewed.

2.2 Educational Resources
For any organization to learn smoothly to produce quality outcomes there must be adequate and quality provision of resources. A school like any other organization also requires resources to produce outcomes. Numerous studies conducted on inputs that impact significantly on performance indicate that educational resources play a big role on the overall performance of learners in schools. Kalundu (2002) and Marugu (2008) were in agreement that instructional materials have a significant effect on performance. They forwarded that teaching and learning resources should not only be provided to schools but they should be relevant and used efficiently if the desired quality of education is to be achieved. Orodho (1996) had asserted that resource availability and their utilization is very crucial in the achievement of good results. Orpwood (2001) noted that instructional materials when available and used well make learning easier especially when abstract concepts are learned. There are also important teacher related factors that influence performance that include teacher qualification and experience. However these studies did not try to assess the efficiency with which
these resources are being utilized in primary schools and especially in Gatundu north district. The current study tried to assess the efficiency with which learning materials are being utilized to enhance performance.

Fabunmi (1997) in his study on differential allocation of educational resources and secondary school academic performance in Edo state in Nigeria identified resources in an education establishment to include; students, personnel, physical facilities and finances. He noted that these are the variables that determine the rate of educational development of any learning institution. Teachers are important in that they must identify the most efficient and effective ways to combine human and material resources available in the school to achieve educational goals and objectives. Physical facilities are important because they determine the conduciveness of the working environment since deplorable environments are detrimental to smooth learning. Time use is also of essence because tasks should be completed within the stipulated duration.

First and foremost, teachers are human resources in the teaching and learning process. They are one of the most important inputs in the education system. They should use their potentials fully to facilitate the teaching and learning process. Thus effective management and utilization of this resource is critical to the quality of learning outcomes, GOK (2005). Teachers should be conversant with what they teach so the government should provide qualified teachers for quality provision of education service. Important teacher attributes are teaching experience as indicated by the number of years of teaching, level of training and regularity of in-service, academic qualification and in service courses attended to verse themselves with the changes in the education system.
Abagi and Odipo (1997) in their discussion paper 004/97 reveal that trained teachers are more effective than untrained ones. The implication here is that the government should employ more trained teachers instead of leaving schools to employ untrained ones to cater for the shortage if meaningful work is to be carried out in schools. This is in the wake of the present situation where pupil/teacher ratios have increased up to above 1:60 in some schools especially in slum areas. Studies carried out show that teacher characteristics and their motivational levels affect learning outcomes in schools.

Pritchet (2003) reveals that higher teacher salaries were associated with significant increase in test scores because of the motivation it brings. In addition, the results for repetition and dropout rates were inconsistent with being affected by school resources. Reduction in pupil teacher ratio is associated with reduced rates of dropout and repetition. The government should thus redeploy teachers from areas where there is overstaffing to areas where there is shortage for cost effectiveness. In addition to human resource, other important inputs are needed in the learning ad teaching process. They include physical facilities, learning hours and learning materials. Learning materials include published and unpublished aids, projected and non projected media and real objects etc. They may be defined from distance to proximal levels. From distance levels, they may only represent the availability and presence of textbooks in class but from proximal level they may include all that which comes into play to facilitate smooth learning, Eshiwani (1986). The study was on reviewing of learning resources in eastern and central Africa. The study had concentrated on the kind of learning resources that have more impact on learning outcomes. It pointed instructional materials such as textbooks, radio and other instructional media as
bearing significant impact on learning outcomes. Thus instructional materials that significantly influence educational attainment need be identified and utilized fully in the learning and teaching process. Orodho (1996) in a study on factors determining achievement in science subjects at secondary school level in Kenya had noted that effective use of learning resources such as textbooks, laboratory equipment and apparatus always led to higher achievement in test scores. However he did not assess the impact of equipment and other learning materials in primary schools. Thus the current study tried asset the availability of learning and physical resources in schools and how they are being utilized to enhance performance.

White (2004) in a study on the relationship between text books and achievement in Ghana availed test scores in 1998 and again in 2003 in order to assess learning improvement over the intervening years. A rigorous multiple regression analysis showed large gains in reading and mathematics. The study concluded that improved textbook provision was a significant factor. From the foregoing, if more resources were to be provided in schools, they should not be allocated equally to all forms of resources but more on learning materials since they have more influence on learning outcomes. Pritchet and Fuller (1999) carried out a study on allocating resources to the right area. They based their study in Northern Brazil and India. The study found that increase in the test scores per dollar spent on learning materials was about 19 times greater than increase in the teacher salary. This implies that if more resources were provided, they should not go equally to all areas but to learning materials in greater amounts. However the study did not look at the influence this would have in African countries like Kenya but nevertheless concluded that more efficiency and productivity
in any form of education provision service could be gained by reallocating more share of expenditure to areas of marginal productivity such as learning materials and textbooks. The current study tried to determine the allocation of resources by category and the level at which they are being utilized in primary schools.

Hanushek (2003) also used the Third International Mathematics and Science Study (TIMSS) data set in estimating an education production function. The study was investigating on school inputs that considerably impact on school outcomes. The study concluded that school resources are relatively more important to students’ achievements as compared to other factors such as family background in poor countries. Most studies reviewed under school learning materials pointed to the importance of teaching materials to effective provision of education service. Thus numerous studies need to be carried out in Kenya to investigate the contribution of learning materials on learning attainment. The current study tried to assess the effectiveness with which instructional materials provided.

The ministry of education when implementing the 8.4.4 system of education stipulated that primary school curriculum requires teacher/pupil contact hours of 25 hours per week comprising of 48 periods each 35 minutes for class 4-8 and 20 hours with 40 periods in std 1-3, Abagi and Odipo (1997). The achievement of this will imply that the system is using time efficiently. Lack of adherence will imply that syllabuses are not completed in time. Extra time may be required to complete the syllabus and teaching service become more costly as teachers will be paid for services they have not adequately rendered. This is inefficiency. According to the study, time is not utilized properly since a lot of it is wasted in prolonged non academic activities.
like school assemblies, tea and lunch breaks and morning sweeping exercises that take up to 60 minutes in the rural areas. From the above it is important to note that schools should program me their activities to only take the stipulated time to increase efficiency. Fisher et al (2002) in a study on alternative methods of study looked at the possibility of organizing education provision outside the school setup. The study tried to look at the possibility of how individual schools should organize themselves to encourage students to continue with their study at home after school for efficient time use. According to the study, individual skill accumulation depends on own aggregate efforts as well as the services offered at the school. However the study did not consider the situation in the rural Africa which is poverty stricken and children use the little available out of school time to do some economical work to substitute for what they cannot get from their poor parents. Fuel in these setups is also a problem so children cannot continue with their learning due to lack of appropriate source of energy.

Timothy (2003) on school outcomes and school costs reveal that the amount of time available for academic studies is consistently related to how much children learn in school. In general the more time teachers actually spend in teaching the more students learn. To him time allocated for study in hours is determined by the number of school hours allocated per subject, the official length of the school year in hours and the amount of time lost through school closing, exam marking, teachers’ and student’ absenteeism and miscellaneous interruptions. This time can further be compromised by time allocated for exam administration and marking and when teachers fail to introduce new topics due to student’s absenteeism. A costly but effective way of increasing school hours is by reducing class size. Smaller classes will increase
teacher/pupil contact hours. This will increase unit costs but in the long run might have some impact on performance. More study need to be carried out on the current pupil teacher ratio in primary schools and the way it affects learning and classroom management.

The importance of school physical facilities cannot be underscored as they determine the conduciveness of a school’s learning environment. Their appropriateness and adequacy play a big role in influencing the school outcomes. Mungai (2010) in a study on improvement on internal efficiency in primary schools in Kandara Division of Murang’a South district found that schools in the division lacked enough physical facilities. Classes were overcrowded and the toilets were not enough. The implication is that some students learn while standing and get exhausted very early in the day. This makes their learning less effective and affects performance negatively. However the study did not assess resource utilization and its impact on internal efficiency.

Wanderi (2011) in a study on barriers to effective utilization of resources in teaching/learning of sciences in secondary schools in Thika West District of Kiambu County found that there was shortage of physical facilities and space in the district. Laboratories lacked basic equipment and those that were there were shared by many students and this made learning very ineffective. She recommended that the government should provide the schools with more funds to improve on this. Thus the current study tried to investigate the availability of physical facilities in the schools and the learning materials at the disposal of students for efficient dissemination of education service.

Abagi and Odipo (1997) in a similar study had found that schools in Kenya lack
enough physical facilities. The environments were dilapidated and classrooms required some facelifts. Education attainments require an atmosphere that is conducive to learning. Students cannot learn well in classes that are leaking and overcrowded. In institutions where facilities are adequate and of good shape and learning environments conducive, order prevails and this translates into desirable educational outcomes. Adequate provision and efficient utilization of physical facilities would support student’s needs in schools. The above review shows the importance of educational resources on education provision service. Teacher characteristics, provision of physical facilities, effectiveness in time use and adequate provision and proper utilization of learning resources have been factored out as being significant determinants of educational attainment in primary schools and thus should be used efficiently for quality provision of education service. The present study aimed at assessing the level of adequacy and use of the school resource

2.3 Availability of Educational Resources in Primary Schools.
The capacity of a school to be effective and efficient to produce excellent educational outcomes is as a result of the interplay of several factors related to the intellectual assets, the school working environment and the deployment, allocation and utilization of resources. The way these factors are managed will determine the outcome of education service, either desired or undesired.

Hargreaves (2003) presents these factors as three forms of capital i.e. intellectual, social and organizational capital. The intellectual capital of the school is related to the skills, competences capabilities, expertise and practices of the students’ staff and communities. Organizational capital refers to the capacity of the school as an
institution to perform its primary function i.e. to employ, mobilize and make good use of its human and social capital. Students in school possess talents and acquire skills which if well directed can lead to good performance in national exams. Families and the surrounding communities if well organized can support the activities of an institution for its smooth learning. Teachers on the other hand should be managed in a way that allows them to maximize their potentials. Abagi and Odipo (1997) reveal that primary schools in Kenya are marred by a lot of inefficiencies. Completion rates have remained low for a long time i.e. less than 50%. School time has not been used efficiently and this has resulted to schools conducting tuition to make up for the lost time. This increases unit costs which pushes pupils from poor backgrounds out of schools. The study also sighted inefficiencies in important processes such as time management and poor policies that fail to recognize priority areas in resource allocation. Thus there is need to map out physical and material resources at the disposal that should be efficiently utilized to enhance quality outcomes in schools.

