

## Resource Utilization in Kenya Public Primary Schools: Implication for Global Competitiveness

**Limo J. Beatrice\***

Department of Educational Management, Policy &amp; Curriculum Studies, Kenyatta University, Kericho Campus, Kenya

**\*Corresponding author***Limo J. Beatrice***Article History***Received: 20.12.2017**Accepted: 09.01.2018**Published: 30.01.2018***DOI:**

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**Abstract:** Teacher's instructional materials and Educational Physical facilities are key inputs required to accelerate effective learning. The Government of Kenya sets aside a considerable amount for capital investment, this is through teacher training and remuneration. This study established the teachers' work load in public primary school for global Competitiveness and also determined the impact of FPE funds on resource improvement in public primary schools. The study was anchored on educational production function theory. Descriptive Survey Design was adopted which utilized the questionnaire, interview schedule and document analysis to gather information from a sample of 920 respondents from 40 schools who took part in the research. The Study used Stratified proportionate sampling, simple random sampling, systematic sampling and purposive sampling procedures to select the sample for the study. Data was analysed descriptively using output from SPSS version 17.0 in terms of; Frequency distribution tables, mean, standard deviation and percentage distribution techniques to establish the variations in independent and dependent variables. The findings of this study established that overcrowded classes, heavy workload, insufficient toilets and inadequate provision of physical facilities hampered the efforts by teachers to provide quality education in Kenya. This study recommends that provision of teacher proficiency courses should be streamlined and accelerated, teacher distribution should be balanced in the district for maximum utilisation of the teacher resource, existing facilities be expanded to gather for the influx of pupils and the teaching/learning resources in schools be utilized to the maximum.

**Keywords:** Resource Utilization, Public Schools, Implication, Competitiveness.

### INTRODUCTION

Education provides a firm foundation for children and contributes towards Human development. Investment in education can help to foster economic growth, enhance productivity, contribute to national and social development, and reduce social inequality [1]. The Ministers of Education, when they met for their 32nd General Conference, reaffirmed the role of teachers as purveyors of knowledge and values and as community leaders responsible for the future of our young who should be supported [2].

Governments, policy makers and civil societies have emphasised that developing countries need to invest more in education and ensure that systems of education are efficiently managed and that limited funds allocated to the sector have maximum impact [3, 4]. Since the advent of Free Primary Education (FPE), the Government and its development partners have continued to provide investments both in monetary and in terms of staff in an effort to achieve the Education For All. The quality of education offered to the 8.2 million children currently enrolled in the primary programme should be improved [5]. Attainment of EFA

goals requires a high quality teaching workforce. It has also been discovered that teacher quality variables appear to be more strongly related to student achievement.

The slow rate of economic growth Kenya is experiencing is likely to limit resources available for education there's need to utilise those already allocated efficiently and effectively. According to the country's National Development Plan [6], the development goals include the implementation of the eight Millennium Development Goals (MDG's), among which is to "achieve universal primary education". The Sessional Paper No.1 of 2005 on a Policy Framework for Education, Training and Research, underlines the Government's commitment to achieving Universal Primary Education (UPE), which is a key strategy towards attaining the overall goal of EFA.

The six goals on EFA are; Expanding and improving comprehensive early childhood care and education especially for vulnerable and disadvantaged children, ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those

belonging to minority groups have access to and complete free and compulsory primary education of good quality, ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life skills programmes.

Quality and relevance is at the heart of educational systems in the world. While countries and international organizations have committed themselves to universalizing primary education, improving and sustaining the quality is equally important. Good-quality teaching and learning environments assure effective learning outcomes [7]. The Governments' concern is on quality and relevance of FPE if the programme is to meet its stated objective of providing sustainable development for the country. The Ministry of Education (MOE) strategic plan [8], spearheaded by the Sessional Paper No.1 of 2005 and the Kenya Education Sector Support Programme (KESSP) 2005-2010 [9], endeavours to improve quality and efficiency in provision of education and training that will produce Kenyans with globally competitive skills. Provision of quality education is entrenched in the Dakar framework of action; Goal 6 recognises education as that which enriches the lives of all learners regardless of their backgrounds so that measurable learning outcomes are achieved by all. This was also echoed in Sessional Paper No: 10 of 1965 on: African Socialism and its Application in Kenya; which identified three interventions; Eradication of Poverty, eradication of Illiteracy and eradication of disease [10]. Education has the capacity to improve the quality of life and to develop the intellectual capacity of a nation, which is a valuable resource at this particular moment in time, when Kenya aims to position itself strategically in order to take advantage of new trade, business and investment opportunities [11].

