THE IMPACT OF COST SAVING MEASURES ON ACCESS AND PERFORMANCE IN PUBLIC SECONDARY SCHOOLS IN KCSE EXAMINATION IN TESO DISTRICT, KENYA

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APRIL 2011
DECLARATION

This proposal is my original work and has not been presented for a degree in any other university.

Date: 27/05/2011

Emma Patricia Ipata
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This proposal has been submitted for review with my approval as university supervisors.

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DEDICATION

This work is dedicated to Julius without whose support the course would not be successful. To Sue and Nicole for their moral support.
ACKNOWLEDGEMENT

A work of this magnitude would not have been done single-handedly. Therefore I want to extent wholeheartedly my deep appreciation to all whom in one way or another stood with me in producing this work. Your support however small in your eyes meant much to me.

Particularly I would like to thank Dr Levi I Libese and Dr Nobert Ogeta who served as my university supervisors, for their professional advice, dedication and effort that ensured that study was completed on time.

Research activities take time and money. To this end, i owe a lot to my husband for providing the financial support throughout the study period.

I also thank the entire Teso district for proper record documentation
ABSTRACT

The purpose of the study was to find out the impact cost saving measures have on access and performance in public secondary schools in KCSE examination. The survey design was used to collect data from a population of 18 secondary schools. 12 percent girls schools, 12 percent boys schools and 18 percent mixed day schools were selected purposively. Questionnaires was used to collect data from head teachers, students, PTA representatives, quality assurance officers and class teachers. Document analysis was used to collaborate responses. Data collected from the field was analyzed using descriptive statistics. Findings were reported in frequencies and percentages. The study found out that resources in the schools were not efficiently utilized. Majority of schools had a pupil teacher ratio of 30:1, pupil-worker ratio of 30:1, learning resources were available though inadequate in most schools to support learning, income generating activities enhanced access in public secondary schools and all schools involved students in the performance of some duties. Purchasing items in bulk and while in season also enhanced access and retention in public secondary schools. On the basis of the findings the study therefore recommends the redeployment of underutilized teaching staff to other schools, schools should employ the recommended number of support staff to ensure efficiency thus reduction in time wastage and subsequent better performance, the number of lessons per week per teacher per week should be 27 lessons. Income generating activities could be enhanced to ensure that schools reduce on fee levied alongside supplementing the existing resources, and schools should be well equipped with basic learning resources because they determine the performance in KCSE examination. In this regard the school heads should prioritize the most strained school resources for maintenance and consider for replenishment and installation/building of new facilities.
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ABBREVIATIONS AND ACRONYMS

FPE – Free primary education

GoK – Government of Kenya

MOEST – Ministry of Education, science and Technology

K.C.S.E – Kenya Certificate of Secondary Education

GER- Gross enrolment rate

EFA – Education for all

CBE – Curriculum based establishment

PTA – Parent teacher association

T/L - Teaching resources

UNDP-United Nations development programme

ECA- Europe and central Asia

KESI- Kenya Education staff institute

HRD – Human Resource Development

GPD – Gross domestic product.
CHAPTER ONE:
INTRODUCTION

1.1 Background of the study

Due to its importance as a major agent for economic, political and social development, education has taken an increasing share of national budgets across the world. Psacharopoulos and Woodhall (1985) and Ayot and Briggs (1992) noted that the ever-growing demand for education, the resultant expansion of education systems, rising costs in education because of inflation and the need for more and more sophisticated (and thus more expensive) equipment, have led to massive increase in spending on education all over the world.

The majority of nations however have not been able to solely meet the rising cost of education hence have sought alternative ways of funding education including, cost sharing and grants. In Kenya, the adoption of cost sharing policy in education as stated in Republic of Kenya (1988) meant sharing the cost of education between the government and the service recipients.

The ministry of Education (MOEST) with effect from January 2008 waived fee changeable in public secondary schools alongside the free primary education. This is aimed at enhancing access to Secondary School level for the low income household. Parents are to meet boarding cost, buy informs, lunch for day schools and finance school projects. While it is true that inflation has contributed to the high cost of education, physical, human and financial resources in school could be efficiently utilized to reduce unit costs hence make education affordable. This includes proper use of the available school space, equipment, teaching and non-teaching staff, and finance. World Bank (1980) observes that the need to improve efficiency is particularly important at the middle and tertiary levels where rapidly increasing enrolments are accompanied by high unit costs. Possible approaches for increasing efficiency as appointed out by World bank are, improvement in the use of staff by increasing the teaching load and the ratio of students to staff and by eliminating unnecessary diversity or duplication of courses; using school space more efficiently; introducing accelerated course of study, year-round programs and shorter more intensive training periods; reducing non teaching costs by improving the student selection procedures and student – aid policies and lowering costs of boarding and improving management through effective program budgeting, cost analysis and
procurement practices. Abagi and Odipo (1997) further point out that, in order to develop education and training, the government and its partners have to ensure that the education system is efficiently managed at both national and school levels.

The Ministry of Education Science and Technology (MoEST) guidelines on management of secondary schools include utilization of resources. The MoEST recommends that, standardized school fees structure for public secondary education so as to make it affordable to the majority of parents. Schools are required to adhere to Maoist's guidelines on the vote heads. Further guidelines on financial management, physical and human resource are provided. These guidelines are intended to enhance efficiency in the management of schools. It was also pointed out in the Master Plan on Education and Training (MPET) 1997 – 2010 that on a plan to reduce costs that, emphasis will be placed on putting up affordable but functional school buildings, with the use of cheap local materials and labour being emphasized. To conserve on development resources according to the Master Plan recommends that, expansion will be based on increasing existing single and double – stream schools (in most parts of the country) to at least triple – stream schools before establishing new ones. As opposed to being boarding, new school should be day institution. The curriculum will be reduced both in terms of subject and content which will lead to reduced costs to the household and government and, pupil – teacher ratio is to be raised to a national average of between 25:1 and 30: 1 with equitable staffing across provinces, districts and schools.

Inefficiency however, seems a major problem in education. It is pointed out by World Bank (1995) that most developing states are spending much on education but in actual sense, the high cost is due to inefficient utilization of the available resources. Cases of inefficiencies especially mismanagement of school funds have continued to be revealed in many schools across the country. Koech report, republic of Kenya (1999) report decried poor financial management in education institutions and pointed out that this contributed to increase in costs and poor returns for amount spent. The report, further revealed that the situation was costly hence unaffordable. The result is that most of the finances raised from parents do not in the final analysis improve the quality of teaching or students school welfare. The report revealed that studies have established that, many students end up rioting and destroying school property because of anger at what they perceive as substandard services brought about by mismanagement of their parents' hard earned
money. Funds are a core resource for schools and if mismanagement, could contribute to high costs and adversely affect systems as a whole.

It was further noted that some board of governors (BoG) members and head teachers of secondary schools ignore school fees guidelines provided by MoEST and charge higher school fees to add on other charges. As pointed out in the Koech Report (Republic of Kenya 1999), the Commission of Inquiry was frequently reminded that close to 50 percent of Kenyans live below the poverty line. In view of this, the prohibitive fees and other levies charged by educational institutions have had a negative impact on access resulting to lowered enrolment rates and high dropout rates.

According to the Ministry of Education (MoEST) and Human Resources Development (HRD) statistics secondary education enrolment was projected to increase by 200% as a result of the introduction of free primary education (FPE) in 2003 and transition rate was targeted to reach 70% by 2008. Enrolment is expected to increase from 0.92 millions in 2004 to 2 millions and 2.7 millions students by 2010 and 2015 respectively. This growth requires increase in resource mobilization by public and private sector, development partners and financing systems.

1.2 STATEMENT OF THE PROBLEM

Meagre financial resources in secondary schools have resulted into cost saving measures in Kenyan schools. Inadequate government subsides and parents' inadequate incomes have impacted negatively on the running of school. Schools have implemented cost saving measures to make up for deficiency. Although these measures are adopted on the economically genuine reasons, their impact on access and performance have not been established. This study aims at establishing the impact of cost saving measures on access and academic performance of public secondary school in Kenya certificate of secondary (KCSE) examination in Teso district.

1.2.1 PURPOSE OF THE STUDY

The purpose of this study was to establish the impact of cost saving measures on access and academic performance of public secondary school in Kenya certificate of secondary (KCSE) examination in Teso district.
1.3 OBJECTIVES OF THE STUDY

The specific objectives of the study were:

(i) To determine access to secondary school education in Teso District.
(ii) To identify cost saving measures adopted in the utilization of resources in public secondary school in Teso district.
(iii) To find out the impact of cost saving measures on:
   (a) Academic performance
   (b) Learning/teaching resources
   (c) Completion

1.4 RESEARCH QUESTIONS

The study was guided by the following research questions:
(i) How was the enrolment in secondary school education in Teso district?
(ii) What cost saving measures were in place in the utilization of resources in public secondary schools in Teso district?
(iii) What was the impact of cost saving measures on
   (a) Academic performance?
   (b) Learning/Teaching resources
   (c) completion

(v) What was the impact of cost saving measures on access to public secondary school in Teso district?

1.5 SIGNIFICANCE OF THE STUDY

This then provides information, which will guide the head teachers and other education policy makers and planners on how secondary schools would adopt appropriate cost saving measures without compromising academic performance in secondary school. The study will contribute to existing literate and issues on cost and cost saving measures in education.
1.5.1 Delimitations

i) The study was confined to Teso District due to inadequate finance and time resources. The findings therefore mainly reflect the situation in public secondary schools in Teso District and may not be easily generalizable.

1.5.2 Limitation

(i) The study was concerned with the impact of cost saving measures on access and academic performance in public secondary schools in Teso District. Private secondary school were not part of the study.

1.6 ASSUMPTION OF THE STUDY

(i) Costs saving measures have an impact on academic performance of public secondary schools.

(ii) Cost saving measures have an impact on access to public secondary school.

1.7 THEORETICAL FRAMEWORK

This study was based on the theory of production. Production theory explains the technical relationship between output and inputs into a system. A single output may be produced at a given time by various methods of production also known as process or activity. A process or activity that uses at least one factor of production and no more of other factors of production compared to other processes or activities is said to be more efficient. This theory is best represented by a production function, for example the Cobb-Douglas production function:

\[ X = b_0 L^b_1 K^b_2 \]

Where: \( X \) = outcome for example education outcome

\( b_0 \) = Administrative/organizational efficiency

\( L \) and \( K \) etc are other factors of production for example textbooks, time, teaching staff etc.

Education as a production process uses scarce financial, physical and human resources to produce educated people. In education the school is considered as a firm, although its motive is
not profit maximization but to process people into desired graduates. They can minimize cost and maximize the processing of desired graduates.

The relationship between input and output of education, which is sometimes called the education production function. The term production function refers to the process by which inputs are converted to outputs. A single production function for education would be

\[ A = f(T, B, E, \ldots) \]

where:

- \( A \) = Achievement
- \( T \) = Teacher-pupil ratio
- \( B \) = Books and other material
- \( E \) = Equipment and so on

World Bank research on the determination of academic achievement demonstrated that variations in inputs do affect education output. Among the most important factors are teacher and textbooks.