In reference to UNESCO (2006) besides the issue of distribution and equity, schools must also address ways to increase efficiency and effectiveness in their operations. In regard to improvement on efficiency they can free up resources to areas of growing importance such as investment in quality. This would address the issue of performance since primary graduates must perform well in national exams in order to secure places in secondary schools in addition to completing the primary cycle. The current study thus assessed the level of resource use in primary schools with a view to suggesting possible management practices which would ensure that resources are utilized efficiently for quality educational service provision.
Mungai (2010) in her study on improvement of internal efficiency in primary schools in Kandara Division of Murang’a south district found that primary schools in Kenya are understaffed and that there were inadequate facilities to secure internal efficiency. She recommended that the government should conduct in-service on management of resources for all teachers in the country. This will improve teacher’s class management skills on time and other resources available in schools. However the study did not investigate utilization of resources in primary schools.

**2.4 Hindrances to Efficient Resource Utilization in Primary Schools.**

Eshiwani (1996) asserted that the coverage, quality and effectiveness of education provision clearly depend on the amount (level) and the way resources are used. Numerous studies carried out on efficient utilization of resources both locally and internationally reveal that educational resources are not being used efficiently due to a number of underlying factors. These factors include; availability of adequate teaching staff, management of educational resources, Educational policies on resource utilization and teacher support services provided by the MoE.

In regard to provision of teaching staff, numerous studies show that schools in Kenya are understaffed. Mungai (2010) in her study on improvement of internal efficiency in primary schools in Kandara division of Murang’a district noted that primary schools in Kenya are understaffed. Most teachers taught the maximum 40 lessons and did not have adequate time for other important pedagogical activities such as; marking of pupils’ books, preparing lesson plans and making teaching aids just to mention. She recommended that the government should employ more teachers to bridge the gap that was created by the upsurge in pupil enrolment created by free primary education.
initiated by the NARC government. Eshiwani (1996) had also noted a similar problem in his study which had revealed that a considerable percentage of the teaching force was untrained. He recommended that the government should provide more resources for teacher training. Abagi and Odipo (1997) had noted a teacher pupil ratio of 40:1 an indication of efficiency in the system. However schools in the slums had a per teacher ratio of 60:1 which was not efficient since teachers lacked enough time to attend to an individual learner. They recommended that schools should introduce double shifts where some pupils would attend school in the morning and others in the afternoon to address access without compromising quality. Thus the government need to increase the number of teaching staff to bridge the staff gap to ensure that efforts made to increase access does not compromise quality. In addition to adequate staffing, there is need for efficient management of the school physical facilities and other resources which is mandatory to make the school a pleasant, save and comfortable centre for achievement Adayela (2000). According to him, the school administration has to play a major task which is to manage resources well. Teachers should also be versed with skills relevant for managing resources. Mogeni(2005) in his study on factors influencing utilization of resources in teaching Kiswahili in selected secondary schools in Transmara district in Kenya had noted that very few teachers in Kiswahili had any post-training sensitization on how to use instructional resources. His findings were that most teachers appreciated the importance of resources but they hardly used them. She recommended that the MoE should regularly visit schools to assess the availability, state and utilization of instructional resources. Mungai (2010) had also noted that most teachers lacked management skills in resource use especially the projected ones. She recommended that the government
should conduct regular in-service courses on management of resources in the country. Abagai and Odipo (1997) had also sighted the same problems that lead to instructional time wastage of 29, 13 and 4.2 minutes daily in rural, urban and private schools respectively. He recommended that to increase efficiency teachers and students had to use time effectively for syllabuses to be completed in time. From the foregoing, there is need to manage resources effectively to ensure that educational goals and objectives are realized.

Most activities that are undertaken in schools are guided by policies laid down by the MoE. These policies should serve to streamline the working in the learning institutions. Abagi and Odipo (1997) in their discussion paper identified poor policies on resource allocation and distribution as a factor predominant in Kenya education system. This results in inequalities in resource provision. The study also noted that when allocating resources, some areas of marginal productivity were neglected. The bulk of the recurrent budgetary allocation in the education sector went to teacher salaries while important areas like provision of learning materials were not adequately attended to. Thus effective and clear policies should be put in place to ensure that resource allocation target marginal areas.

Lastly it is important to note that knowledge is dynamic and learning experiences and teaching methods should be modified from time to time to suite the technological changes. Thus teachers need services that will enable them keep pace with the changing world. Teacher support services in Kenya are provided by such bodies as
KICD, Kenya Learning Resource Centre’s, Library services and teacher advisory centre’s TAC. Kiminza (1997) stipulated the services of the TAC centre’s as: In-service education centers, centre for dissemination of curriculum materials, centre for providing guidance and counseling and teaching and preparation canters. According to Ayot (1992) these centers have not been giving their services properly. TAC tutors lack funds to purchase materials as well as transport which makes them less effective. This is an indication that teachers have not been getting this important service which should orient them to changes and innovations in the education service. Government should also allocate enough funds for transport and purchasing of materials. This current study tried to assess the regularity with which teachers access these vital services to enable them carry out their duties effectively.

2.5 Summary of Literature review
In summary, literature on utilization of resources was covered adequately with some studies showing some significant relationship between use of some school inputs and school outcomes while other studies did not show any or little correlation. Most of the efficiency studies concentrated on the relationship between school outcomes and the inputs and did not assess the level at which these resources are being utilized in education provision apart from time as a resource. Thus the current study tried to assess the level at which human capital; physical facilities and instructional material were being utilized as a measure of efficiency in the system.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction
The methodology used in this research is presented in this chapter. The chapter comprises of research design, target population, description of the sample and sampling procedures, description of research instruments, data collection and data analysis procedures.

3.2 Research Design
The descriptive survey design was used in this study because it seeks to obtain information by asking individuals about their perception, attitudes, behavior or values (Mugenda & Mugenda 1991). Descriptive survey design is preferred because of its appropriateness in obtaining opinions, beliefs and attitudes from a large population in order to establish one or more population parameters. Survey research focuses on the vital facts of peoples’ beliefs, opinions, attitudes motivations and race through a structure and strategy of investigations concerned so as to obtain answers to research questions and control variance (Kerlinger, 1992)

3.3 Study Location
The study was located in Gatundu North District of Kiambu County. The district was selected because of its social economic setup. It has low and high potential. It was curbed from the wider Thika District and has three administrative zones namely, mang’u, Chania and Githobokoni. It has an area of 165 square kilometers. It has a forested area of 25 square kilometers. Its arable land is 10500 hectares and non arable is 34 square kilometers. At the time of the study, it had an approximate population 116854 people. The average farm size is 0.69 hectares and an average family size of 6
persons per family. Its altitude ranges from 1520 to 2250 meters above sea level. Average rainfall is 800 to 2000 millimeters per annum. Its main economical activities are growing of coffee, Tea and rearing of dairy cows and poultry faming. In spite of the district being located in one of the economically well to do counties in the country it has not been performing well in national exams at primary level (KCPE), thus arousing interest of assessing the level of resource utilization i.e. human, materials and physical facilities.

3.4 Target Population
The target population consisted of all public primary schools in the district. The district has 58 public primary schools with 58 head teachers and 501 teachers. Head teachers were chosen because they are mandated to manage resources in schools on behalf of the ministry. Teachers were chosen because they are directly involved in resource utilization in education provision service. Quality assurance officers were chosen because they are the people responsible for overseeing the use of educational resources in schools.

3.5 Sampling Technique and sample size
Stephen and McCarthy (1958) observe that a sample is a small part of a larger population selected for study. Due to constrain in cost, a selected sample was used to represent the whole population. Public primary schools were stratified into town and rural schools within each division. Schools were then selected from each stratum using simple random sampling to give a total of twelve schools four from each division. Gay (1983) cited by Mugenda and Mugenda (1999) suggest that for a descriptive study, 10-20% of the accessible population is enough. Thus 12 head teachers and 60 teachers were targeted for the study thereby forming 20% and 12% of
the entire population respectively. Ultimately, proportionate random sampling was used to get male and female teachers used in the study.

Table 3.1: Summary for Head Teacher’s Sample in the District

<table>
<thead>
<tr>
<th>Division</th>
<th>N (Population)</th>
<th>n (Sample)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Githobokoni</td>
<td>22</td>
<td>4.4</td>
<td>20</td>
</tr>
<tr>
<td>Chania</td>
<td>10</td>
<td>2.0</td>
<td>20</td>
</tr>
<tr>
<td>Mang’u</td>
<td>26</td>
<td>5.2</td>
<td>20</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>58</strong></td>
<td><strong>12.0</strong></td>
<td><strong>20</strong></td>
</tr>
</tbody>
</table>

Source: DEO, Gatundu North District (2012)

Table 3.2: Summary for Teacher’s Sample in the District

<table>
<thead>
<tr>
<th>Division</th>
<th>N (Population)</th>
<th>n (Sample)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
<td>Females</td>
<td>Totals</td>
</tr>
<tr>
<td>Gihubokoni</td>
<td>171</td>
<td>10.26</td>
<td>10.26</td>
</tr>
<tr>
<td>Chania</td>
<td>157</td>
<td>9.27</td>
<td>9.27</td>
</tr>
<tr>
<td>Mang’u</td>
<td>173</td>
<td>10.38</td>
<td>10.38</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>501</strong></td>
<td><strong>29.91</strong></td>
<td><strong>29.91</strong></td>
</tr>
</tbody>
</table>

Source (DEOs office Gatundu North District) 2012

3.6 Research Instruments

Questionnaires, interviews and classroom observation schedules were used as research instruments to collect data for this study. Questionnaires were used because they are very viable for gathering information from a large sample. Interviews and observation schedules give first hand information that is not distorted. Each of the tools is described below
3.6.1 Questionnaire for Head Teachers
The questionnaire for head teachers comprised open ended and closed ended items divided into three sections. Section A was on the demographic information of the head teacher, KCPE performance and brief overview of the school. Section B sought information on the physical facilities available in the school and Section C sought information about teachers’ supervision and record preparation.