It will therefore be increasingly important for the Kenyan work force to be literate, numerate, trainable, skilled and flexible, so as to effectively participate in nation building and steer the country towards the realisation of vision 2030 which aims at transforming Kenya into "a newly-industrialising, middle income country providing a high quality of life to all its citizens in a clean and secure environment" and thus seize the opportunities globalization presents [10]. A survey and evaluation of FPE program in Kenya revealed that the FPE program has met the overall objective of increasing pupil enrolment rates. Overall primary school enrolment rose by 2.8 % to 8.6 million in 2008. The Gross Enrolment Ratio (GER) for boys and girls in 2008 were 112.2% and 107.3% respectively. The Net Enrolment Ratio (NER) increased from 91.6% in 2007 to 92.5% in 2008 [5].

A rights based argument welcomes the surge in enrolment and regards it as an opportunity for

planning better quality education in an emergency mode, creating a quicker turn-around and delivering better results. Abolition of fees and charges levied to parents before the introduction of FPE meant that the responsibility of ensuring quality rests with the government. Public education systems should endeavour to offer quality education to its children so that they can compete equally and fully within the national, regional and international arena.

The endeavour of providing EFA cannot be achieved without teachers. Educational planners believe that professionally trained teachers are more efficient and effective. A lot of resources are invested in teacher training; teachers are therefore expected to offer optimal service to the education sector. In 2008, there were no untrained teachers recorded since all the teachers were upgraded to P1. Teachers with P1 were the majority accounting for 58.5% followed by Approved Teachers at 25.3% within the scheme of service for primary school teachers [5]. The government froze teacher recruitment in line with Structural Adjustment Programmes (SAP's) and introduced a policy of replacing teachers exiting service through natural attrition. The FPE programme has led to an increase in Pupil Teacher Ratio (PTR) with glaring disparities in teachers' distribution across districts in the country which is reflected by the PTR ranging from 24:1 to 120:1 [5].

According to the Economic Survey 2009, two pupils shared a book in 2008 as compared to three who shared a book in 2007; the improved ratios were attributed to the sustained release of money under the FPE programme towards procurement of teaching and learning materials at school level. The report further indicates that the number of primary schools increased by 102 to 26,206, the national pupil to teacher ratio is 45:1; this varies from region to region [5]. Though FPE has increased participation, it has at the same time created problems which have resulted in a decline in the quality of education as is manifested by poor performance in national examinations by public primary schools. The donor community equates quality with efficiency, World Bank studies focus on pupils' academic achievement. An evaluation done by Bretton Woods in the country, on World Bank support for education says "enrolment up, learning down" [12]. Even after developing a sector-wise approach to manage education, indicators show that quality of primary education is still poor and is manifested by the National Transition rate which stood at 59.9 per cent in 2008 and had otherwise been projected to hit 70 per cent by 2008 [5]. Declining performance of many schools in KCPE implies that the majority of investments in education have not resulted in increased learning.

Studies indicate that quality of an education system cannot exceed the quality of its teachers [13], an educational system which values learning outcomes requires qualified teachers with reputable academic qualifications, committed to work and enthusiastic. It is on record that many educational programmes and projects have failed mainly because they did not take the teacher factor into account [14]. It is evident that a sufficient number of competent teachers and adequate infrastructure to facilitate learning are required in order to improve the quality and relevance of educational processes in Kenya. This study will focus on effects of resource utilisation on pupil performance in Kenya public primary schools