They can minimize cost and maximize the processing of desire graduates. According to Psacharopoulous and wood hall (1985), inputs that go into education production process are divided into two major categories. These are exogenous and endogenous inputs. Exogenous inputs are those inputs on which schools do not have direct control e.g. politics, environment, number of siblings, parental poverty level etc. Endogenous inputs in the other hand are those inputs on which a school has direct control. They include students, teachers, books and other school facilities, salaries, non-teaching staff, catering and accommodation services etc.
Conceptual framework

Fig 1.1: Cost saving concept

School Resources
- Physical: land, facilities and equipment
- Human: teaching and non-teaching staff, students
- Financial: budgeting, expenditure
- Time: teaching-learning time, projects, repairs, purchases.

Management process

Efficient utilization
- Minimum costs, affordable and accessible education
  - Improve quality of education e.g. provide learning resources
  - Expansion of access

Inefficient utilization
- High costs, unaffordable and reduced accessibility to education
  - 1. No savings for education improvement
  - 2. Reduced access.

Savings

SOURCE: Researcher
The model in figure 1.1 shows that school resources including physical, human, financial and time, when efficiency utilized can reduce unit costs and make education affordable and accessible to an increased number of people. Savings may be made which can be used to improve the quality of education by increasing/ providing learning materials and other teacher support services such as laboratory, library and workshop assistant while some may be left for expansion. This means in case of savings, priority should be given to learning resources and other teacher support services without compromising the academic performance. Inefficient utilization of school resources on the other hand could result in high unit cost, making education unaffordable and inaccessible to a large number of people. If savings are not made to help improve the quality of education and expansion, this will result to low quality education.

The recommended class size of 40 students could ensure maximum uses of resources in the running of schools hence school finance should be well managed to ensure proper budgeting and expenditure. Time is equally an important factor in cost saving. Efficient use of teaching learning time could enhance good performance in national examination’s while at the same time help reduce wastage especially repetition and related costs.

Completion of school projects on time making repairs and purchases in good time are among other ways through which extra expenses could be avoided.

OPERATIONAL DEFINITION OF TERMS

Access - Gaining entry into a school
Adequate - sufficient e.g. resources
Cost saving measure - plan or course of action aimed at minimizing expenses in education and includes efficient utilization of resources
Cost sharing - partnership and shared responsibility among the government
Parents and communities in the provision of secondary education in Kenya.
Pupil teacher ratio - The total enrollment in the school divided by the number of teachers in the school.
Resource - Classified into 3 types human, physical; monetary resources
Material resources - All those items designed, modified and prepared to assist T/L operation e.g. text books, stationery.
2.0 LITERATURE REVIEW

INTRODUCTION

The purpose of this study was to establish the impact of cost saving measures in the utilization of resources in public secondary schools in Teso district. This chapter reviews literature related to the study under the subjects: cost of education, sources of funds for schools, utilization of resources, cost saving in education, Kenya and cost saving, cost and performance in KCSE.

2.1 COST OF EDUCATION

Aoki et al (2002) observes that public education typically absorbs 2 to 5 percent of the GDP and is often the largest sector in the overall government budget. Momanyi (1998) points out that America’s, Cuba’s and Germany’s public expenditure on education as a percentage of the GNP was more than 9 percent, while Kenya’s was 4 percent.

The rising cost of education is more of a burden to developing nations whose GNP is low compared to developed nations with a relatively high GDP. Kenya’s share of 4 percent however, represented about 35 percent of the government recurrent budget which is relatively a very high proportion. According to 2008 public expenditure review and medium term expenditure framework 2008/09- 2010/11 of the ministry of education government spending on education and training has increased over the last five years. Apart from the free primary education funding, the Government also introduced fees waiver in public secondary school. Analysis of the ministry total expenditure 2003/04- 2007/08 is as per table below:
TABLE 2(a): THE MINISTRY’S TOTAL EXPENDITURE 2003/04-2007/08

<table>
<thead>
<tr>
<th>Category</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
<th>2006/07</th>
<th>2007/08</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOE recurrent</td>
<td>68215.50</td>
<td>77219.00</td>
<td>86276.10</td>
<td>93114.43</td>
<td>106.444.12</td>
</tr>
<tr>
<td>MOE Development</td>
<td>4076.50</td>
<td>2863.80</td>
<td>6449.10</td>
<td>6036.96</td>
<td>7912.29</td>
</tr>
<tr>
<td>Total MOE recurrent and development</td>
<td>72292.00</td>
<td>80082.80</td>
<td>92725.20</td>
<td>99151.39</td>
<td>114356.41</td>
</tr>
<tr>
<td>Gross domestic product</td>
<td>1136288.00</td>
<td>1282505.00</td>
<td>1415156.00</td>
<td>1561527.25</td>
<td></td>
</tr>
<tr>
<td>Total GOK recurrent</td>
<td>203861.00</td>
<td>227082.50</td>
<td>267966.80</td>
<td>293882.57</td>
<td>337763.99</td>
</tr>
<tr>
<td>Total GOK development</td>
<td>59670.60</td>
<td>71982.90</td>
<td>92120.90</td>
<td>142422.19</td>
<td>201650.82</td>
</tr>
<tr>
<td>Total GOK</td>
<td>263531.61</td>
<td>299065.40</td>
<td>360087.70</td>
<td>421037.96</td>
<td>421037.96</td>
</tr>
<tr>
<td>Total MOE as % of GDP</td>
<td>6.36%</td>
<td>6.24%</td>
<td>6.55%</td>
<td>6.35%</td>
<td>6.35%</td>
</tr>
<tr>
<td>Total MOE as % of GOK total expenditure</td>
<td>27.43%</td>
<td>26.78%</td>
<td>25.75%</td>
<td>23.55%</td>
<td>27.16%</td>
</tr>
<tr>
<td>Total MOE as recurrent % of GOK Total recurrent</td>
<td>33.46%</td>
<td>34.00%</td>
<td>32.20%</td>
<td>31.68%</td>
<td>31.51%</td>
</tr>
<tr>
<td>MOE development as % of GOK Development</td>
<td>6.83%</td>
<td>3.98%</td>
<td>7.00%</td>
<td>4.24%</td>
<td>3.92%</td>
</tr>
<tr>
<td>MOE Recurrent as % of MOE expenditure</td>
<td>94.36%</td>
<td>94.36%</td>
<td>96.42%</td>
<td>93.91%</td>
<td>93.08%</td>
</tr>
<tr>
<td>MOE development as % of Total MOE expenditure</td>
<td>5.64%</td>
<td>3.58%</td>
<td>6.96%</td>
<td>6.09%</td>
<td>6.92%</td>
</tr>
</tbody>
</table>

The ministry receives the largest share of government resource in an effort to achieve overall development goals. The percentage of total government spending on education (both recurrent and capital) has been 26.13 percent on average over the last five years. In absolute terms the expenditure has steadily increased from Kshs. 72.29 billion in 2003/04 to KShs. 114.36 billion in 2007/08.

Oduol (2008), observes that the government catered for day schooling such as tuition fees, repairs and maintenance, electricity and water conservation, administration costs, non-teaching staff salaries, and transportation cost for students in public school and thus no head teacher was expected to ask for extra levies unless agreed upon by parents in Annual General Meeting recommended by the District Education Board (DEB) with the approval of the Ministry of Education Headquarters.

Siele (2008) observes that, parents should not abdicate their responsibility to meet the cost of school uniforms clearly specified by the school, payment of Kenya Certificate of Secondary Education Examination fees, boarding related costs as reflected in the boarding school fee structure, lunch for day scholars and other projects.
Sources of school fund can be classified into three major categories namely: Parents, government and community groups. A discussion on how these groups contribute in funding schools is reviewed below, as discussed by UNESCO (2004)

**PARENTS**

Contributions by parents may become necessary due to inability by the government to meet even basic school financial needs. This is so in many developing countries. But even in countries where government can afford to provide good buildings, qualified teachers and a wide variety of resources, parents may still wish to contribute money for even more resources, such as transport and computers, and pay for educational visits, because they want their children to enter adult life having obtained the best possible education (UNESCO 2004). In rather crude terms they want them to be the front of the queue for good jobs

According to UNESCO (2004) parents contribute to school budget in the following ways:
- paying a specific fee for a building project such as houses for teachers
- paying teachers for additional lessons and coaching, special duties, general welfare
- paying for resources, such as text books, exercise books and writing materials, school uniforms, desks and chairs, library and sports contributions
- paying for their children’s welfare, such as transport cost, school meals, caution money

We should not assume that all parents are able to make the same contributions, whether financial, in kind or in time, to the school. Income levels in both urban and rural areas are likely to vary considerably, as will the size of each family. A sensitive approach is required by a school head, first to differentiate between families, and second make provisions for children’s and parents who are facing difficulties with payment (UNESCO 2004). On the other hand the head will need to accept not everyone will be able to contribute to the same extent. To cater for the poorer families the head may need to set up a special support fund to help pay such things as the fees of children who show special promise (UNESCO 2004).

CENTRAL GOVERNMENT

Government assists schools financially in several different ways. These may include:

- paying grants to schools
- Assisting schools to establish money generating projects by providing technical assistance including materials and equipments.
- Financing the construction and rehabilitation of school plant (UNESCO 2004)

The government also makes indirect contribution to each school through for example training teachers, preparing syllabuses and materials providing inspectors.

COMMUNITY GROUPS

Community groups are often among the key sources of funds to schools. They are mobilized to carry out given tasks by leaders in the community, such as local chiefs. There are many schools in developing countries that have been built by community groups.

Community groups can raise funds in many ways, some of which include;
- Mobilizing community groups in developing projects.
- Community leaders playing the leading role in mobilizing the masses to participate more effectively in school projects.
- Fund raising for individual schools in an area.
• Mobilizing former students in self-help projects for the purpose of generating funds
• Levying education taxes on members of the community (UNESCO 2004)

SCHOOL FACILITIES

Through proper management, and if government regulations allow, school plant may generate substantial funds. Ways of doing this may include:

• Hiring school facilities to the community, for example, halls, vehicles, playground
• Engaging in money generating projects such as livestock farming, running a canteen and operating workshops (UNESCO 2004)

PUPILS

Pupils may be good sources of school funds if they can see the benefits both for themselves and their school. Developing this resource depends on the good management of the school head and staff. The following ways of involving your pupils may be considered.

• Generating funds through such activities as agriculture, keeping poultry, pigs and cattle, making crafts, and beekeeping.
• Fundraising activities, for example, music, dance, games and sports, exhibitions, charity walks, and jumble sales (UNESCO 2004)

BUDGETING

After identifying possible sources of funds, a school head as a financial planner has to draw up a plan for security and expending the resources. For the plan to be expressed as a school budget, a leader needs to have some knowledge and experience of designing and managing a budget (UNESCO 2004). The head teacher mainly relies on resources that are determined by others, such as the government or the PTA and assigned by them to the head.