3.6.2 Questionnaire for Teachers
The questionnaire for public primary school teachers comprised open ended and closed ended items which were divided into two sections. Section A tried to obtain teachers’ demographic information such as age, sex, experience, level of education, profession qualification and information about their work load. Section B sought information on availability and use of learning resources in the schools.

3.6.3 Interview Schedules for Quality Assurance Officers.
The researcher used a guided interview schedule to gather information from quality assurance officers. The schedule comprised of two sections, A and B. The first section sought demographic information about the officer while section B sought information on KCPE performance and use of human resource in the schools in the district.

3.6.4 Classroom Observation Schedule
The researcher personally observed lesson proceedings to try to obtain in-depth information pertaining resource utilization and preparation of lessons. The observation was done in all the twelve sampled schools. The classes that were observed were class one to class six. Five lessons were observed in each school. Class one was omitted due to their level of education and class seven and eight were left out because the researcher felt that the observation would cause them some
disturbances. The researcher followed a guided checklist in obtaining the information to avoid subjectivity and bias.

3.7 Pilot Study
The pilot study was done with one head teachers and two teachers from schools in the neighboring Gatundu South District which has similar characteristics with the district in study. This is within the range of 1-10% of the sample size. The minimum range for piloting in descriptive study as suggested by Mugenda & Mugenda (2003) should be 1 to 10 percent. This exercise was done to verify the appropriateness of the research instruments.

3.8 Reliability
This is the consistency in producing reliable results. Reliability focuses on the degree, to which empirical indicators are consistent across two or more attempts to measure theoretical concepts, Orodho (2004). Reliability is also referred to as the accuracy or precision of measuring instruments Kerlinger (1969). The researcher used test retest technique in order to test reliability of the instruments in the study.

The following steps were followed:

1. Developed questionnaires were given to few identified subjects
   (Not included in the study)
2. Answered questionnaires were scored manually,
3. the questionnaire items were administered to the same group after two weeks which was considered long enough to discourage similar responses from recall,
4. the questionnaire items were again scored manually,
5. a relationship between the two answers obtained in 2 and 4 was made.

A Pearson’s product formula for test retest was employed to compute the correlation
co efficiency to establish the extent to which the questionnaires were consistent.

Formula

\[ r = \frac{\sum XY - (\sum X)(\sum Y)}{N} \]

\[ \sqrt{\left[\frac{(\sum X^2 - (\sum X)^2)}{N} - \frac{(\sum Y^2 - (\sum Y)^2)}{N}\right]} \]

The reliability was calculated at an alpha level of 0.5

A reliability value of 0.85 was established from the results of the pilot study.

3.9 Validity of the instruments

Validity is the accuracy and meaningfulness of influence, what is the basis of the research results? Orodho (2004). Validity is the degree to which results obtained from the analysis of the data actually represent the phenomenon under investigation. The researcher sought expert opinion in assessing content validity. Expert in this area include the researchers supervisors who assessed the concept.

3.10 Data Collection techniques

Data was collected from the field through questionnaires, interview schedule and class observation schedules. The researcher personally visited the schools to meet teachers and head teachers to administer questionnaires. He also visited the District education offices to interview the QASO. Questionnaire respondents were given a period of two weeks after which the questionnaires were collected. The researcher also conducted classroom observation schedules to personally assess the way material and human resources were being utilized.

3.11 Data analysis

Statistical procedures were used to analyze both qualitative and quantitative data as per the objectives. The researcher categorized the instruments into homogenous
groups, coded and summarized quantitative information into frequencies and percentages. The instruments were categorized and tallied. The researcher transcribed all interviews and questions, looked for key words and phrases that had similar meaning, categorized issues into topics, compared responses from the three groups and reported the information in a manner that described the situation in the field. The qualitative data was analyzed using SPSS.

3.12 Ethical Issues and logistical considerations.
Before going into the field for data collection, the researcher sought a research permit from the Ministry of Education. Once the permit was given, the researcher sought consent from the District Education office at Kamwangi which is the district headquarters of Gatundu North District. This enabled him access primary schools in the district.
CHAPTER FOUR
RESULTS AND DISCUSSIONS

4.1 Introduction
This chapter covers analysis, Presentation and discussions of the results for the study on efficiency in resource utilization in Gatundu North District.

4.2 Demographic Information
The demographic characteristics were drawn from the responses to the items in section A of the questionnaires by the three categories namely, head teachers, teachers and Quality assurance and standards officer. Demographic information was necessary to identify the entry behavior of the respondents in terms of work experience in the teaching profession, age and qualification. Various demographic variables enabled the researcher to establish the relationship between their entry behavior and how they influence efficiency in resource use in primary schools in Gatundu North District.

Table 4.1 shows the distribution by gender among primary school teachers, head teacher and quality assurance officer.

Table 4.1: Distribution by gender among respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Alternative responses</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers</td>
<td>Male</td>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>30</td>
<td>50</td>
</tr>
</tbody>
</table>

A total of 60 teachers participated in the study, thirty males and thirty females. The two genders were equally represented.
Table 4.2: Distribution by gender among head teachers

<table>
<thead>
<tr>
<th>Variable</th>
<th>Alternative response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head</td>
<td>Male</td>
<td>7</td>
<td>58.33</td>
</tr>
<tr>
<td>Teachers</td>
<td>Female</td>
<td>5</td>
<td>41.67</td>
</tr>
</tbody>
</table>

A total of 12 head teachers participated in the study out of which 7 were male and 5 were females. The results showed that there is gender imbalance among the sampled head teachers. The results also indicate that sixty primary school teachers participated in the study and were equally represented for each gender.

Table 4.3: Distribution by gender among Quality Assurance and Standards Officer

<table>
<thead>
<tr>
<th>Variable</th>
<th>Alternative response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Assurance</td>
<td>Male</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>Officer</td>
<td>Female</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

From the data, there was only one quality Assurance and quality officer and he was a male.

The researcher also tried to find the qualifications of primary school teachers in the study. Data was collected from the sampled schools and the information was recorded as shown in table 4.4.
Table 4.4: Teachers’ qualifications

<table>
<thead>
<tr>
<th>Variable</th>
<th>Responses</th>
<th>N</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualification</td>
<td>p1</td>
<td>8</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>Of teachers</td>
<td>S1</td>
<td>60</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>ATS4</td>
<td>7</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ECD (Diploma)</td>
<td>7</td>
<td>16</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Graduate</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
</tbody>
</table>

The results from the data indicate that majority of the teachers working in the schools are diploma holders. Thus, (20) 33.33% of teachers working in the schools are p1 holders, (4) 6.67% are ATS4 while (4) 6.67% are S1 holders, (23) 38.33% are diploma holders and (9)15% are graduates.

These figures show that the teachers who participated in the study had varied academic qualifications. Majority of the teachers were ECD diploma holders. The study also showed that 15% were graduate teachers working in primary schools. Since the government allowed distance education and holiday programs in universities in the teacher upgrading programs, many P1 teachers have taken the opportunity to improve their academic and professional qualifications. Many have also undertaken training in diploma in ECD as a springboard to gaining admission to university education at their own cost so as to improve their career progression. This has led to an upsurge of graduate and diploma teachers in primary schools unlike in the past.
where such opportunities were not available. Contrary to the study done by Eshiwani (1996) on resources that largely influence learner’s performance where he noted that most teachers were not trained, this study established that today teachers are well trained on academic and professional areas.

The data collected regarding the qualification of head teachers was analyzed and reported on table 4.5

**Table 4.5: Head teacher’s qualification**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Responses</th>
<th>N</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Qualification</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Of head teachers</td>
<td>p1</td>
<td>(12)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>S1</td>
<td></td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>ATS4</td>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>ECD (diploma)</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

The data shows that 3, (25) percent of the head teachers are S1 of which 2 were males and 1 was a female. 1, (8.33) percent was an ATS4, while 6(50) percent had diploma in management three males and three females and 2(16.67) are graduates one male and one female. None of the head teachers is a p1. This follows the policy of the government requiring all head teachers to train in diploma in management,
The data collected regarding the working experience in years of the teachers who participated in the study was analyzed and reported as shown on table 4.6

### Table 4.6: Teachers working experience

<table>
<thead>
<tr>
<th>Variable</th>
<th>Alternative response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>Working</td>
<td>0-2 years</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Experience</td>
<td>3-5 years</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>6-10 Years</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Over 10 years</td>
<td>20</td>
<td>19</td>
</tr>
</tbody>
</table>

The results show that (38) 63.33% of the sampled teachers had worked for over ten years of which 20 were males and 19 were females. This is an indication that most teachers in the district had good teaching experience. The data also revealed that (12) 20.00% had a working experience of 6-10 years of which 6 were males and 6 females while (8) 13.33% of the teachers had a working experience of between 3-5 years where 3 were males and 5 were females. Thus most teachers had worked for more than 5 years. There were only 2, (3.33%) of teachers who had a working experience of 1-2 years in their teaching service.

The results of the study show that majority of the teachers who participated in the study had a working experience of above 10 years. From the data, the researcher concluded that most of the teachers had good teaching experience in their teaching profession as teachers. This gives teachers an added advantage in being very
resourceful and understanding of good management of resources. With such experience, teachers are better placed to use resources efficiently.

The data regarding the working experience of the sampled head teachers was collected and reported on table 4.7

**Table 4.7: Head teachers working experience**

<table>
<thead>
<tr>
<th>Variable</th>
<th>experience</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>Females</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Working</td>
<td>0-5 Years</td>
<td>3 3 6</td>
<td>50.00</td>
</tr>
<tr>
<td>experience</td>
<td>5-10 Years</td>
<td>2 1 4</td>
<td>25.00</td>
</tr>
<tr>
<td></td>
<td>Over 10 Years</td>
<td>2 1 4</td>
<td>25.00</td>
</tr>
</tbody>
</table>

The results showed that 6, (50) percent of the head teachers had a working experience of 0-5 years out of which 2 were males and 3 were females. This is an indication that half of the respondents had not worked for a long time as head teachers. The data further revealed that 3, (25) percent of the head teachers had worked for between 5-10 years for which 2 were males and 1 was a female and 3, (25) percent had an experience of more than 10 years. This is an indication that schools in Gatundu North District are headed by teachers with enough teaching experience.