However, as a school planner as finance manager, the head teacher should take an active rather than a passive role in determining, mobilizing, and acquiring financial resources. In such a way, the head is more likely to ensure the effective implementation of the school programmes. Thus, major tasks of the H/M as a planner are to ensure that
They fully understand the financial situation in which their planning is to occur.

Their planned resources are available when required and are properly and effectively utilized to achieve the school mission and objective (UNESCO 2004)

Okumbe (1998) defines a budget as an educational programme, which is expressed in financial terms.

According to UNESCO (2004), budgeting is a process of preparing a statement of the anticipated income and the proposed expenditure. This statement is the school budget which guides ahead through the various school activities, as well as towards the objectives of the school.

2.2 UTILIZATION OF RESOURCES

As pointed out in Koech Report (Republic of Kenya, 1999) Kenya compared with other countries in the region spend considerably more on education in relation to total government spending.

In addition the proportion of the GDP spent on education is much higher for a country at her level of per capital income. It is revealed in the report that it is possible to improve cost in the education either without increasing the share of government expenditure on education by improving efficiency in the use of resources. It was therefore recommended that the budget of the ministry be properly rationalized to ensure that the vast amount of resources allocated to the education sector is much more efficiency utilized. Koech Report (Ibid) further decried poor financial management in education institutions which has contributed to increased costs and poor returns for amounts spent. It was recommended in the report that Ministry strengthens the monitoring and supervision of the management of funds in the school’s through measures such as annual Audits and Implementation of Audit supervision exercise to ensure efficiency and cost effectiveness in the use of resources. Among the options for the future of education in Europe and Central Asia (ECA) region according to Heyneman (1994), is that more efficient use of current resources can be achieved by rationalizing and down sizing the number and variety of programme duplication sharing common facilities across different institutions such as libraries and laboratories, encourage and reward good institutional management and by reducing wasted time. Heyneman’s suggestions are applicable to the Kenyan situation.
Republic of Kenya (2001) equally points out efficient utilization of resources as one of the essentials education policies. Aoki et al (2002) indicate among key education policy options (in basic education) more cost effective double use of existing school infrastructure including double shift, multi grade schools, teacher re-deployment and efficient class size. Measures taken should however not compromise the quality of education.

Ayot and Brigg’s (1992) pointed out concern over increasing costs of education that led to attempts to make education more efficient. Research has been undertaken to find out if better results could be obtained for money spent or at least the same results produced at less cost. Reduction of the recurrent costs of education requires efficiently in management. Any given set of input once chosen should be combined in such away as to produce the largest attainable output. The country can thus maintain the present levels of resources but maximize their use.

In sectional paper no 6. of 1988, the need to cost effectively use resources at the disposal of schools including land, finances, teachers, time, facilities and equipment to bring about efficient provision of quality and relevance in education is outlined. The need for efficiency is also pointed out by the republic of Kenya (1993), whereby at a Kenya Education staff institute (KESI) workshop was revealed that studies carried out by UNICEF in seven district suggest that the worsening economic situation requires better management of schools and efficient use of available school resources.

2.3 COST SAVING IN EDUCATION

Various sources have contributed to the issues of cost saving in education these section discusses a number of them. For instant it is pointed out by World Bank (1988) that there is substantial potentials in most countries for reducing unit cost at the secondary level by improving efficiency within the existing system. African leaders need to implement firm policies in this regard. World Bank further observes that given tight limits on public resources In Africa and the competing claims on these resources by other parts of the education systems, the key to satisfying the high demand for secondary education in Africa lies in greater cost sharing at this level combined with substantial reduction in unit cost. Human Development Report by United Nations Development Programme (UNDP 1991) reveals that the opportunities for cost savings are consideration in education. According to the report a study for the world conference on
“education for All” concluded that a feasible package of reforms could reduce the recurrent costs of education systems by 25 percent.

The package consists among other things measures to reduce repetition, more efficient use of the community resources, multiple shifts, selective increase in class size and more introduction of cost recovery at tertiary level. The quality of education should however not be sacrificed. On financing secondary education in Zimbabwe, Lewin and Caillods (2001) observed that there being no likelihood of the overall public resources allocated to education growing in real terms, then improvement in access, retention and quality had to be largely financed from improvements in distribution, more efficient use of existing resources and the maximum use of alternative sources of finance. Wolf (1984) points out that main elements affecting unit costs are teacher salaries, student - teacher ratios and non teacher salary costs (especially boarding costs).

Non teacher salary cost comprise on average 35 percent of all secondary education costs compared to only 10 percent in primary education. These elements have therefore to be considered in effects to reduce unit costs. World bank (1988) in the discussion on containment of unit costs with focus on primary education centers on teacher salaries, more intensive use of teachers, reductions on repetition and drop outs and appropriate construction standards. This aspect applies to secondary education. The introduction of distance education programme in transition from boarding to day schools according World Bank is important in the move to reduce unit costs. It is further pointed out that there is usually much greater scope for unit cost reduction at the secondary level than primary. In particular there is evidence from many parts of Africa today that capital and teachers are relatively under utilized at the secondary level. For instance, the median student –teacher ratio in sub - Sahara Africa is 39 in primary education but only 23 in secondary level. Policies to increase student- teacher ratio at secondary level could substantially reduce unit cost. According to World Bank (Ibid), the principal means that policy makers may wish to consider raising this ratio include large classes, heavier teaching loads (obtainable through double shifts and extensions of the school calendar) and specialization of teachers in several subjects rather than in only one.

Increased class size as one way of reducing unit cost is supported by various studies. for instance UNDP (1991) supports it and urges that achievements test show no significant difference between children in classes of 25 and those in classes of 40. World bank (1974) advocates for effective utilization of teachers and points out that research findings tend to
challenge some assumptions concerning the relationship between class size, level of training of teachers and students achievement. In a study on student achievement in secondary schools in some twenty countries including four developing ones, it has been reported that there was no significant correlation between class size (within reasonable ranges) and student performance in certain subjects. It may also be argued that providing more learning materials including textbooks to large classes is a better alternative to improving performance than reducing the class size. In relation to these views Aoki et al (2002) adds that class size is an important factor in education efficiency. The republic of Korea and Singapore, for example, maintain an average class size of 40 in basic education. Although this may seem high, it enables resource to be assigned to other inputs such as books, material and computers. Education research across a large range of countries, supports the view of Korea and Singapore that this trade off is cost effective. Lowering average class size below 40 according to Aoki et al, should not be a priority use of resources in low-income countries. Class size in technical and vocational subjects such as Home Economics, Woodwork, Metal and Agriculture is usually smaller, of about twenty students rather than forty and also additional specialized staff is required. Wolf (1984) points out that a secondary school which devotes a major portion of the curriculum to technical and vocational subjects can expect a significant increase in unit costs because of the need for additional teachers as well as consumable materials and electricity. Introduction of these courses should therefore be considered very carefully.

Schools can also increase the number of pupils per teacher by operating double shifts in the same classrooms. For instance one group of pupils schooling in morning, and another group in the afternoon. Double shifts will also double the teaching load for the teacher if they take both shifts. According to UNDP (1991), double shifts save on teachers (if they take both shifts) and on the capital cost of building, equipments, libraries and laboratories. Within this system, Senegal has cut costs considerably and increased access to education. Zambia has also used double (and even triple) shifts to reduce capital cost in education by almost half and also reduced the current cost per primary school pupil by an average of 4.1% between 1980 and 1984. Doubling the teaching load might however result in poorer instructional quality and would be better to increase the load less drastically. Increasing the load should also be to a manageable limit to avoid undermining the teacher’s effectiveness in the classroom. UNDP (Ibid) further points out that,
multiple shifts have disadvantages as well. They put greater pressure on teachers (and parents, who have to look after small children not at school).

But multiple shifts do offer considerable scope for unit cost reduction. Double shifting can be more considerable in urban areas and densely populated areas. Aoki et al (2002), points out that double shifting addresses the problem of classroom shortage in densely populated areas. In urban areas schools operating two shifts per day (sometimes with a third evening shift for older students) can achieve intensive and more efficient use of school infrastructure, freeing up resource for other priorities. Research indicates that double shift school can allow students adequate instruction time without impairing learning. However, care must be taken that vulnerable groups such as girls, are not routinely assigned to the less desirable shifts.

As regards multi-grade schooling, reaching in the remotest small villages (helmets) where population density is low and unit cost are correspondingly high is a challenge for all school system. Columbia, Guatemala, Burkina Faso, Zambia, the Philippines and other counties have found multi-grade schooling (one teacher teaching several different grades in a single classroom) to be the most cost effective way of making optimal use of classroom facilities and of providing complete primary schooling in sparsely populated areas. Multi-grade teaching works best where teachers are trained to manage a classroom of children of different ages, all students have self-spaced learning materials appropriate for their grade and where older students help tutor younger students. Research shows that student learning in such setting compares very favorably with learning outcomes in traditional classrooms.

As concerns education in the ECA region, Heyneman (1994) shows that cost reductions can also be accomplished through “retrenchment”. This means eliminating non-essential programmes. He reveals that areas that might be considered for retrenchment in the ECA region includes vocational and technical; unemployment. According to Heyneman, maintaining an expensive approach. He also argues that since education is such a labour intensive industry, if one is looking for ways to reduce unit in an effort to enhance internal efficiency, the first thing to examine is how teachers and other staff are utilized. In most education systems wages and salaries especially those in poor countries the proportion spent on wages and salaries reaches 80 or even 90% of the total.

As regards teacher salaries, one way of making salary saving to UNDP (1991) is to use teachers with less formal training and to seek more help from the community. In Senegal,
assistant teachers have been introduced in greater numbers, their starting salaries are well below those of regular teachers and yet the quality of education has not fallen. In Columbia too, increasing the role of teacher helpers has reduced cost. According to World Bank (1974), a study in a Latin American country indicates that students do almost as well when studying under normal school trained teachers as they do when they are taught by university graduates. However, care has to be taken especially in subjects, which requires specialized staff at secondary level.

Distance education system which involves radio and correspondence techniques and reduce the amount of face-to-face interaction with qualified teachers, can help reduce costs. As pointed out by World Bank (1988), beginning at secondary level, the potential of distance education to reduce cost by substituting for the time of highly skilled teachers, makes it an attractive alternative to convectional instruction for low-income countries, especially in Sub-Saharan Africa. Saving can thus be realized especially on teacher costs. It is important to note that the amount of contact with qualified teachers is reduced but it should not be eliminated unless only in extra ordinary circumstances.