The data regarding the ages of the sampled teacher responses was collected and analyzed as indicated on table 4.8. The results show that the teachers who participated in the study had varied ages.
Table 4.8: Distribution of the respondents by age

<table>
<thead>
<tr>
<th>Category</th>
<th>Age</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>Teachers</td>
<td>20-30 years</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>31-40 Years</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Above 40 Years</td>
<td>10</td>
<td>18</td>
</tr>
</tbody>
</table>

From the results, majority of the teachers were above 31 years. Thus 18, (30) percent of the teachers were aged between 20 to 30 year of whom 5 were males and 9 females. These teachers are young and are expected to be very active in their teaching activities. The results also indicated that 14, (23.33) % of the sampled teachers were aged between 31 and 40 years while 28, (46.67%) of the teachers were above 41 years. Thus majority of the respondent were young and energetic and the rest were mature enough to be responsible in dissemination of their services.

The data presented on table 4.9 represented the ages of head teachers.

Table 4.9: Distribution of head teachers by age

<table>
<thead>
<tr>
<th>Category</th>
<th>Age</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>Head</td>
<td>21-30</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>Teachers</td>
<td>31-40</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td></td>
<td>Above 40</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>QASO</td>
<td>Above 40</td>
<td>1</td>
<td>_</td>
</tr>
</tbody>
</table>
The results showed that all the head teachers were above 40 years. This is an indication that they have worked as teachers for a long time and so they very well understand what constitutes good management of educational resources to oversee efficient utilization of resources. Thus they should be at a better position of managing resources well.

The researcher sought information about the enrolment in the sampled schools. Data was collected and recorded in table 4.10.

**Table 4.10: Gross enrolment in schools**

<table>
<thead>
<tr>
<th>Question</th>
<th>Enrolment</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrolment in the school in the current year</td>
<td>100-250</td>
<td>4</td>
<td>33.33</td>
</tr>
<tr>
<td>The school in the current year</td>
<td>201-300</td>
<td>4</td>
<td>33.33</td>
</tr>
<tr>
<td>Above</td>
<td>301-400</td>
<td>2</td>
<td>16.67</td>
</tr>
<tr>
<td>Above</td>
<td>Above</td>
<td>2</td>
<td>16.67</td>
</tr>
</tbody>
</table>

The data showed that the enrolment of pupils in the sampled schools was low. Thus 4(33.33%) of the schools had an enrolment of 100 to 200 while 4(33.33%) of the schools had an enrolment of 201 to 300. Only 2(16.67%) of the sampled schools had an enrolment of between 301 and 400 and another 2(16.67%) had an enrolment of over 400 pupils. This is an indication that the enrolment in the schools may have gone down. Thus the researcher concluded that the gross enrolment in the schools was low.

Abagi and Odipo (1997) in their discussion paper had noted the same problem in
Kenya. They had noted that completion rates were very low and the dropout rates were very high. This implied lot wastage in the primary cycle.

The researcher also sought information on the number of steams in the sampled schools so as to investigate the class size in the sampled schools. Data was collected and recorded as shown on table 4.11.

**Table 4.11: Number of streams in schools**

<table>
<thead>
<tr>
<th>Question</th>
<th>Number of streams</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>How many streams</td>
<td>1</td>
<td>8</td>
<td>66.67</td>
</tr>
<tr>
<td>Are there in your School</td>
<td>2</td>
<td>4</td>
<td>33.33</td>
</tr>
<tr>
<td>School</td>
<td>More than 2</td>
<td>0</td>
<td>-</td>
</tr>
</tbody>
</table>

From the results, 8(66.67%) of the sampled schools were one steamed while 4(33.33%) of the schools were 2 streamed. None of the sampled schools had more than two streams. This is an indication that the average number of pupils per class is between 29 and 31 pupils. This complied with what was forwarded by Abagi and Odipo (1997) in their discussion paper where to them an optimum class should not exceed 40. This makes it easy for the teachers to attend to each individual learner. This is an indication that there is no congestion of pupils in the schools. The researcher thus concluded that the class size is manageable in primary schools in
Gatundu north district.

The researcher also sought information from the head teachers on the KCPE performance from the sampled schools from the year 2006 to 2011. Data was analyzed and recorded on table 4.12.

**Table 4.12: KCPE Performance from 2006 to 2011**

<table>
<thead>
<tr>
<th>Year</th>
<th>Means</th>
<th>Below 200</th>
<th>201-230</th>
<th>231-250</th>
<th>Above 250</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(f)</td>
<td>Percentage</td>
<td>(f)</td>
<td>Percentage</td>
<td>(f)</td>
</tr>
<tr>
<td>2006</td>
<td>8</td>
<td>66.67</td>
<td>3</td>
<td>25.00</td>
<td>1</td>
</tr>
<tr>
<td>2007</td>
<td>4</td>
<td>33.33</td>
<td>8</td>
<td>66.67</td>
<td>-</td>
</tr>
<tr>
<td>2008</td>
<td>5</td>
<td>41.67</td>
<td>7</td>
<td>58.33</td>
<td>-</td>
</tr>
<tr>
<td>2010</td>
<td>4</td>
<td>33.33</td>
<td>8</td>
<td>66.67</td>
<td>-</td>
</tr>
<tr>
<td>2011</td>
<td>4</td>
<td>33.33</td>
<td>7</td>
<td>58.33</td>
<td>-</td>
</tr>
</tbody>
</table>

From the results, only 2 of the sampled schools had ever recorded a mean of more than 231 between 2006 to 2007. Thus 8(66.67%) of the sampled schools registered a mean of below 200 in the year 2006 while 3(25%) registered a mean of between 201 to 230 and 1(8.33%) of the schools got a mean of between 230 and 250. Thus most of the schools got means of below 200 in the year 2006. In the year 2007, 4(33.33%) of the schools got a mean of below 200 while 8(67.67%) of the schools got a mean of between 201 to 300. None of the schools got a mean of above 231. Thus all the
schools got means of below 231. In the year 2008, all the schools got a mean of below 231. Thus 5(41.67%) of the schools got means of below 200 while 7(58.33%) of the schools got means of between 201 and 230. In the year 2009, 5(41.67%) of the schools recorded a mean of below 200 while 7 (58.33%) of the schools recorded means of between 201 and 230. None of the schools recorded a mean score of above 230. In the year 2010, 4(33.33%) of the schools got a mean of below 200 while 8(66.67%) of the schools got a mean of between 201 to 230. None of the schools got a mean of above 231. In year 2011 only 1 school recorded a mean of more than 250. Thus, 4(33.33%) of the schools got a mean of below 200 while 8(66.67%) of the schools recorded a mean of between 201 and 230 and 1(8.33%) of the schools recorded a mean of above 250. The results thus indicated that over the years, almost all the schools got means of less than 250. Thus the researcher concluded that the education service in the district was not efficient performance wise.

To follow on the same, the researcher also sought the views of the QASO on KCPE performance from the year 2006 to 2011. He said that the district had been progressing well over the years though the examination performance had not reached the required standards. This was revealed from his statement when he said, “The district has been recording an upward trend since its inception in 2009; however the performance is not interterm with the government provision of learning and teaching resources”.

This is an indication that the QASO felt that the district should perform better considering the level of resources provided by the government. His views coincided with the findings indicated on table 4.12 where the KCPE performance was noted to be below standards.
Further the head teachers were asked to comment on the measures taken to improve on KCPE performance in their schools. Data was collected and recorded in table 4.13.

**Table 4.13: Measure to be taken to improve KCPE Performance**

<table>
<thead>
<tr>
<th>Question</th>
<th>Responses</th>
<th>Frequencies</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>What measures are Increasing</td>
<td>learning materials</td>
<td>8</td>
<td>66.67%</td>
</tr>
<tr>
<td>Being taken to Improve</td>
<td>Improve the teaching methods</td>
<td>4</td>
<td>33.33%</td>
</tr>
<tr>
<td>Improve KCPE performance</td>
<td>Involving parents in learning</td>
<td>9</td>
<td>75.00%</td>
</tr>
<tr>
<td></td>
<td>Early syllabus coverage</td>
<td>7</td>
<td>58.33%</td>
</tr>
<tr>
<td></td>
<td>Regular use of teaching aids in lessons</td>
<td>9</td>
<td>75.00%</td>
</tr>
</tbody>
</table>

(Head teachers gave varied measures)

From the results, the respondents gave various measures that they are taking to improve on KCPE performance in their schools. Thus 8(66.67%) of the respondents felt that learning materials needed to be increased so as to upscale KCPE performance in the district while 4,(33.33%) of the head teachers felt that teachers needed to improve on their teaching methods. This could be an indication that teachers are not using the right methods and leaning materials are not enough. The results also indicated that 9(75%) of the respondents felt that parents need be involved more on their children’s learning and 7(58.33%) felt that syllabuses need be completed early in the year to give room for revision while 9(75%) felt that teachers need to use teaching
aids regularly. This could be an indication that some teachers do not complete their syllabuses and parents are not actively involved in their children’s learning.

The researcher also sought views of the QASO for the reasons he would attribute to the dismal KCPE performance in the district. The quality assurance and quality standards officer attributed the dismal performance to the following:

Inefficiency in use of human and learning resources. He said that teachers did not always use teaching aid regularly from the visits they had made in schools; He sighted gross absenteeism among head teachers as a major contributor.

He also sighted lack of involvement of all stakeholders; He said that parents in particular were not very co-operative in matters regarding the education of their children.

He also gave lack of syllabus coverage; He said that some teachers were not completing the syllabus in time in all classes. This coincided with the information gathered on table 4.14 where head teachers were required to give measure they were taking to improve performance of KCPE in the district. The researcher thus concluded that parents were not co-operative in matters regarding the education of their children, teachers were not using teaching aids regularly and syllabuses were not either being completed in time or not completed in schools in Gatundu North District.