In relation to drop out and repetition, World Bank observe that, establish an education infrastructure that provides access to good education for all the students is made more expensive by inefficiencies in flow of students, which are caused by dropout and repetition. A simulation of the cumulative effect of repetition and dropout on primary school completion shows that fewer than two third of the students who enter primary school ever graduate from it. World Bank further shows that when children dropout after only one or two years of schooling, public resources are probably wasted because most retain little of what they learned in such a short time. When children repeat grades, extra resources are required for them to complete the primary school cycle. This primary situation may be similar to secondary school level. Heyneman (1994) has similar views. According to him dropout and repetition are costly in terms of the resources required to produce a successful graduate of the system. The cost of education in Vietnam for instance, could be reduced to the extent that "flow-through efficiency" is improved by reduction in dropouts and repetition rates. According to World Banks (1998), significant reduction in dropout and repetition rates could be achieved but that would require sizeable and costly improvements in the school and classroom factors that cause pupil to repeat or drop out. This
means at least in the short term, areas of repetition and drop out probably offer little opportunity for cost savings.

On construction, measures to reduce construction costs are essential. As revealed in World Bank (1988), there is potential in Africa countries for the development and use of new school designs that meet minimum standards but are much cheaper than those typically used at present. The use of local materials reduces building costs. In many cases according to the World Bank greater reliance on local material is also a way of improving the quality of construction. For example in Niger, the cost of a classroom made of concrete is five times that of one made of "Banco", the most commonly used construction material in rural areas, yet the latter is cooler in summer and warmer in winter than the former.

In Senegal, World Bank (Ibid) reveals that projects undertaken by the government had brought the cost per student place down. Eighty six primary school classrooms in the Kolda and Tamba –Coumda areas were constructed under these projects. A number of strategies were used to hold cost down. The tendering procedure made use of a bidding process organized as a competition among partners of architects and contractors. The outcome was a replicable low cost, low maintenance construction technology that is labour-intensive and maximizes the use of local materials. Fully 80% of total construction materials are locally available. The foreign exchange component of this technology represents approximately 28% compared with about 52% for classical construction methods. Cost saving measures applied in construction at secondary level need to be studied as intended of this study, with particular reference to Kenya.

Wolf (1984) observed that boarding cost is a major element among other cost than teachers' salaries. Other includes school operations, school equipment and purchase of textbooks. Looking at boarding schools cost in relation to non-boarding institutions or school, it is observed that without boarding, government could at least double the number of students covered for the same amount of funds expended for both capital and recurrent cost. World Bank (1988), points out that transition from a system of boarding school to one of secondary day school is another approach to reducing both the capital and recurrent cost of secondary education. It argues that government expenditures per student tend to be much higher in boarding schools than in day school, for example by as much as three and half times in Somalia. The result is that for a given amount of money the government can offer many other places. However, today with cost sharing policy adopted, most governments have left most boarding cost to be
met by the beneficiaries. Although costly, boarding schools are sometimes however justified. For instance on nation building grounds, they bring together students from different regional and ethics backgrounds. They may also offer economies of scale with regard to teacher utilization and they avoid the daily commuting cost associated with day schools.

Savings made should especially be used to improve quality of education. Wolf (1984) observed that should savings be made in teacher costs through higher student–teacher ratios, consideration should be given to utilizing a portion of higher saving to provide teacher support service such as Laboratories, libraries and workshops assistance, duplicating machines and other simple teaching aids. World Bank (1988), points out that a substantial part of the saving will have to be redirected to increasing recurrent inputs (the inadequacy of instructional materials and consumable supplies is a problem at the secondary level, although less than at the primary level), but some resource may be left for expansion. Cost saving involves various aspects as revealed in the discussion above. A study to investigate their application in public secondary school is in Kenya is necessary.

### 2.4 KENYA AND COST SAVING

Cost saving with reference to Kenya, is discussed in this section. In relation to this, Republic of Kenya (1988) recommended the expansion of single and double stream secondary schools to a minimum of three-stream school as a more cost effective way of increasing enrolment. It is argued that such schools will increase enrolment and also be more economical to run in terms of optimum use of teachers, facilities and other resources. However, expansion and increase in enrolment should go up to optimal size. Beyond optimal size saving starts decreasing.

Further recommendation by Republic of Kenya (Ibid) is that, future secondary schools be established as day schools as a more cost effective way of expanding and providing accessibility to secondary education. It is argued that day schools are cheaper to develop and maintain and therefore it is proposed that communities and parents be encouraged to develop day secondary schools and provide them with facilities and equipment to enable them maintains high standards of teaching and learning. It is further pointed out by Republic of Kenya (1988) that day secondary school should established within reasonable walking distance and as far as possible be developed on the precincts of existing primary schools in order to share common facilities.
Sharing common facilities saves on costs. Whether this recommended measurer has been implemented in public secondary schools and how, calls for a study.

Wambua (2002) observes that the process of the provision of education should be user friendly and need not be unnecessarily expensive. There is need to solicit for the input of local communities on the best way to reduce the cost of education without necessarily compromising its quality. The ministry can play a leading role in this aspect by knocking off unnecessary costs burdens on parents. For instant, the ministry must move in to regulate and harmonize the materials required for students at different levels of learning. The ministry should further put in place an effective monitoring procedure to ensure that parents and guardians are not burdened unnecessarily.

A study commissioned by World Bank (1989), in collaboration with the Ministry of Education (MoE) equally reveals that, improved management of education resources could reduce that burden of education to both private and public sector. At the primary and secondary level for example, better institutional management in the procurement of items such as books and equipment so that there is bulk purchasing by schools for shared use by students could reduce the current costs of such items to the parent by as much as two thirds. It may also be feasible to realize cost effectiveness and efficiency through comprehensive measures involving the review of the current school staffing patterns and the redeployment of some teachers from over staffed districts to other. Through the application of modern electronic technologies such as radio, video and television, it may be feasible to hold down the costs of teaching staff at all levels of education. At the University levels, there may be opportunity for reducing the relatively high costs of non teaching staff that out number the academic staff by four to one. According to the study, these are areas that require further study and research with a view to enhancing the opportunities for reducing the costs of education.

As revealed by Republic of Kenya (1993), it was pointed out at a KESI workshop that, cost-effectiveness and cost-reduction is realized through ensuring that quality goods are ordered and received from the cheapest suppliers, acquiring when is season and storing safely for use, stores, accountability and thrift/careful use for the purpose for which items are ordered and effective procedures for issues, repair and replacing appropriately. Further as regards maintaining education cost in school, the workshop recommended that pupils should be counseled to appreciate the financial implications of careless use, damage and wastage arising
out of their activities and behavior. Respect to and better use of public equipment provided to pupils for their use should be emphasized in order to increase the life of the equipment besides reducing their rate of repair. Students should also carry out non-curricular and non-specialized chores to reduce the number of subordinate and support staff hence minimizes parents’ financial strain. According to the workshop, students should for instance maintain the scroll grounds and cleanliness. This should however be done in consultation with parents and counseling students where this has not been the case. Schools should purchase their supplies in bulk from the least expensive sources as a measure toward cost saving. Tendering procedures should be flexible facilities to be purchased from less expensive sources, particularly during harvesting time when foodstuffs are reasonably cheap; Schools area advised to (as far as possible) share facilities and equipment, compare budgets and votes heads, rate of use, sources of supplies/stores and menus, in order to minimize expenses. All schools should officially by day as a matter of policy, but parent opting to send their children to boarding schools should be prepared to pay the extra cost related to boarding requirement. The acquisition and maintenance of school vehicles are becoming increasingly difficult and expensive. The overheads on vehicle are equally expensive and lead to fee increase. Where possible, schools should consider owning vehicles jointly. Raising of funds, putting it in fixed deposits and using interests realized for hiring transport when required, should be considered especially by urban schools, A study to find out whether recommendations have been effected is therefore called for.

As revealed by MoE (1994), a group discussion the 8th World Bank (IDA) Workshop, identified interventions to be put in place to make education affordable as: reduction of wastage, improved efficiency which effective teaching methods, effective, administration, minimum nutrition level, efficient financial management, rationalization of reading and learning materials and improved cost effective curriculum design, production of reading materials to cover several classes (consolidated books) costs effective evaluation and examinations, sharing of resources among schools rationalization of unit cost per student, accountability and transparency and rational mixture of both day and boarding schools. It is further revealed by MoE (1997) in a Report on Policy and Organization Review that, reform effort focused on sector problems and included introduction of cost sharing, cost recovery and cost saving measurers at all levels of education and training. It is through research that the extent to which such suggestions are being practiced in schools could be realized and recommendation made accordingly.
It is further pointed out in the Master Plan on Education and Training 1997 – 2010 that, to conserve on development resources, expansion will be based on increasing (in most parts of the country) existing single and double – stream schools to at least triple – stream before establishing new ones and as opposed to being boarding, new schools should be day institution. Following measures to develop day schools as quality institutions, admission policy will be reformed to ensure that students attend the schools nearest to their place of residence. Admission will gradually be decentralized to the school level. Another policy according to the Master Plan (Ibid) is that, the curriculum will be reduced both in terms of subjects and content and this will lead reduced costs to the household and government. Concerning raising efficiency in staffing the curriculum – based established will be reviewed. Aimed at raising the pupils – teacher ratio of secondary education to a national average of between 25:1 and 30:1, the proposed study will investigate factors associated with current unsatisfactory deployment and make recommendations for equitable staffing across province, districts and school. Effort has been made to reduce the curriculum but equitable staffing is yet to be satisfactorily done. Regarding building code, emphasis will be placed on putting up affordable but functional school buildings. Building codes, which maximize the use of cheap local materials and labour will be adopted. It is further revealed in the Master Plan that, the issues of what constitutes the totality of essential learning requirements in schools has not been sufficiently addressed. As a result a wide range in costs of resource demanded by schools has developed. Rationalization as recommended in the MoE Report (1994) could help save costs. According to the Master Plan equally important, the establishment of an appropriate unit costs need to be accompanied by an appropriate balance in meeting salary and non – salary requirements of schools.

Several questions may be asked at this point focusing on, the extent to which public secondary schools in Kenya are making effort to reduce unit costs and whether the cost saving measurers in place are in line with the recommended ministry guidelines, and constraints involved.
2.5 COST AND PERFORMANCE IN KCSE EXAMINATION

Njeru and Orodho observed that the general performance in KCSE examination language and science subject was below 50% and 40% respectively in 2001 and 2002 as indicated in the table below. In the year 2001 the students’ performance was 34.7% and 34.4% for females and male respectively. The performance in the subjects dropped sharply to stand at 29.7% and 29.6% for female male performance in Kiswahili was almost at par standing at about 43%during the period under review.

They further observed that in mathematics the national mean score was 15.8% for female and 21.2% for males in 2001. This improved slightly to 16.4% and 22.5% for females and males respectively in 2002. The mean score in mathematics during the period under review was below 25%. In biology the mean score remained below 30% during the period 2001 and 2002. In physics the number of female who enrolled during 2001 and 2002 KCSE examination was less than half of the number of boys.

Orodho and Njeru further observed that on overall performance in language and science subject has not only been poor but also on the decline for both sexes. Effectively, this means that over 70% of students fail in science subject every year.