The researcher further sought the views of the QASO on measures they were taking to improve KCPE performance. The QASO gave the following measures;

Involvement of all stakeholders to matters pertaining the learning of pupils,

Close monitoring of the performance of all the schools in the district

Close monitoring of the way resources are used in all the schools in the district

Thus the researcher concluded that resources were not being used efficiently
4.3 Resources within Primary Education that Largely Influence Learner’s Performance.

This part discusses the views of head teachers and teachers on availability of physical and learning resources in the schools. Attention was drawn to the two categories of resources namely, physical facilities and learning materials.

The data on table 4.14 gives views of head teachers on the availability of physical facilities in the sampled schools.

**Table 4.14: Availability of Physical Facilities in the Schools**

<table>
<thead>
<tr>
<th>Category (Facilities)</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>School radio</td>
<td>10</td>
<td>83.33</td>
</tr>
<tr>
<td>Library</td>
<td>2</td>
<td>16.00</td>
</tr>
<tr>
<td>Computer lab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity</td>
<td>4</td>
<td>33.33</td>
</tr>
<tr>
<td>Piped water</td>
<td>6</td>
<td>50.00</td>
</tr>
<tr>
<td>School playground</td>
<td>8</td>
<td>66.67</td>
</tr>
<tr>
<td>Resource room</td>
<td>7</td>
<td>58.33</td>
</tr>
<tr>
<td>School farm</td>
<td>6</td>
<td>50.00</td>
</tr>
<tr>
<td>School hall</td>
<td>4</td>
<td>33.33</td>
</tr>
</tbody>
</table>

The results show that (10) 83.33% of the sampled schools have radios. This is an indication that majority of the sampled schools receive radio programmes transmitted by KICD. While (2) 16% of the schools had school libraries. This is an indication that most schools do not have libraries.(6) 50% had piped water which implies that that half of the schools do not have clean water to wash hands after leaving the toilet and
before taking meals. 7, (58.33)% of the sampled schools had resource rooms. Thus most schools have areas where teachers can prepare learning aid while (8) 66.67% had school play grounds and (6) 50% had school farms while (4) 33.33% had school hall. Only 4(33.33%) of the schools had electric installation. Thus many schools could not access services provided by implements that require electricity.

The data shows that most of the schools have school radios which were provided by the government to enhance radio programmed lessons transmitted by KICD. It also indicated that no school had computer labs and very few schools have a workable library. The data also indicate that a half of the schools do not have piped water and this could compromise time use in schools and learners’ health since the schools lack water for students to use after visiting the toilets and before taking meals. Wanderi (2011) in a study on barriers to effective utilization of resources in Thika West District on teaching sciences in secondary schools had noted a similar situation where schools lacked basic facilities that contribute to students performing well. She had found that laboratories lacked basic facilities and recommended the Government to provide more funds to purchase them. Mungai(2010) had also come up with similar findings on her study on improving the internal efficiency of primary schools in Kenya. According to her study, schools in Kandara division of Thika district lacked enough physical facilities. Classes were overcrowded and toilets were not enough to cater for the enrolment in the schools and this affected performance negatively. This is an indication that most of the schools in the district lacked some of the physical facilities that facilitate the running of some important educational services. The researcher thus concluded that some physical facilities were not available in some schools.
The researcher also sought information from head teachers’ on the sharing of textbook from their schools. Data was collected and presented in figure 4.1.

![Bar chart showing text book sharing ratio across different classes.]

**Figure 4.1 Ratio of Text books in the Schools**

From the results, majority of the schools had 2 pupils sharing a text book in lower primary. Thus (75%) of the schools had two pupils sharing a text book in lower primary and 16.67% of the schools had pupils 3 sharing a text book in the same level. There was only one school, (8.33%) where more than 4 pupils were sharing a book. The researcher concluded that there were enough books in lower primary although the government projection was to have a text book per pupil in all primary schools. The same data also revealed that in class 4 to 6, (50%) of the schools had 2 pupils sharing a text book while (33.33%) of the schools had 3 pupils sharing a text
book and (16.67%) of the schools had more than 4 pupils sharing one text book. This is an indication that books are not enough in the sampled schools. Thus the researcher concluded that text books were not enough for class 4 to 6 in the schools. In class 7 and 8, the results showed that (50%) of the sampled schools had 2 pupils sharing a text book while (25%) of the schools had 3 pupils sharing a text book and (25%) of the schools had more than 4 pupils sharing a text book. In all no school in the district had attained a textbook ratio of 1:1. White (2004) in a study on the relationship between text books and achievement in Ghana had found that improved text book provision led to improved test scores. Abagi and Odipo (1997) in their discussion paper had noted classes of over 60 pupils and with very few books and where very little meaningful learning took place. They recommended that pupils should be provided with enough text books. For pupils to be able to do their homework even after schools, every pupil should have a copy of a text book for every subject. This is an indication that text books are not enough in schools in the district. The study also sought views of head teachers on the adequacy of the textbooks in the schools. Data was collected and recorded on table 4.15

Table 4.15: Availability of Textbooks in the Schools,

<table>
<thead>
<tr>
<th>Availability of textbooks</th>
<th>N</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate</td>
<td>12</td>
<td>4</td>
<td>33.33</td>
</tr>
<tr>
<td>Not adequate</td>
<td>8</td>
<td></td>
<td>66.67</td>
</tr>
</tbody>
</table>

The results shows that majority of the schools in the district do not have enough textbooks. Thus (8) 66.67% of the schools in the district do not have enough
textbooks while (4) 33.33% of the schools had enough text books. This is an indication that text books are not adequate in the schools. The researcher thus concluded that text books are not enough in the district. The researcher further sought information concerning availability of textbooks from the teachers in the subjects they taught. The data was collected using a 4-point scale and was analyzed as shown on table 4.16

**Table 4.16: Availability of Textbooks in the Teaching Subjects**

<table>
<thead>
<tr>
<th>Textbooks</th>
<th>Category (availability)</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of text books</td>
<td>Very adequate</td>
<td>1</td>
<td>1.67%</td>
</tr>
<tr>
<td>In the teaching subject</td>
<td>Adequate</td>
<td>15</td>
<td>25.00%</td>
</tr>
<tr>
<td></td>
<td>Inadequate</td>
<td>39</td>
<td>65.00%</td>
</tr>
<tr>
<td></td>
<td>Seriously inadequate</td>
<td>5</td>
<td>8.33%</td>
</tr>
</tbody>
</table>

From the results, (1) 1.67% of the teachers felt that the textbooks books were very adequate while (15) 25.00% said that they were adequate while (39) 65.00% of the teachers felt that the books were inadequate and (5) 8.33% were for the view that the books were seriously inadequate. This is an indication that schools in Gatundu North district have a serious problem of textbooks from the views of the subject teachers. This coincided with the views of head teachers from the data provided by table 4.15 and figure 4.1. Mogeni (2005) in a study on factors influencing teaching of kiswahili in secondary schools in Transmara district had noted that schools in the district lacked
enough and relevant Kiswahili text books. The same sentiments had been forwarded by Eshiwani (1996) when assessing resources that contributed much in performance in eastern and central Africa. He had noted that most schools lack the basic materials for learning especially text books. Text books are an important resource and should be availed sufficiently. The researcher thus concluded that text books were not adequate in the subjects.

The researcher also sought views of the QASO on the availability of learning resources. The QASO was for the view that all the schools in the District had been provided with enough learning materials. The problem was that most of the head teachers failed to follow the policy guidelines given by MoE on the procurement and maintenance of textbooks such as covering and enforcing replacement once books were lost by pupils. He was also of the view that head teachers’ bought different series of books every year. This made it impossible to attain the book ratio of 1:1 since schools ended up by having many series of a few books for each subject per class. His sentiments contradicted the views of the head teachers and teachers that text books were not enough in the schools. However his views coincided with the views of Adayele (2000) who said school heads must gather skills of managing the available resources well for efficient utilization of resources. This is an indication that there was a problem of maintenance of textbooks in the schools in the district.

The researcher also sought information on the availability of other learning aids in the schools. Teachers were provided with commonly used teaching aids in schools.

The data on table 4.17 sought views of teachers on the availability of other learning aids apart from text books.
Table 4.17: Availability of Visual Aids

<table>
<thead>
<tr>
<th>Learning Aids</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posters</td>
<td>13</td>
<td>21.66</td>
</tr>
<tr>
<td>Charts</td>
<td>33</td>
<td>55.00</td>
</tr>
<tr>
<td>Newspapers</td>
<td>8</td>
<td>13.33</td>
</tr>
<tr>
<td>Pictures</td>
<td>33</td>
<td>55.00</td>
</tr>
<tr>
<td>Maps</td>
<td>55</td>
<td>91.67</td>
</tr>
<tr>
<td>Slides</td>
<td>_</td>
<td>0</td>
</tr>
<tr>
<td>Filmstrips</td>
<td>_</td>
<td>0</td>
</tr>
<tr>
<td>Radio</td>
<td>28</td>
<td>46.67</td>
</tr>
</tbody>
</table>

N= (60) (Percentages based on responses for each teaching aid)

From the results, (13) 21.67% of the teachers said that there are posters in their schools and (8) 13.33% said that their schools had newspapers while (33) 55% pictures. (55) 91.67% of the schools had maps while (28) 46.67% had radios. None of the teachers confirmed the availability of slides and filmstrips in their schools. From the results, majority of the schools had maps and pictures and quite a number had radios. The researcher thus concluded that all schools lacked most of the commonly used teaching aids in schools. To follow on the same the researcher sought information on the teaching resources that were commonly used by teachers.

The data on table 4.18 sought to identify the learning aids that were commonly used by teachers in the schools.
Table 4.18: Learning aids commonly used by Teachers

<table>
<thead>
<tr>
<th>Learning aid</th>
<th>Frequency</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posters</td>
<td>13</td>
<td>21.63</td>
</tr>
<tr>
<td>Newspapers</td>
<td>7</td>
<td>11.67</td>
</tr>
<tr>
<td>Pictures</td>
<td>33</td>
<td>55.00</td>
</tr>
<tr>
<td>Maps</td>
<td>47</td>
<td>78.33</td>
</tr>
<tr>
<td>Slides</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Filmstrips</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Radio</td>
<td>22</td>
<td>36.67</td>
</tr>
<tr>
<td>charts</td>
<td>38</td>
<td>63.33</td>
</tr>
</tbody>
</table>

(Percentages are based on every teaching aid)

From the results, (13) 21.67% of the teachers use posters, (7) 11.67% commonly use newspapers and (33) 55% pictures while (47) 78.33% use maps. Only (22) 36.67% use radio and (38) 63.33%. None of the teachers had used filmstrips and slides. Thus majority of the teachers use maps and pictures which are provided in textbooks and a few use radios and posters. The findings were in agreement with the findings of Mungai (2010) in her study of on improvement of internal efficiency in Kandara division where she had noted that most teachers lacked the basic skills to use some resources especially the projected ones. She had also noted that most teachers do not use some resources. She recommended the Government to give teachers orientation on how to use electronic resources. Mogeni (2005) in his study on factors influencing the teaching of Kiswahili in Transmara had also noted that teachers do not use teaching aid because of poor attitudes towards their use. According to his study, many teachers felt that using teaching aids was time consuming. The researcher thus
concluded that most teachers do not use teaching aids in their teaching activities and this could be a contributor to the poor results in the schools in the district.

The researcher also sought views of the teachers on reasons as to why they failed to use some of the resources mentioned on table 4.18. The answers to the questions were grouped into those that were similar and analyzed in figure 4.2

![Chart showing reasons for not using teaching aids regularly](image)

**Figure 4.2 Reasons for not using Teaching Aids Regularly**

From the results 76.67% of the teachers attributed failure to use some learning aid to unavailability. This indicates that schools in the district lack basic teaching aids. The data also revealed that 35% of the teachers felt that most teaching aids were too expensive for the schools to buy and 88.33% felt that use of some teaching aids was time consuming. Teachers can make simple teaching aids from locally available
materials. This can go a long way to reducing the cost of acquiring teaching aids. Only 30% of the respondents attributed the failure to use some resources to lack of power. This coincided with the findings from the data provided on table 4.14 where most schools had no electric connection. They were also in agreement with the findings from the study done by Mogeni (2005) in Transmara on factors influencing the teaching of Kiswahili where most teachers felt that using some resources was time consuming. The study had also shown that most resources were either not available or not adequate. The researcher thus concluded that teachers failed to use some teaching aid because of unavailability and lack of enough time.

4.4 Utilization of Available Resources in Schools in Gatundu North District.
This part discusses views of head teachers on the utilization of available resources in the schools in Gatundu North District. It also discusses the findings of the research on the use of human resource from classroom.
Table 4.19 gives data on views of head teachers on absenteeism of teachers from schools. The question was given on a 4-point scale ranging from very often to very rarely.

Table 4.19: Teachers’ absenteeism

<table>
<thead>
<tr>
<th>Question</th>
<th>Alternative</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often do teachers</td>
<td>Very often</td>
<td>_</td>
<td>0</td>
</tr>
<tr>
<td>Absent themselves with</td>
<td>Often</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>Or without permission</td>
<td>rarely</td>
<td>5</td>
<td>41.67</td>
</tr>
<tr>
<td></td>
<td>Very rarely</td>
<td>4</td>
<td>33.33</td>
</tr>
</tbody>
</table>
From the result of the findings, (3) 25% of the respondents were for the view that teachers often absent themselves from school. This implies that some teachers absent themselves from schools in the district. This could compromise syllabus coverage in some subject. The data also revealed that (5) 41.67% of the head teachers felt that teachers rarely absent themselves and (4), 33.33% were for the view that teachers very rarely absented themselves from schools. Timothy (2003) in a study on school outcomes and schools costs forwarded that the amount of time available for study is consistently related to how much children learn. Also the amount time teachers spend with their students determine how much meaningful learning experiences children acquire. Thus teachers need to be regular in school attendance. The finding of the study was that most teachers rarely absent themselves from schools although some teachers absented themselves from schools with or without permission. This could be a factor leading to poor performance in KCPE the district. The researcher thus concluded that teachers rarely absent themselves from schools.

The researcher also sought information about the workload of teachers in the sampled schools. The data on table 4.20 shows the work load of teachers as indicated by the number of lessons taught in a week.

**Table 4.20: Workload of teachers**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Alternative</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lessons taught by</td>
<td>Less than 15</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Teachers in a week</td>
<td>15-20</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>20-30</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Above 30</td>
<td>42</td>
<td>70</td>
</tr>
</tbody>
</table>
From the results majority of the teachers teach more than 30 lessons per week whereas a considerate number of them teach between 20-30 lessons per week. None of the teachers teach less than 15 lessons per week. Thus from the data, (3) 5% of the teachers’ teach 15-20 lessons per week, while (15) 25% taught 20-30 and (42) 70% of the teachers taught more than 30 lessons. Thus most of the sampled teachers teach more than 30 lessons per week. The researcher thus concluded that most of the teachers are in class throughout the day. Thus they may lack time for other pedagogical activities such as marking of pupil’s books and preparing curriculum documents.

These results were in agreement with the findings forwarded by Mungai (2010) in a study on improvement on internal efficiency in Kandara division where most teachers in the District taught the maximum 40 lessons. She recommended that the government employ more teachers to bridge the gap created after the implementation of FPE. Eshiwani (1996) had noted a similar problem in his assessment of resources that influence performance in Eastern and Central Africa where he noted that schools were under staffed and taught by untrained teachers. The researcher thus concluded that teachers were teaching very many lessons in the schools in the district. The data on table 4.21 sought information from head teachers on how often teachers miss lessons. The questions were provided on a 4-point scale ranging from very often to very rarely and recorded into frequencies and percentages.
Table 4.21: Views of Head teachers on how often teachers Miss Classes.

<table>
<thead>
<tr>
<th>Question</th>
<th>Alternative</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often do Teachers miss</td>
<td>Very often</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>Teachers miss Classes</td>
<td>Often</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>Rarely</td>
<td>3</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Very rarely</td>
<td>9</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

From the results, (9) 75% of teachers very rarely missed classes while (3) 25% rarely missed classes. The finding of the study was that teachers rarely miss classes. The findings coincided with the results from table 4.16 which showed that teachers are rarely absent from schools. The researcher thus concluded that teachers rarely miss classes when they are in school.

One of the managerial activities of the head teachers and the quality assurance office is to inspect the teaching processes of the teachers and the preparation of the professional documents. Thus one of the questions sought to investigate whether teachers were regularly inspected to ensure that they carried out their work professionally. The question on how regularly teachers were inspected was given on a 4 point scale and the results were recorded on table 4.22 below.

Table 4.22: Inspection of teachers,

<table>
<thead>
<tr>
<th>Question</th>
<th>Alternative (response)</th>
<th>Frequency</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often are your teachers inspected</td>
<td>very often</td>
<td>7</td>
<td>58.33</td>
</tr>
<tr>
<td></td>
<td>Often</td>
<td>5</td>
<td>41.67</td>
</tr>
<tr>
<td></td>
<td>Rarely</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td></td>
<td>Very rarely</td>
<td>_</td>
<td>_</td>
</tr>
</tbody>
</table>
From the results (7) 58.33% of the head teachers indicated that their teachers are very often inspected while (5) 41.67% said that their teachers are inspected regularly. This indicates that most of the teachers from the sampled schools are inspected regularly. Thus there are some teachers who are not inspected very regularly. The researcher thus concluded that all the teachers are not inspected regularly.

Teachers should attend in-service courses regularly to verse themselves with innovations in the curriculum. Thus the researcher sought to investigate how regularly teachers attend in service courses and workshops. Data was collected and recorded as indicated on table 4.23 showing views of teachers on how regularly they attended in-service courses and workshops.

### Table 4.23: Teacher’s In-service Courses and Workshops

<table>
<thead>
<tr>
<th>Question</th>
<th>Alternative</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often do you attend</td>
<td>Very often</td>
<td>8</td>
<td>13.33</td>
</tr>
<tr>
<td></td>
<td>Often</td>
<td>12</td>
<td>20.00</td>
</tr>
<tr>
<td>In-service courses</td>
<td>Rarely</td>
<td>31</td>
<td>51.67</td>
</tr>
<tr>
<td></td>
<td>Very rarely</td>
<td>9</td>
<td>15.00</td>
</tr>
</tbody>
</table>

The results of the study indicated that most teachers in the district do not attend in-service courses regularly. Thus only 8(13.33%) of the teachers very often attend in-service courses and 12(20%) of the teachers attend in service courses regularly.31 (51.67%) of the teachers rarely attend in-service courses and 9(15%) very rarely
attend the courses. Thus most of the teachers in the district do no attend in-service courses regularly. The results were in agreement with the findings of Ayot (1992) where most TAC centers were unable to provide their services because they lacked funds. Mogeni (2005) on her study on factors influencing the teaching of Kiswahili in Transmara had found that most Kiswahili teachers had no post training sensitization on how to use instructional resources. He recommended that the MoE to regularly visit schools and assess the availability, state and utilization of educational resources as well as in-service teachers. The researcher thus concluded that teachers in the district do not attend in-service courses and workshops regularly.

Preparation of professional documents is very important in the education service. Thus one of the questionnaire items sought to investigate from the head teachers how regularly teachers prepared professional documents. The question was given on a 4 point scale ranging from very often to very rarely and the data collected was recorded on table 4.24

<table>
<thead>
<tr>
<th>Question</th>
<th>Alternative</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often do teachers</td>
<td>Very often</td>
<td>9</td>
<td>75</td>
</tr>
<tr>
<td>From your school prepare Plans</td>
<td>Often</td>
<td>6</td>
<td>25</td>
</tr>
<tr>
<td>Plans</td>
<td>Rarely</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td></td>
<td>Very rarely</td>
<td>_</td>
<td>_</td>
</tr>
</tbody>
</table>

The result of the data showed that all teachers regularly prepare lesson plans. Thus from study (9)75% of the teachers very often prepared lesson plans while (3) 25% do
not prepare lesson plans regularly. This implies that teachers prepare lesson plans regularly. The researcher thus concluded that teachers prepare lesson plans regularly. The researcher also conducted lesson observation schedules to investigate the use of Learning material and preparation of curriculum documents during lesson proceedings. A guided question was used to get information pertaining preparation of lesson plans and schemes of work and use of teaching aids and textbooks in the lesson proceedings. Checking of the curriculum documents was done after the teacher completed the lesson to prevent interference with the lesson proceedings. One of the questions sought to find out whether teachers use teaching aids in their lessons. Table 4.25: gives information on availability of schemes of work.