TABLE 2(c): National Students' Performance in KCSE Languages and Science Subjects, 2001 AND 2002

<table>
<thead>
<tr>
<th>Subject</th>
<th>2001</th>
<th></th>
<th>2002</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>No.Sat</td>
<td>Mean</td>
<td>No.Sat</td>
<td>Mean</td>
</tr>
<tr>
<td>English</td>
<td>89.484</td>
<td>34.71</td>
<td>104.339</td>
<td>34.44</td>
</tr>
<tr>
<td>Kiswahili</td>
<td>89.486</td>
<td>44.72</td>
<td>104.339</td>
<td>43.34</td>
</tr>
<tr>
<td>Mathematics</td>
<td>89.481</td>
<td>15.83</td>
<td>104.334</td>
<td>21.19</td>
</tr>
<tr>
<td>Biology</td>
<td>85.499</td>
<td>29.52</td>
<td>91.525</td>
<td>33.59</td>
</tr>
<tr>
<td>Physics</td>
<td>16.225</td>
<td>22.22</td>
<td>38.425</td>
<td>26.84</td>
</tr>
<tr>
<td>Chemistry</td>
<td>84.534</td>
<td>21.45</td>
<td>96.862</td>
<td>25.31</td>
</tr>
</tbody>
</table>

**SOURCE: KENYA EXAMINATION COUNCIL**

It was observed in the directorate of higher education Jan 2007 that secondary education has also been characterized by poor performance in KCSE examination especially in core subject such as mathematics.
TABLE 2 (d): KCSE SCORE 2005

<table>
<thead>
<tr>
<th>Subject</th>
<th>A</th>
<th>A-</th>
<th>B+</th>
<th>B</th>
<th>B-</th>
<th>C+</th>
<th>C</th>
<th>C-</th>
<th>D+</th>
<th>D</th>
<th>D-</th>
<th>E</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics</td>
<td>3649</td>
<td>2423</td>
<td>3617</td>
<td>4380</td>
<td>5507</td>
<td>6927</td>
<td>8600</td>
<td>10932</td>
<td>3816</td>
<td>34672</td>
<td>56870</td>
<td>107864</td>
<td>152179</td>
</tr>
<tr>
<td>Chemistry</td>
<td>4218</td>
<td>4459</td>
<td>9684</td>
<td>12894</td>
<td>14717</td>
<td>18137</td>
<td>21539</td>
<td>24330</td>
<td>21943</td>
<td>56365</td>
<td>35143</td>
<td>11529</td>
<td>224581</td>
</tr>
<tr>
<td>Overall</td>
<td>3063</td>
<td>1764</td>
<td>3451</td>
<td>3797</td>
<td>3741</td>
<td>7000</td>
<td>7107</td>
<td>7547</td>
<td>6388</td>
<td>13548</td>
<td>9210</td>
<td>2831</td>
<td>66899</td>
</tr>
</tbody>
</table>

HIGH COST OF SECONDARY EDUCATION

The GOK provide fee guidelines for the different types of school ranging from Kshs.29400 for national school Kshs.23400 for boarding school and Kshs.11000 for day schools. Table below shows some summary income and expenditure data for 2006 that is draw from a random sample of eight urban day schools.

Table 2(e) public school secondary schools cost analysis 2003/04

<table>
<thead>
<tr>
<th>item</th>
<th>Day schools only</th>
<th>Average all types of schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOK spending on teachers</td>
<td>5,986,517</td>
<td>169,134,00</td>
</tr>
<tr>
<td>GOK spending on bursaries</td>
<td>6,294,358</td>
<td>177,831,26</td>
</tr>
<tr>
<td>Total spending by GOK</td>
<td>26,378,6</td>
<td>82,305,7</td>
</tr>
<tr>
<td>average amount</td>
<td>23,862</td>
<td>21,606</td>
</tr>
</tbody>
</table>


In addition to the above there are non-fee costs that are borne by household for indirect cost such as transportation, lunch, uniforms, development fee and private tuition and textbooks.
2.6 SUMMARY OF THE LITERATURE REVIEWED

The reviewed literature has shown that the rising costs of education all over the world require efficiency in the utilization of resources to reduce unit costs and ease financial strain.

Various sources were reviewed in relation to cost saving in education, narrowing down to Kenya. The extent of implementing cost saving measures in Kenya is however barely known. It revealed in the reviewed literature that the quality of education should not be compromised in effort to minimize costs. This literature also clarifies that savings made should especially be used to improve the quality of education. Time is an important factor in cost saving as revealed in the reviewed literature. Hence this study seeks to find out the impact of cost saving measures in academic performance of Public Secondary Schools.
CHAPTER THREE

3.0 METHODOLOGY

INTRODUCTION

The purpose of this study was to establish impact of costs saving measures on academic performance in Public Secondary Schools in TESO District. This chapter discussed the procedure and strategies that were used in the study. It focuses on research design, study locale, study population, sample and sampling procedure research instruments, piloting, data collection procedures and methods of data analysis.

3.1 RESEARCH STUDY DESIGN

The survey design was used in this study. The research is descriptive in nature. This design involved collection of data in order to answer questions concerning the current status of the subjects of the study. Wiersman (1985) points out that a survey design is concerned with gathering of facts or obtaining pertinent and precise information concerning the status of phenomenon and whenever possible draw conclusion from the facts discovered.

Descriptive method is widely used to obtain data useful in evaluating present practices and providing a basis for decision.

Survey design is appropriate for this study because it enables the researcher to collect information concerning the current situation in public secondary schools in Teso district as regards to cost saving measures and make possible conclusion from the findings of the study.

3.2 STUDY AREA

The study was carried out in Teso district. The district had a population of about 250,000 and 17 secondary schools, 3 were purely. Girls boarding schools, 2 were purely boys boarding school and the rest were mixed day schools.

Some of the reasons for carrying out the study in the district were as follows:-

i. Most of the schools adopted the cost saving measures with an aim of improving on enrolment or to encourage most parents to take their children to school.

ii. The district has been performing poorly.

iii. Literacy level in the district was still very low.
3.3 TARGET POPULATION
Teso District had an enrolment of about seven thousand student, two hundred and eighty five teacher and seventeen head teachers.
The study population comprised of:-
District education officer, two quality assurance officers, two hundred and eighty five teachers, seventeen head teachers, PTA representatives of the seventeen schools and board of Governors.

3.4 SAMPLING AND SAMPLING PROCEDURE
42% of public secondary schools were purposively sampled. Purposive sampling was used because it enables the researcher to choose schools that had the data the researcher wants. Out of the 18 schools, Girls schools comprised 12%, 12% boys schools and 18% mixed day schools. Amongst those interviewed are: 42% of Head teachers, 42% B.O.G, Class teachers 12% quality assurance officers, 42% P.T.A members and 1% of the student population.

3.5 RESEARCH INSTRUMENT
The research instrument used was a questionnaire.

3.5.1 Questionnaire
Items in the questionnaire were structured (close ended) which measured the objective responses and others were unstructured (open ended) which measured subjective responses and clarified objective responses and enhanced formulation of useful recommendation to the study.
There were 5 categories of questionnaires
i. Questionnaires for head teachers that sought information on the school cost saving measure and management.
ii. Questionnaire for class teachers that sought information on class size and class performance
iii. Questionnaire for PTA representatives that sought information on the public view of the cost of saving measures.
iv. Questionnaire for students which sought information on sharing of learning resources.
v. Questionnaire quality assurance officers which sought information on recommendation of the ministry of education.
3.6 PILOTING OF THE INSTRUMENT

A Pilot study was conducted in two Public Secondary School in Teso District to measure the validity and reliability of the research instrument. Schools selected for piloting were not part of the study sample.

3.6.1 VALIDITY

The researcher sought expert opinion in assessing the validity of the instruments. According to Wiersman (1985) validity is the extent to which an instrument measures what it is supposed to measure. That is whether the instrument measures the characteristic for which it is intended. Expert in the area who includes researcher’s supervisor will help to assess the concept the instrument is trying to measure determine the set of the items or check list accurately represent the concept under study. Piloting further enables the researcher to modify and remove a ambiguous items on the instrument. Blank spaces, inaccurate responses or inconsistencies identified through piloting indicate weakness of the instrument hence they were reviewed, modified and removed.

3.6.2 RELIABILITY

According to Weirsman (1985) reliability is the consistency of the instrument in measuring what it’s meant to measure. It’s the degree to which an instrument will give similar results for the same individual at different times. To attest reliability test- retest reliability was used. The researcher administered the questionnaires to the respondents then after two weeks the questionnaires were re - administered after which the two scores were computed to established Pearson product moment correlation coefficient. A pearson product moment correlation coefficient of 0.8 was high enough for the instrument to be judged reliable.

3.7 DATA COLLECTION PROCEDURE

Research permit was applied and collected from the ministry of higher education and also from the District education officer, Teso where the intention of carrying out a research was reported. Questionnaires and interviews were administered and the information collected was analyzed.
3.8 DATA ANALYSIS.

According to Pattern (1990) massive qualitative data collected from the field need to be organized into significant patterns to reveal the essence of the data. Data analysis was both qualitative and quantitative.

Before the actual data analysis, questionnaires were checked to determine if accurate sample was obtained in terms of proportion of issued questionnaire, they were also checked for completeness. Qualitative data was analyzed in narrative form while quantitative data was analyzed using means, frequencies and percentages.

3.8.1 DATA PRESENTATION

Graphical illustration in form of tables were used to present data of the resulting finding. Research findings and conclusion of the study was drawn with the help of the information obtain from the questionnaire and from the analysis of documents. Eventually recommendation was drawn from the research findings.
CHAPTER FOUR

4.0 DATA, ANALYSIS, PRESENTATION AND DISCUSSION OF FINDINGS.

4.1 INTRODUCTION

The purpose of this study was to establish the impact of cost saving measures on access and performance of public secondary schools in KCSE examination in Teso district. The findings are presented on the basis of research questions.

4.2 Questionnaires return rate and respondents profile.

The researcher collected data using questionnaires which were given out to 108 respondents. Only 90 respondents returned the questionnaires which is 83.3% return rate.

Given below is the respondent’s profile

<table>
<thead>
<tr>
<th>Table 4(a)</th>
<th>Respondents Profile</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>40</td>
<td>37.0</td>
</tr>
<tr>
<td>Class teacher</td>
<td>15</td>
<td>14.0</td>
</tr>
<tr>
<td>PTA Representatives</td>
<td>16</td>
<td>14.8</td>
</tr>
<tr>
<td>Quality assurance officer</td>
<td>12</td>
<td>11.1</td>
</tr>
<tr>
<td>Principals</td>
<td>7</td>
<td>6.4</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>83.3</td>
</tr>
</tbody>
</table>

4.3.1 Cost saving measures that are in place in the utilization of resources in public secondary schools in Teso District?