<table>
<thead>
<tr>
<th>Question</th>
<th>Alternative</th>
<th>Class</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are the schemes of work available</td>
<td>Yes</td>
<td>2 and 3</td>
<td>24</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>2 and 3</td>
<td>-</td>
<td>3.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 to 6</td>
<td>2</td>
<td>3.33</td>
</tr>
</tbody>
</table>

The results indicated that most of the teachers had schemes of work. Thus 24(40%) of teachers in class 2 and 3 and 34(51%) of teachers in class 4 to 6 from the lessons observed had schemes of work. Only 2(3.33%) of the lessons observed did not have schemes of work. Thus all the teachers in class 2 and 3 had schemes of work. It was only some teachers from class 4 to 6 who did not have schemes of work which
comprised 2(3.33%) of the sampled teachers. This is an indication that teachers prepare schemes of work very regularly in the district.

The study also sought to investigate whether teachers use teaching aids in their lesson proceedings.

The data on table 4.26 show information on the use of teaching aids in learning.

Table 4.26: Availability of Teaching Aids in Learning.

<table>
<thead>
<tr>
<th>Category</th>
<th>Alternative</th>
<th>class</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the teacher using</td>
<td>2 and 3</td>
<td>24</td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>Teaching aids</td>
<td>yes</td>
<td>4 to 6</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>33.33</td>
</tr>
<tr>
<td>No</td>
<td>2 and 3</td>
<td>_</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>4 to 6</td>
<td>21</td>
<td></td>
<td>35</td>
</tr>
</tbody>
</table>

From the results all the teachers in lower primary use teaching aids. Thus 24(40%) of the teachers in class 2 and 3 were using teaching aids in their lesson proceedings. This implies that teachers in lower primary regularly use teaching aids. The study also showed that 15(25%) of the lessons observed were conducted with teaching aids in class 4 to 6 while 21(35%) of the lessons in the same class were conducted without teaching aids. The results indicated that teachers in lower primary regularly use teaching aids but some of those in upper primary did not prepare lesson plans regularly.
The researcher tried to investigate whether teachers prepare lesson notes before going to class. Data was collected and recorded in table 4.2.

**Table 4.27: Are the lesson notes available**

<table>
<thead>
<tr>
<th>Question</th>
<th>Alternative</th>
<th>Class</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the teacher</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have lesson notes</td>
<td>Yes</td>
<td>2 and 3</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 to 6</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>2 and 3</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 to 6</td>
<td>22</td>
</tr>
</tbody>
</table>

The results of the study showed that not all the sampled teachers were using lesson notes in their lesson proceeding. Thus 18(30%) of the lessons observed in class 2 and 3 were conducted by teachers who had prepared lesson notes while 6(10%) in the same classes were conducting lesson without lesson notes. This is an indication that all the teachers in lower primary do not prepare lesson notes before attending lessons. The results also indicated that in class 4 to 6, 14, (23.33%) of the teachers were conducting lessons with pre prepared lesson notes while 22, (36.67%) were conducting lessons without lesson notes. The researchers further noted that most of these teachers were picking bits of information from textbooks as they taught. Thus the researcher concluded that very many teachers in the district do not prepare lesson notes. The data on table 4.28 shows information on how teachers prepare lesson plans.
Table 4.28: Lesson Plan Preparation

<table>
<thead>
<tr>
<th>Question</th>
<th>Alternative</th>
<th>class</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has the teacher</td>
<td>Yes</td>
<td>2 and 3</td>
<td>19</td>
<td>31.67</td>
</tr>
<tr>
<td>Prepared a lesson Plan</td>
<td></td>
<td>4 to 6</td>
<td>21</td>
<td>35.00</td>
</tr>
<tr>
<td>Plan</td>
<td>No</td>
<td>2 and 3</td>
<td>5</td>
<td>8.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 to 6</td>
<td>15</td>
<td>25.00</td>
</tr>
</tbody>
</table>

The results indicated that not all the lessons that were observed were conducted by teachers who had written lesson plans. Thus, 19, (31.67%) of the lessons observed in class in class 2 and 3 were conducted by teachers who had written lesson plans while 5 (8.33%) of the observed teachers in the same class did not have lesson plans. This is an indication that majority of the observed teachers in lower primary prepare lesson plans though quite a number of the teachers did not have lesson plans. The study also revealed that in class 4 to 6, 21(35%) of the observed lessons were conducted by teachers who had prepared lesson plans while 15(25%) in the same class did not have lesson plans. Thus very many teachers in class 4 to 6 did not have lesson plans.

4.5 Factors that May Hinder Efficient Utilization of Educational Resources in Primary Schools in Gatundu North District.

This part discusses the views of head teachers, teachers and QASO on factors that may hinder efficient resource utilization in primary schools in Gatundu North District. These three categories of respondents were given open ended questions to respond to. The responses to the question on factors that hinder utilization of resources were grouped into similarities, transcribed and analyzed and then computed into percentages. The data on page 4.29 show views of teachers and head teachers on
factors that may hinder efficient use of educational resources in the schools in the learning process.

<table>
<thead>
<tr>
<th>Question</th>
<th>Responses</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factors that hinder use of some educational Resources</td>
<td>Lack of power</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Time not availability</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Tedious to make (teaching aids)</td>
<td>32</td>
</tr>
<tr>
<td>Resources</td>
<td>Unavailability</td>
<td>47</td>
</tr>
<tr>
<td>Head teachers</td>
<td>Lack of enough time</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Unavailability of resources</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Lack of proper storage</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Lack of qualified personnel</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Reluctance to use resources</td>
<td>8</td>
</tr>
</tbody>
</table>

(Teachers and head teachers gave varied reasons)

From the results, most teachers indicated that they failed to use some resources because these resources were not available. Thus 40, (66.67%) of sampled teachers attributed the failure to use educational resources to lack of power. This coincided with the data given on table 4.14 where most schools lacked electric installation. The results also indicated that 19, (31.67%) of the teachers attributed failure to use some resources to lack of enough time while 32, (53.33%) of the teachers said that making
teaching aids was very tedious. This agreed with the results on table 4.9 where most teachers had a work load of more than 30 lessons in a week. 42 (78.33%) of the teachers indicated that some resources were not available in the school. Thus according to the teachers use of resources was mostly hampered by lack of power, unavailability of some resources and lack of enough time.

The data also shows that (9) 75% of the head teachers attributed the failure to use resources to lack of enough time, (10) 83.33%) unavailability of resources while (6) 50% to lack of proper storage facilities and (5) 41.67% to reluctance of teachers to use some resources. Thus there was a general consensus between the two categories of respondents that some resources were not available. The head teachers also sighted reluctance of teachers to use teaching aids. The results thus indicated that unavailability and time were the major factors that limited use of resources. To answer the same question, the researcher also sought the views of the QASO on hindrances to efficient use of educational resources within the schools in Gatundu North District. The quality assurance and standards offices sighted the following factors;

Lack of transparency among head teachers; He said that most head teachers had neglected their duties of management of physical and human resources since some of them were chronic absentees, who left their schools to be manned by their deputies while out on unofficial duties,

The head teachers were also not co-operative in proper maintenance of teaching and learning materials,

There was lack of involvement by all stakeholders in providing teaching and learning materials. This coincided with the finding from table 4.13 where head
teachers felt that most parents should cooperate to improve KCPE performance in their schools. The QASO also sighted the delay in the disbursement of FPE funds allocated by the government each year to purchase learning materials and misplaced prioritization of the needs of the schools. Wanderi (2011) in a study on barriers to effective utilization of resources in secondary schools in Thika west district had sighted the problem of unavailability of resources. Mungai (2010) in her study on improvement of internal efficiency had noted that most teachers lacked the skill to handle the electronic resources. Mogeni (2005) had noted that very many teachers were for the view that using some resources was time consuming. These sentiments were also forwarded by Abagi and Odipo (1997) who said that there was inefficiency in important processes such as management of resources and policy guidelines. The researcher thus concluded that the major reason as to why resources were not efficiently utilized was because all stakeholders did not play their parts satisfactorily. Educational resources were also not very adequate in schools. Thus the results indicated that among the factors, unavailability of resources, negative attitude towards use of some resources and lack of enough time were sighted as some of the major factors.
CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
This chapter presents the summary of the document and conclusions from the study. Recommendations are also made based on the findings of the study.

5.2 Summary
The purpose was to investigate utilization of education resources in Gatundu North District. The study sought to assess the level of resource use for education provision service. Literature was done and presented in chapter two. Related literatures were done in view of educational outputs, availability of educational resources and factors that influence their use.

5.3 Conclusion
Objective one sought to assess the performance of KCPE examination in the district. The study established that majority of the schools in the district have been performing below average. This was indicated from the information in table 4.12 and from the sentiments of the QASO on KCPE performance. Only one school in the District has ever attained a mean score of 250 and above from the year 2006 to 2011. Most of the schools have been recording a mean score of below 200 for the entire period. This performance is far below what the ministry recommends as fair performance of at least 250 marks. Thus the system is very inefficient performance wise.

The study also established that in order to improve KCPE performance in the district, there is need for close monitoring of the teaching activities in the schools in the district especially early syllabus coverage and proper use of learning materials. The head teachers recommended increase in the provision of learning materials especially
text books. The QASO called for the involvement of all the stake holders in the education provision service.

The second objective sought to identify resources that are available in the schools in the district. The study established that all the schools in the district do not have all the necessary physical facilities. Most schools do not have piped water and school libraries. Lack of piped water could compromise the health of pupils in the schools. It also revealed that very few schools have electric installation. The investigator associated this to the failure to use some of the teaching aids like the school radios which were available in most of the schools.

The study also revealed that text books are not enough in the schools in the district and that there were many schools where more than three pupils shared one text book in all the subjects. Although the QASO felt that schools have been provided with enough learning materials, the head teachers and teachers felt that text books were not adequate at both the school and subject level as evidence by the information on table 4.15. The study also established that most commonly used teaching aids in schools are not available in the schools in the district. The most commonly available and used teaching aids according to the study are charts, picture and maps.