The first research question was to identify cost saving measures

Table 4(b) cost saving measures identified

N is not equal to 90 because the question triggered different and varied answers as presented in the table below
<table>
<thead>
<tr>
<th>Measure</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reducing the number of Human Resources</td>
<td>80</td>
<td>89.9</td>
</tr>
<tr>
<td>Involving student in Performing of some duties</td>
<td>90</td>
<td>100.0</td>
</tr>
<tr>
<td>Sharing of physical resources</td>
<td>90</td>
<td>100.0</td>
</tr>
<tr>
<td>Repair and maintenance of facilities</td>
<td>90</td>
<td>100.0</td>
</tr>
<tr>
<td>Income generating activities</td>
<td>60</td>
<td>66.7</td>
</tr>
<tr>
<td>Time resources</td>
<td>30</td>
<td>33.3</td>
</tr>
<tr>
<td>Purchasing items in bulk and when in season</td>
<td>90</td>
<td>100.0</td>
</tr>
</tbody>
</table>

From the table above, 100 percent of what involved students in performing of some duties, 100 percent shared physical resources, and 100 percent repaired and maintained their facilities. 89.9 percent reduced their human resource, 66.7 percent had income generating activities and 33.3 percent utilized their time well. Given that time neither is a resource that is never enough and can neither be recovered when wasted or be stored for future use, this study shows that many school administrators have not taken up time as a resource which is at risk. In sessional paper no.6 of 1988, the need to cost effectively use resources at the disposal of school including land, finances, teachers, time, facilities and equipment to bring about efficient provision of quality and relevance in education is outlined. The need for efficiency is also pointed out by the republic of Kenya (1993), whereby at a Kenya education staff institute (KESI) workshop was revealed at studies carried out by UNICEF in seven districts suggest that the worsening economic situation requires better management of schools and efficient use of available school resources. In this regard, this study finds that time is the most wasted resource and which the schools visited have not taken seriously possibly leading to incomplete syllabuses, last minutes rush and possible effect on the school performance.

What does the study say about cost reducing strategy?
4.4 What is the impact of cost saving measures on performance in KCSE examination

Maximum utilization of human resources is an essential cost saving measure. The researcher sought to find out how teachers, non-teaching staff and students were utilized in the study schools.

4.4.1 Utilization of teaching staff

Pupil-teacher ratios and average teaching loads per week were considered to determine whether teachers were maximally utilized and whether schools were justified to engage in extra expenses of employing BOG teachers.

Table 4C Pupil – Teacher ratio

<table>
<thead>
<tr>
<th>Ratio</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 20:1</td>
<td>11</td>
<td>12.2</td>
</tr>
<tr>
<td>Between 20 – 30 :1</td>
<td>20</td>
<td>.22.2</td>
</tr>
<tr>
<td>Above 30:1</td>
<td>59</td>
<td>65.6</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>100</td>
</tr>
</tbody>
</table>

It was revealed that 65.6% of the schools under study had a pupil-teacher ratio of 30:1, 22.2% had a pupil-teacher ratio of between 20-30:1 and 12.2% of the schools had a pupil-teacher ratio below 20:1. As revealed in the master plan on Education and training 1997-2010, plans to reduce costs showed that pupil-teacher ratio of secondary education would be raised to a national average of between 25:1 to 30:1. From the study, it means that in Teso, pupil-teacher ratio is above 30:1 when it supposed to be a maximum of 30 pupils per teacher and not more than 30. This has a negative implication on academic performance since the teacher is unable to reach the many students. The high pupil-teacher ratio makes it difficult for the teacher to interact closely with each student leading to poor performance in KCSE examination.

You haven’t shown this besides the ministry’s recommendation 40:1
It was also revealed that all schools (100 percent) employed BoG teachers and 60 percent of the schools employed more than 5 BoG teachers which mean higher expenditure. This is in line with the master plan on education and training 1997-2010 in relation to this, points out that it is feasible to realize cost effectiveness and efficiency through comprehensive measures involving review of the current staffing patterns and redeploying of some teachers from overstaffed districts to others. From table 4(d) above, it can be deduced that most schools are understaffed and that is why schools have to employ BoG teachers. This impacts negatively on performance since most of the BoG teachers employed may not be qualified or trained. Is this proof enough?

![Table 4(d) Number of BoG Teachers employed](image)

<table>
<thead>
<tr>
<th>Number of BoG teachers</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 5</td>
<td>7</td>
<td>40</td>
</tr>
<tr>
<td>Above 5</td>
<td>11</td>
<td>60</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>100</td>
</tr>
</tbody>
</table>

As shown in table 4(e) most 68.4 percent language teachers, 57.9 percent science teachers, 26.3 percent Arts teachers, 51.1 percent mathematics teachers, 26.3 percent art teachers, and 10.5 percent technical subjects teachers taught above 27 lessons.

This indicated that the majority of teaches of arts, and technical subjects were underutilized. This corresponds with the World Bank report which indicates that there is evidence from many parts of Africa today that capital and teachers are relatively under utilized at the
secondary level. Worse of are the non science teachers. Inequitable staffing among schools was noted as contributing to under staffing in some schools and over staffing in others. Equitable distribution of teaching staff across provinces, districts and schools pointed out in the master plan on education and training 1997-2010, has not yet been achieved. It is only after the TSC is fully equitably redistributes teachers across the country that the correct number of teacher shortage can be revealed.

Is this from your study? Is what in the for seven schools or for entire area? Table not clear

Table 4(h) shows performance in some of the subject areas.

<table>
<thead>
<tr>
<th>Average mean Grade</th>
<th>For the year 2007-2009</th>
<th>Mean score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>D- (Minus)</td>
<td>2</td>
</tr>
<tr>
<td>Sciences</td>
<td>D (Plain)</td>
<td>3</td>
</tr>
<tr>
<td>Languages</td>
<td>D+ (Plus)</td>
<td>5</td>
</tr>
<tr>
<td>Arts</td>
<td>B+ (Plus)</td>
<td>10</td>
</tr>
<tr>
<td>Technical Subjects</td>
<td>B (plain)</td>
<td>9</td>
</tr>
</tbody>
</table>

From the table, arts subjects had a mean grade of B+ (plus), followed by technical subjects with a B (plain). The rest of the subject areas scored a mean grade of D+ (plus) and below. As revealed in the table 4(h), the poor performance was due to overloading of teachers. For effective teaching to occur, teachers should not be overworked. Teachers should only handle up to a maximum of 27 lessons per week.

Did you establish this from research?

4.4.2 Utilization of Non teaching staff

Maximize use of the non teaching staff by schools is essential to help minimize costs. These are the support staff who include cleaners, security personnel, messengers, clerks and gardeners. A limited number of workers could be maximally used to carry out the duties in schools. Currently MoEST (2004) recommends a pupil-worker ratio of 30:1. This study therefore sought to determine whether the support staff in the schools was maximally utilized as a cost saving measure. Pupil-worker ratio for the study schools is reflected in table 4(f) below
<table>
<thead>
<tr>
<th>Ratio</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 20:1</td>
<td>10</td>
<td>11.1</td>
</tr>
<tr>
<td>Between 20 – 30 :1</td>
<td>30</td>
<td>33.3</td>
</tr>
<tr>
<td>Above 30:1</td>
<td>40</td>
<td>44.4</td>
</tr>
<tr>
<td>Above 40:1</td>
<td>10</td>
<td>11.1</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>100</td>
</tr>
</tbody>
</table>

I thought you had 7 schools. What are these frequencies?

44.4 percent of schools had a pupil worker ratio of between 30-40:1, 33.3 percent of the schools had a ratio of between 20-30:1, 11.1 percent of the schools had a ratio of above 40:1. The not clear majority of schools are therefore under employing workers who then absorb a low proportion of the school finances in form of salaries.

What is the recommended ratio? And what should be the total frequency

4.5 What is the impact of cost saving measures on learning/teaching resources?

The study focused on basic learning resources physical resources distinct of boarding (not clears) schools were not included in the study. Basic learning resources are essential and their sufficiency should be given priority in order to enhance the quality of education in schools.

However in cases of insufficiency, alternatives including improvisation and sharing could be used. Although these are cheaper ways of meeting learning needs, care has to be taken not to compromise the quality of education. The basic learning resources considered in this case included classrooms, textbooks laboratories and libraries.

4.5.1 Availability

This study sought to determine the availability of physical facilities in the schools and whether there was improvisation of some of the facilities.
Table 4(j) Information of availability, repair and maintenance

<table>
<thead>
<tr>
<th>Physical Facilities</th>
<th>Availability</th>
<th>Adequacy</th>
<th>Improvised</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Laboratories</td>
<td>68.5</td>
<td>31.5</td>
<td>26.3</td>
</tr>
<tr>
<td>Text books</td>
<td>73.7</td>
<td>26.3</td>
<td>15.8</td>
</tr>
<tr>
<td>Classrooms</td>
<td>100</td>
<td>0</td>
<td>78.9</td>
</tr>
<tr>
<td>Library</td>
<td>26.3</td>
<td>73.7</td>
<td>15.8</td>
</tr>
</tbody>
</table>

Table 4 (j) shows that although most of the schools had the necessary basic learning resources, they were not enough to support efficient learning.

The head teacher’s response indicated that alternatives used were make-shift laboratories, alternative rooms including rooms for practical subjects, the library and hall were used in cases of few classrooms and in other cases, classrooms were used to supplement the library. It was also revealed that available resources like laboratories and libraries were poorly equipped in most of the schools.

4.5.2 Regular repair and maintenance of facilities

Regular repair and maintenance of facilities to an extent saved on cost of purchasing new ones. The researcher sought to find out how often facilities were repaired and maintained in the study schools. The head teachers’ response on repair and maintenance of facilities are reflected in Table 4 (k).

Table 4(k) Repair and Maintenance of facilities

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) When extremely necessary</td>
<td>15.8 indicate the number of schools with this response</td>
</tr>
<tr>
<td>ii) when funds are available</td>
<td>52.6</td>
</tr>
<tr>
<td>iii) sometimes</td>
<td>5.3</td>
</tr>
<tr>
<td>iv) regularly</td>
<td>26.3</td>
</tr>
</tbody>
</table>
Repair and maintenance of facilities in most schools were actually determined by availability of funds. The best way is regular maintenance. This is inline with the Republic of Kenya (1993) report which pointed out at a KESI workshop that, cost-effectiveness and cost - reduction is realized through ensuring that quality goods are ordered and received from the cheapest suppliers, acquiring when is season and storing safely for use, stores, accountability and thrift/careful use for the purpose for which items are ordered and effective procedures for issues, repair and replacing appropriately. This has no relationship with repairs

4.5.3 Time Resource

Efficient utilization of time including punctuality and maximum use is an essential cost saving measure. This study sought to establish how time was managed in the schools. In relation to this, information was sought on time management by teachers, non-teaching staff and students. Not clear

4.3.5.1 Time management by teachers, non – teaching staff and students.

The head teachers response on how teachers, non-teaching staff and students generally managed time are shown in Table 4(o) head teachers’ response on time management by teachers, non-teaching staff and students in percentages.

<table>
<thead>
<tr>
<th>School Members</th>
<th>Very good</th>
<th>Good</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching staff</td>
<td>5.3</td>
<td>73.7</td>
<td>21.1</td>
</tr>
<tr>
<td>Non Teaching staff</td>
<td>0</td>
<td>73.7</td>
<td>26.3</td>
</tr>
<tr>
<td>Students</td>
<td>15.8</td>
<td>57.9</td>
<td>26.3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

From table 4(o) most of the head teachers rated teaching staff, non teaching staff and students above average in time management. However, quite per were rated outstanding time manages. The majority of school members therefore do not utilize the available time efficiency, your data analysis indicates otherwise
4.6 What is the impact of cost saving measures on completion?

The table gives an average number of repeaters and drop outs in the year 2007, 2008 and 2009.

**Table 4(i) Average number of repeaters and dropouts per school**

<table>
<thead>
<tr>
<th>An average number of repeaters and dropouts per year</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 20 How many schools were in this study?</td>
<td>5</td>
<td>27.8</td>
</tr>
<tr>
<td>Above 20</td>
<td>13</td>
<td>72.2</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>100.0</td>
</tr>
</tbody>
</table>

It was revealed that 72.2 percent of the schools had an average number of repeaters and drop outs of above 20 students and 27.8 percent had 20 repeaters and drop outs per year.

**Interpretation?**

4.7 What is the impact of cost saving measures on access to public secondary schools in Teso District?

**Say something here**

4.7.1 Income generating activities

Income generating activities are essential supplementary source for schools. The research sought to establish whether the study schools had income generating activities. The head teachers' responses were as shown in table 4(m).

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4</td>
<td>44.4</td>
</tr>
<tr>
<td>No</td>
<td>3 how many schools did you have</td>
<td>33.3</td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
<td>22.2</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>100</td>
</tr>
</tbody>
</table>

The table below shows the frequency and percentage of school which have reduced on fee levied to students due to income generating activities. Where is the evidence
Table (4n) Fee levied on students

<table>
<thead>
<tr>
<th>Reduction of fee levied</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4</td>
<td>44.4</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>33.3</td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
<td>22.2</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>100</td>
</tr>
</tbody>
</table>

44.4 percent of schools have reduced the fee levied on students due to income generated from projects, while 33.3 percent maintained the fee they lay on students. This is an indication that 44.4 percent of the schools have addressed the issue of dropouts by maintaining students at school. On financing secondary education in Zimbabwe, Lewin and Caillods (2001) observed that there being no likelihood of the overall public resources allocated to education growing in real terms, then improvement in access, retention and quality had to be largely financed from improvements in distribution, more efficient use of existing resources and the maximum use of alternative sources of finance. Hence access has been enhanced and so does their performance.

From table 4 (n) 44.4% of the schools had income generating activities of these; the head teachers gave farming as the most commonly practiced economic activity. Hiring of school facilities did not commonly come out as an income generating activity.

4.4.3 Involving students in performing some of the duties in schools
Performances of some of the duties in schools by students’ could minimize costs.

Where the list of income generating activities

Table 4(o) Involvement of student in performing duties

<table>
<thead>
<tr>
<th>Students involvement in performing duties</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involvement of students</td>
<td>90 are this the students</td>
<td>100</td>
</tr>
<tr>
<td>Non involvement of students</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>100</td>
</tr>
</tbody>
</table>
From the table, all schools involved students in performing some of the chores in school. This is inline with UNESCO (2004) report which asserts that pupils are a good source of school funds if they can see the benefits both for themselves and their school. The following ways of involving your pupils were recommended by UNESCO.

(i) Generating funds through such activities as agriculture, keeping poultry, pigs and cattle, making crafts and beekeeping.

(ii) Fund raising activities, for example, music, dance, games and sports, exhibitions, charity walks and jumble sale (UNESCO 2004)

Purchases

As revealed by Republic of Kenya (1993), it was pointed out at a KESI workshop that schools should purchase their supplies in bulk from the least expensive sources as a measure towards cost saving. Tendering procedures should be flexible to facilitate purchases from less expensive sources, particularly during harvest time when foodstuffs are reasonably cheap. World Bank (1999), observes that better institutional management in the procurement of items like books, equipment so that there is bulk purchasing by schools for shared use by students could reduce the current cost of such items to the parent by as much as two thirds. This study therefore sought to find out whether purchase in the study schools were made in bulk for commodities that required this and also find out its impact on academic performance. The head teachers responded as shown in table 4(p)

<table>
<thead>
<tr>
<th>Nature of purchases</th>
<th>frequency</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>In bulk</td>
<td>4</td>
<td>21.1</td>
</tr>
<tr>
<td>Sometimes in bulk</td>
<td>13</td>
<td>68.4</td>
</tr>
<tr>
<td>Not in bulk</td>
<td>2</td>
<td>10.5</td>
</tr>
</tbody>
</table>

From table 4(p), only 21.1 percent of the schools reported making purchases in bulk. Limited funds were given as the main reason for inability to make purchases in bulk. Most of the head teachers reported purchasing their supplies from the least expensive sources. It however revealed that although most of the study schools had tendering committees, some were not
functional and the responsibility of procurement of goods and services was left to the head teachers. There was also conflict of interest whereby stakeholders were also key suppliers of the schools they were managing.

Savings

Through sound financial management savings may be made and priority should be given to improving the quality of education when savings are made. For instance, a portion of savings could be used to provide learning materials and teacher support services such as laboratory and library assistants and duplicating machines. Some savings may also be left for expansion. World bank (1988) observes that a substantial part of the savings have to be redirected to increasing recurrent inputs including instructional materials but some resources may be left for expansion.

This study sought to find out whether savings were made and how they were utilized and hence their impact on academic performance in KCSE examination.

From the head teachers response, 42.1 percent of the schools made savings and 26.3 percent of these schools had savings between Ksh 100,000 and Ksh 275,000, 5.3 percent of the schools saved Ksh 10,000, 5.3 percent saved Ksh 5000 and 5.3 percent did not specify the amount saved. It was however revealed that only 10.5 percent of the schools that reported making savings utilized their savings to purchase textbooks, other 10.5 percent used their to offer school bursaries to needy students, 5.3 percent utilized their savings to purchase dining hall construction materials, 5.3 percent utilized their savings for PTA projects and 10.5 percent did not specify how their savings were utilized. No savings were made by 57.9 percent of the schools.

4.3.6 DISCUSSION

Performance in examination to a large extent depends on many factors such as curriculum implementation, the school attendance, availability of human resource, physical resource, class size and many others. The above data indicates that a number of factors affect the performance. In this study learning resources, utilization of the students in doing small jobs alongside initiation of income generating projects, Making purchases in bulk or while in season have been found to positively affect the performance of students in KCSE examinations in the study schools. How? This is a sweeping statement, did you get it from the study
In a nut shell the following are some of the costs saving measures identified in the utilization of resources;

i. Reducing the number of human resources
ii. involving students in performing some duties
iii. sharing of physical resources (multipurpose)
iv. repair and maintenance of facilities
v. Income generating activities
vi. Time resources
vii. Purchasing items in bulk and when in season

It was revealed that 44.4% of schools had a pupil-teacher ratio of 20:1 with 68.4% of language teachers and 57.9% science teachers, 51.1% mathematics teachers and 10.5% technical subject teachers taught above 27 lessons which indicates that the majority of teachers of arts and technical subjects were under utilized.

Notably, areas where teacher had a big workload did not perform well. Overloading of teachers as a cost saving was not a suitable option because it affected curriculum implementation since there was a delay in service delivery to students hence affecting performance.

Involving student in performing some of the duties was a suitable cost saving measure, since it also served as part of learning.

Repair and maintenance of facilities in most schools was determined by availability of funds. Income generating activities were essential supplementary source of school funds with 44.4% of the schools having reduced their fee levied on students due to income generated from projects. This enhanced education access and retention and also contributed to improved performance since it reduced the rate of absenteeism due to non payment fees. Purchasing items in bulk or when in season led to savings which were used to acquire learning materials, offer bursaries to needy students, for PTA projects and for expansion. This led to improved access and retention their by improving on performance in KCSE examination
CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter gives a summary implication of the findings followed by recommendation and suggestion for further research.

5.2 Summary of the research findings

i) Based on the results, the following is a summary of the study findings broadly presented in chapter four.

ii) Most schools, about 65.6 percent had a pupil-teacher ratio above 30:1, twenty two point two percent (22.2%) had ration of between 20-30:1 and 12.2% of the schools had a pupil-Teacher ration of the below 20:1.

iii) Sixty eight percent of language teachers, 57.9% of science and 51.1 percent of mathematics teachers taught above 27 lessons. While 26.3% of Art teachers and 10.5% of technical subject teachers taught above 27 lessons. This indicated that the majority of teachers of Art mathematics and technical subjects were under utilized.

iv) Arts subjects had a mean of B+ (plus), technical subjects had a mean of B (Plain) and the rest of the subject areas scored a mean grade of D+ (plus) and below. This indicated that overloading of teachers as revealed in (iii), resulted in poor performance. Hence overloading teachers is not a suitable cost saving measure.

v) Forty four point four percent of schools had a pupil-worker ratio of between 30-40:1 and 11.1 percent had a pupil-worker ratio of above 40:1. an indication that workers were over utilized considering the MOEST recommendation that a pupil-worker ratio be 30:1

vi) Most of the schools had the necessary basic learning resources but they were not enough to support learning.

vii) Forty four point four percent of schools had income generating projects and consequently reduced fee levied on students due to income generated from the projects. This is an indication that access was enhance and so does performance improve.
viii) Most of the head teachers rated teaching staff and non teaching staff above average in time management. However, quite a few were rated outstanding time managers. The majority of school staff therefore did not utilize the available time efficiency. This could be contributing factor to poor performance since it affects curriculum completion.

5.3 Conclusion

From the findings of the study, it can be conclude that.

i) Most schools were understaffed contributing to high expenditure due to employment of BOG teachers. It was revealed that most schools employed untrained BoG teachers. This has an effect on the quality of teaching process there by affecting performance negatively.

ii) The poor examination results in the majority of schools was basically as a result of inefficiency in the use of resources worst hit being time.

iii) A majority of teachers taught above 27 lessons per week. teachers lack adequate time for lesson preparation there by affecting the quality of teaching process. In as much as schools were saving in terms of inadequate BoG teachers, performance in KCSE examination was poor due to overloading of teachers.

iv) Learning resources were not adequate to support learning. Instructional materials especially textbooks, science equipment, reference materials are quite crucial to students learning at secondary school level. The study established that secondary schools in Teso face a diversity of inequalities ranging from quality of buildings and instructional materials, especially text books, and reference books to numbers and quality of teachers. Yet all crucial requirements in enhancing learning.

v) Repair and maintenance were mainly done when funds were available.

vi) Income generating activities enhanced access in public secondary schools since income from projects was utilized to either offer bursaries to needy students or subsidized on fee levied. This also enhanced retention besides access.

vii) Purchase of items in bulk and when in season, enhanced access and retention since funds saved were used to offer bursaries to needy students.
viii) Pupil-teacher ratio of a majority of schools was above 30:1. Cost saving was realized in this since schools did not employ adequate BoG teachers. However, this affected performance, since handling many students by one teacher, makes the teacher to be less effective.