The study revealed that most teachers in the district teach more than 30 lessons per week. This heavy teaching work load may be the reason why very many teachers failed to use teaching aids regularly because they lacked time to make them. Other reasons that made teachers fail to use some resources regularly according to the study were notably unavailability of resources and poor negative attitudes towards use of teaching aids by the teachers. On orienting teachers to new innovations in the
curriculum, the study revealed that teachers do not very regularly attend in-service courses and workshops.

Curriculum documents were regularly prepared in lower primary but not regularly prepared in upper primary from the information on table 4.27 and 4.28 although the head teachers were for the opinion that teachers prepared the curriculum documents regularly.

Objective 4 sought to investigate factors that may hinder efficient use of educational resources. The study established that among the factors, all the respondents highlighted lack of involvement and cooperation of all stakeholders in matters concerning education in the district. This was from the views given by the head teachers and the QASO on measures taken to improve KCPE in the district. It also established that resources were not adequate and some teachers had very negative attitudes towards the use of some educational resources. It also established that there was a problem of management of educational resources in the district. This is from the sentiments of the Quality and Standards Officer who noted that head teachers were chronic absentees.

**Recommendations**

Based on the conclusions, the following recommendations were made;

All the stakeholders i.e. parents, teachers and heads of institutions to get actively involved in education matters in the district,

Funds to be provided by the government to buy enough educational materials for primary schools in Kenya,
Teachers to be sensitized on the importance of efficient use of educational resources especially teaching aids,

Measures should be taken to ensure early syllabus coverage at all levels in the primary schools in the district,

More funds to be availed in schools to improve the state of physical facilities and

Teachers to be regularly in serviced to orient them on new education innovations in the education system and

The school managers to follow the laid guidelines on procurement and maintenance of teaching and learning materials.

**Recommendations for further study**

Study on factors that influence performance of KCPE in Kenyan primary schools

Management of educational resources in primary schools in Kenya
REFERENCES


Ayot, H.D. (1982). Teacher’s Advisory centers in Kenya: An inset Africa Project, Case Study; Bristol University, School of education.


Hanushek, E. (1972). *Education and race, Lexington, Mass: DC. Health And CO*


Hargreaves A. (2003). *Teaching in the Knowledge Society*: Education in the Age of
Insecurity: New York Teacher’s College.


Quarterly Journal of Economics: 114, 02 (may); 497-532.


Mungai, S.N. (2010). Improvement of Internal Efficiency of Primary Schools in Kandara Division, Murang’a South District: Kenyatta University, Nairobi.


Review, 18(2):22339


*Delivering Quality Education and Training to all Kenyans.* Nairobi: Government Printer.


Wanderi, M, N, (2010). *Barriers to Effective utilization of Resources in the Teaching/Learning Of science in Thika West District,* Kenyatta University


APPENDICES

APPENDIX A: Questionnaire for head teachers

You are kindly requested to fill in the questionnaire. All the information you provide will be treated with confidence. There are no wrong or right answers.

Section A: Biographical information of the head teacher.

Please indicate a tick (✓) in the brackets provided by choosing the most appropriate response and where comments are required use the space provided.

(1) Age in years  
   21-30 ( ) 31-40 ( ) Above 40 ( )

(2) Sex  
   Male ( ) Female ( )

(3) Gross enrolment of the school
   Boys: _________   Girls: _________

(4) Number of streams from class one to class eight ________________

(5) Current enrolment per class this year

<table>
<thead>
<tr>
<th>Class</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(6) KCPE Mean scores from 2006-2011
<table>
<thead>
<tr>
<th>Year and Subject</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kiswahili</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social studies/CRE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(7) Measures taken to improve on the above performance

Give at least 4 measures

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Section C: School physical resources and learning materials.

(8) Which of the following was available in the school by year 2010?

a) School library ( )  
b) computer lab ( )  
c) School playground ( )  
d) Electricity ( )  
e) Piped water ( )  
f) Resource room ( )
(9) Who provides pupils with text books?
   a) The school ( )
   b) Parents ( )
   c) Both school and parents ( )
   d) Others (Specify)

(10) What is the current pupil textbook ratio?

   Lower primary ______________
   Upper primary ______________

(11) Please comment on the adequacy of the textbooks

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Section D: Information on teacher management

(12) How often do teachers from your school absent themselves from school with or without permission?
   a) Very often ( ) b) Often ( ) c) Rarely ( ) d) Very rarely ( )

(13) Action is taken when teachers are absent
   a) Leave children with work to do ( )
   b) Leave the class with colleague teacher ( )
   c) No action is taken ( )
APPENDIX B: Questionnaire for Primary school Teachers

You are kindly requested to fill in the questionnaire. All the information you provide will be treated with confidence. There are no wrong or right answers.

Section A: Biographical information of the teachers

Please indicate a tick (√) in the bracket provided by choosing the most appropriate response and where possible comments are required, use the space provided

(1) Age,
   20-30 years ( ) 31-40 years ( ) above 40 years ( )
(2) Gender, Male ( ) Female ( )

(3) For how long have you been teaching in primary school?
   0-2 years ( ) 3-5 years ( )
   6-10 years ( ) Over 10 years ( )

(4) What is your highest professional qualification?
   P1 ( ) Diploma ( )
   S1 ( ) Graduate ( )
Any other (Specify) _____________________________

(5) How many lessons do you teach in a week?

Less than 1 ( ) 15-20 ( ) 20-30 ( ) Above 30 ( )

Section B: Views of teachers on availability of teaching resources

(6) What is your view on availability of textbooks in the subject you teach?

Very adequate ( ) adequate ( )

Inadequate ( ) Seriously inadequate ( )

(7) What other teaching materials are available for use in your school

Posters ( ) Newspapers ( ) Pictures ( ) Maps ( )

Slides ( ) Film strips ( ) Radio ( )

(8) Which of the resources named in 7 above do you use in your teaching?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

(9) What would you attribute as the reason for not using some of the resources named in 7 above?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
(10) How often do you attend in-service courses

<table>
<thead>
<tr>
<th>Frequency</th>
<th>( )</th>
<th>Frequency</th>
<th>( )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very often</td>
<td></td>
<td>Often</td>
<td></td>
</tr>
<tr>
<td>Rarely</td>
<td></td>
<td>Very rarely</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX C: Interview schedule for quality assurance officer

Section A. Biographic information

1 Age in years
   20-30  (  )  31-40  (  )  Over 40  (  )

2 Sex  Male  (  )  Female  (  )

3 Working experience ________ years.

Section B; Views of the officer on resource utilization and performance in KCPE.

   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ____________

5 What would you attribute to dismal KCPE performance in the schools in your district?
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ____________

5. What steps are you taking in your district to ensure the improvement of KCPE
performance in schools in your district? Give at least four.

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

6 How would you rate the availability of learning resources in schools in the district?
A. Very adequate
B. Adequate
C. Inadequate
D. Very inadequate

7. If the answer to six above is not adequate, what measures are you putting in place to address the shortfall?

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

8. What factors hinder effective use of resources in your schools? Give at least five.

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

APPENDIX D: Lesson Observation Schedule

Class ______________________________
Lesson ______________________________
Time ______________________________
Topic ______________________________

Objectives

_________________________________________________________
_________________________________________________________
_________________________________________________________
_________________________________________________________

Preparation

Are the schemes of work available?
Yes
No

Are the teaching aids indicated?
Yes
No

Are there lesson notes?
Yes
No

Does the teacher have a lesson plan?
Yes
No
### APPENDIX E: WORK PLAN

<table>
<thead>
<tr>
<th>Task</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing concept paper</td>
<td>November-December 2010</td>
</tr>
<tr>
<td>Writing proposal and submission</td>
<td>January-march</td>
</tr>
<tr>
<td>Defense at school level</td>
<td>April</td>
</tr>
<tr>
<td>Piloting</td>
<td>April</td>
</tr>
<tr>
<td>Refinements</td>
<td>May</td>
</tr>
<tr>
<td>Field work</td>
<td>June</td>
</tr>
<tr>
<td>Data analysis</td>
<td>June</td>
</tr>
<tr>
<td>Post analysis literature review</td>
<td>July</td>
</tr>
<tr>
<td>Printing</td>
<td>August</td>
</tr>
<tr>
<td>Binding</td>
<td>September</td>
</tr>
<tr>
<td>Submission</td>
<td>September</td>
</tr>
</tbody>
</table>
## APPENDIX F: Approximate Budget

<table>
<thead>
<tr>
<th>Component</th>
<th>Approximate cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stationery</td>
<td>20000</td>
</tr>
<tr>
<td>Cost of research assistance</td>
<td>20000</td>
</tr>
<tr>
<td>Printing, Typesetting and binding</td>
<td>60000</td>
</tr>
<tr>
<td>Transport cost in fieldwork</td>
<td>60000</td>
</tr>
<tr>
<td>Data analysis and reporting</td>
<td>40000</td>
</tr>
<tr>
<td>Contingencies</td>
<td>40000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>240000</strong></td>
</tr>
</tbody>
</table>
APPENDIX F: RESEARCH PERMIT

Page 2

This is to certify that:
Prof./Dr./Mr./Mrs./Miss/Institution
Peter Njuru Iren
of (Address) Kenyatta University
P.O.Box 43644-00100, Nairobi.
has been permitted to conduct research in
Gatundu North
Location
Central
District
Province

Date of issue: 26th December, 2012
Fee received: KSH 1,000

Applicant's
Signature

National Council for Science & Technology

For a period ending: 31st March, 2013

Page 3

Conditions

You must report to the District Commissioner and the District Education Officer of the area before starting on your research. Failure to do that will lead to the cancellation of your permit.

Government Officers will not be interviewed with respect to your permit.

No questions will be asked unless it has been approved.

Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.

You are required to submit at least two (2) to four (4) bound copies of your final report for Kenyans and non-Kenians respectively.

The Government of Kenya reserves the right to modify the conditions of this permit, including its cancellation without notice.

Republic of Kenya

Research Clearance Permit

[Stamp]

[Signature]

[Date]