5.4 RECOMMENDATION
i) Under utilized teaching staff to be redeployed to other schools.
ii) The schools should employ the recommended number of school workers to ensure efficiency thus reduction in time wastage and subsequent better performance.
iii) The optimum number of lessons per week that teachers should have is 27 and therefore the school heads should recommend employment of more teachers whenever teacher overload is noted to ensure efficiency and effectiveness in the delivery of the study content to be disseminated.
iv) Income generating activities could be enhanced to ensure that the schools cost cut the fee levies alongside supplement the existing resources.
v) Schools should be well equipped with basic learning resources because they determine the performance in examinations. in this regard the school heads should prioritize the most strained school resources for maintenance and consideration for replenishment and installation/ building of new facilities

5.5 Suggestions for further research
i) A similar research needs to be carried out on a wider region and a larger population beyond the district to ensure that a broader picture of the phenomena is brought on board. The purpose would be to give a more generalized understanding to the subject and also make the information broader for generalizations
ii) Impact of cost saving measures on performance should be investigated at other levels of education like primary and tertiary institution.
REFERENCES


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____________ (2001) Education sector issues, challenges, policies and strategies. MOE.


APPENDIX I
INTRODUCTION LETTER TO THE HEADTEACHER

EMMA PATRICIA IPAYA
KENYATTA UNIVERSITY
DEP OF EDUCATIONAL MANAGEMENT,
 POLICY AND CURRICULUM
STUDENTS
P.O. BOX 43844
NAIROBI.

Dear Sir/Madam

RE: QUESTIONNAIRE FOR RESEARCH PROPOSAL

I am a post graduate student in Kenyatta University, undertaking a master of education course in education planning. I am carrying out research on the impact of cost saving measures on access and performance in public secondary schools in Teso district.

You have been randomly saluted to participate in this study of the respondents this research is purely academic and therefore I want to assure you that the information will be treated with utmost confidentiality and will not be used anywhere else beyond this study. Please fill this questionnaire as honestly as possible.

Thank you in advance.

Yours faithfully

Emma Patricia Ipata
APPENDIX II

Questionnaire for Head-teacher

ORGANIZATION STRUCTURE

1. What is the enrolment of your school?
   - Form 1
   - Form 2
   - Form 3
   - Form 4
   - Total

<table>
<thead>
<tr>
<th>No</th>
<th>STAFF</th>
<th>NUMBER</th>
<th>SHORTAGE (IF ANY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Teaching a) TSC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) BOG</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Non Teaching Staff</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No</th>
<th>Facilities</th>
<th>Nature Temporary/Permanent</th>
<th>Number</th>
<th>Shortage (If any)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Classrooms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Libraries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Laboratories</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Dormitories</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Pit Latrines /Toilets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Department</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Offices</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. What measures has the school taken to address the shortages in the following arrears.
   a) Support Staff: ____________________________________________________________
   Teachers: _________________________________________________________________
   Physical facilities: _________________________________________________________
   General Inadequacy of funds: ______________________________________________

5. a) Does the school have any income generating projects?
    Yes [ ] No [ ]

   b) If available, specify the areas e.g. Agriculture, commerce etc.)

6. i) In your view, what can you say about the amount of fees levied by your school.
    a) High [ ]
    b) Average [ ]
    c) Affordable [ ]

   ii) In view of the amount of fees charged, can you say your school has adequate facilities required
    Yes [ ]
    No [ ]
7. What are the impacts of income generating projects (if available) on the following.
   i) Resources available, such as teachers, support staff, furniture, physical facilities etc.
      a) Have been increased
      b) Have been maintained
      c) Both
   ii) Fee payment
      a) Has improved since school fees has been reduced
      b) Has not changed because of increasing prices (inflation)

8. If improved, what are the effects on the student school attendance and general performance in KCSE.

Furniture
   i) Does the school have enough furniture for students and staff.
      Yes [ ]
      No [ ]
   ii) What type of materials is the furniture made from e.g. metallic or wooden.
   iii) Do you think the price of furniture is high? Specify.
   iv) How frequent are they replaced or repaired
      a. Not frequent [ ]
      b. Frequent [ ]
      c. Rarely [ ]
**Text Books**

i) How does the school acquire its text books
   a) Purchase by the school
   b) Purchase by parents and guardians
   c) Donation from sponsors and well wishers
   d) All the above.

   (Tick on where appropriate)

ii) State the number of titles that school recommends per subject/class.

iii) Briefly give reasons for the number recommended.

iv) Give the average number of students that share a text book in the school

v) How have the text books and their number helped the school to improve in academic performance.

**Purchases**

1. How do you make purchases of essential commodities?
   (I) Always in bulk
   (II) Sometimes in bulk
   (III) Not in bulk

   Briefly explain your answer

2(a). Did you make any savings in 2003?
   Yes
   No
(b) If yes, specify the amount and how it was utilised.

Time management and school performance
1. What is your general impression concerning time management by the following in your school? Please tick as applicable
   (i) Teaching staff
       Very Good☐ Good ☐ Average ☐ Poor ☐
   (ii) Non-teaching staff
       Very good ☐ Good ☐ Average ☐ Poor ☐
   (iii) Students
       Very good ☐ Good ☐ Average ☐ Poor ☐

2 (a) What other cost saving measures has your school put in place?
   (i) ____________________________
   (ii) ____________________________
   (iii) ____________________________
   (iv) ____________________________
   (v) ____________________________

(b) What other limitation do you encounter in your efforts to maximumly utilize resources and minimize costs in your school?
   (i) ____________________________
   (ii) ____________________________
   (iii) ____________________________
   (iv) ____________________________
   (v) ____________________________
(c) What recommendations do you give in regards to limitations in 11(b) above?

(i) ________________________

(ii) ________________________

(iii) ________________________

(iv) ________________________

3 a. What was your school's KCSE mean score and mean grade for the years 2007, 2008 and 2009

<table>
<thead>
<tr>
<th>KCSE RESULTS</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEAN SCORE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEAN GRADE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. Does the way you utilize resources have an effect on the school's results?

Yes □

No □

Explain

________________________________________________________________________

________________________________________________________________________

4 (a.) What other cost saving measures has your school put in place?

i) ________________________

ii) ________________________

iii) ________________________

iv) ________________________

b. What other limitations do you encounter in your efforts to maximally utilize resources and minimize costs in your school?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

56
c. What recommendations do you give in regards to limitations in 11(b) above?

i) 

ii) 

iii) 

iv) 

5 a. How many students repeated the same class and dropped out of school in the years 2007, 2008 and 2009? Indicate using the table below.

<table>
<thead>
<tr>
<th>Year 2007</th>
<th>Year 2008</th>
<th>Year 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form 1</td>
<td>No of repeaters</td>
<td>No of Dropouts</td>
</tr>
<tr>
<td>Form 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Form 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Form 4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. Briefly explain any effects the above number of repeaters and dropouts has to the running of the school

6 a. What is the average teaching load per weak in your school? Please specify where necessary (e.g for sciences, arts, languages, technical etc).

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Average teaching load per week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7 Do you have some cases of school non teaching staff combining duties?

Yes [ ]
No [ ]

b. Give reasons for your answers in 13 (a) above.

________________________________________

________________________________________

8 a. Do you involve student in carrying out some duties in the school?

Yes [ ]
No [ ]

b. If yes, specify the duties

3) _______________________________________

4) _______________________________________

5) _______________________________________

c. Give reasons for involving student in carry out some duties?

________________________________________

________________________________________
APPENDIX III

CLASS TEACHER

1. What is the population of your class?

2. What is your view of the use of resources and space in your class in relation to the population of students.
   a) Adequate
   b) Overstretched

3. What can you say about the student's absenteeism in your class?
   a) Chronic
   b) Not chronic
   c) Not a problem.

4. If there is absenteeism, what is the most important reason for the absenteeism?
   a) Non payment of fees
   b) Sickness
   c) Any other reason

5. Considering the class population are resources such as text books adequate
   a) Adequate
   b) Not adequate

6. Identify the subject that students are frequently given assignment (Identify one subject only).

7. How frequently are students given assignments and marked per week in the subject you have mentioned.
   a) Frequently
   b) Often
   c) Rarely
   d) Not at all

8. What could be the reason for the above?
   a) Text books for assignment are available
   b) Text books for assignment are not adequate
   c) Text books for assignment are not available.
9. In your view, do you think availability of resources and lesson attendance by students have affected the academic performance of the class.
   a. Yes, it has improved
   b. Yes it had reduced
   c. Has not affected
APPENDIX IV

STUDENTS

School meals

1. Specify the meals served in your school on a school day.
   a. Breakfast □
   b. Lunch □ (Tick as appropriate)
   c. Supper □

2. Of the meals that you take, specify those whose quantity should be increased and those that should be reduced.

<table>
<thead>
<tr>
<th>Food item</th>
<th>Increase</th>
<th>Reduce</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Is the time allocated for meals adequate?
   a) Yes □
   b) No □
   c) Don’t Know □

4. Do you know of students who miss meals due to non payment of fees.
   a) Yes, Many □
   b) Yes, a few □
   c) None □

5. Are student rewarded for exceptional performance in academics and sports in your School?
   Yes □
   No □
Quality assurance officers

1. Cost, resources and learning outcomes affect each other. In the table below please specify the common ratios and quantities of physical facilities available in schools within your district:-

<table>
<thead>
<tr>
<th>No.</th>
<th>Physical facility</th>
<th>Recommended</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>No of students per class</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>No. of students per support staff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>No. of students per teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>No. of students/pit latrine or toilets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Number of lessons for teachers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Number of students per text book</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Average number of times the school is</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inspected per year.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Explain how the shortage of resources mentioned above, if any has affected the performance of schools within district.
P.T.A

Adequacy of resources.

1. Specify the number of the following facilities available in your school.
   a) Office buildings __________________________
   b) Laboratory ______________________________
   c) Libraries ________________________________
   d) Dormitories ______________________________
   e) Pit Latrines ______________________________
   f) Dining hall/Kitchen _________________________

2. Are these facilities adequate?
   Yes □
   No □ (Tick where appropriate)

3. If not adequate, what could be the reason?
   a) Lack of funds □
   b) The school intends to operate within its affordable budget □
   c) Both □

4. Apart from parents and the government which other sources of funds are available to the school?
   a) __________________________________________
   b) __________________________________________
   c) __________________________________________

5. In your view, what is the response in your school concerning the amount of fee levied
   a) High □ b) Average □ c) Affordable □

6. If the response is that, levies are not affordable, which measures has the school taken to
   reduce costs?
   a) Starting up incoming generating activities
   b) Asking assistance from donors/sponsors
   c) Reducing the amount of levies charged and manner of payment
   d) Other measures specify ____________________________

7. In your opinion, have these measures helped the school to reduce costs and improve
   performance? Yes □ No □