### Statement of the problem

The quality of education as measured by pupil performance has declined, KCPE performance for the period 2007 to 2016 has gradually been dropping as indicated by the declining mean score which was; 249.49 in 2007 and 206.24 in 2016 (Education Office, 2016). Out of the 44,332 pupils who sat for KCPE in 2016, a paltry 20 pupils (0.46% of the candidates) managed to score over 375 marks which was the cut off mark for National Secondary schools for Kipkelion district as a hardship zone. Those who managed to secure admission to provincial and district schools were 690 pupils, representing 29% of the candidates. From the above scenario, it is clear that 71.54% of the pupils from the district failed to meet the KCPE cut-off points so as to join National, Provincial or District schools. This depicts a serious problem in Kipkelion District which calls for attention. The transition rate in Kipkelion District for 2008 stood at 39.46%, this was 20.24% less than the National transition rate which was 59.9% in 2008, and the neighbouring Kericho District posted a transition rate of 51.6%, and was 8% less than the National rate. This could be an indication that educational resources are being underutilised, hence the massive wastage. The District Education Officer (DEO), Kipkelion when releasing the KCPE results for the year 2016, decried the poor performance in the District and sent out a strong challenge to teachers who are key in resource mobilization in schools to improve results. It was pointed out that sustained release of FPE funds by the Government and its development partners had led to substantial improvement in the supply of textbooks and other instructional materials in all the public primary schools. This notwithstanding, performance in KCPE has been dismal, this necessitated the need to investigate the effects of resource utilisation on pupil performance in Kipkelion District in an effort to set clear benchmarks which would guide in improving the quality and relevance of primary education in this district.

### Objectives of the study

1. To establish the teachers' work load in public primary school for global competitiveness.

2. To determine the impact of FPE funds on resource improvement in public primary schools.

### Research Questions

1. Does teachers' work load in public primary school affect pupil global competitiveness?
2. What is the impact of FPE funds on resource improvement in public primary schools global competitiveness?

### THEORETICAL FRAMEWORK

The theoretical framework adopted in this study was educational production function theory (EPF) developed by Psacharaopoulos and Woodhall [11]. This theory is derived from the general production function theory (PF) which gives the relationship between inputs and outputs. It compares the practice of existing entities converting inputs X into output Y to determine the most efficient production of existing entities. EPF is an application of economics concept of a production function to the field of education where inputs are the students and educational resources going into a given school, while output is the resulting achievement upon graduation.

The general production function is expressed as:  
 $Q = F(X_1, X_2, \dots, X_n)$

Where Q, which is the output, is determined by inputs  $X_1, X_2, \dots, X_n$

Q denotes educational achievement as measured by test scores while  $X_1, X_2, \dots, X_n$  can be level of material and human inputs allocated to the school and sufficient funds. Education is a production process which uses scarce resources as inputs to produce globally competitive citizens as outputs. Output of the educational process is directly related to inputs controlled by the policy makers i.e. school characteristics, teachers and the curriculum and those not so controlled i.e. families and friends as observed by Hanushek [15]. In this study EPF has been employed to investigate the interplay and importance of various inputs in determining pupil performance in K.C.P.E national examination.

Taking performance in K.C.P.E as dependent variable, the independent variables under consideration in this study were: Teachers professional development, Teachers workload in school, Physical facilities and impact of FPE funds on resource improvement. A high quality teaching workforce (input) is required in order to attain EFA goals. It has been reported that a teacher who does not have both the academic and the professional teacher qualification would have a negative influence on lesson preparation and delivery [16] and thus result in poor academic performance (output) by learners.

The availability and use of teaching and learning materials affect the effectiveness of instruction which in turn will be reflected by pupil performance. The government and its development partners have continued to provide support to the FPE programme in an effort to achieve EFA goals by 2015. These resources must therefore be used efficiently in order to maximise production. This study thus adopted the education production function basing on the mentioned inputs to establish the effects of resource utilization on pupil performance in public primary schools in Kipkelion district.

**RESEARCH METHODOLOGY AND METHODS**

This study adopted the Descriptive Survey Design to get quantifiable information. According to Mugenda and Mugenda [17], a survey is an attempt to collect data from members of a population in order to determine the current status of that population with respect to one or more variables. This study was concerned with the effects of resource utilization on pupil performance in national examinations at public primary schools.

It specifically investigated the effects of: teachers’ professional experience; teachers’ workload in public primary schools, perceptions of pupils’ parents and teachers on condition and sufficiency of physical resources in school and the impact of FPE funds on resource improvement in public primary schools on pupil performance in KCPE. Such issues call for extensive research and are best conducted through the Descriptive Survey Design [18].

The design enabled the researcher to gather bulk information within a short period of time. The Descriptive Survey Design involved securing information concerning phenomena under study from all or selected number of respondents of the concerned universe [19]. Nevertheless, the design is largely dependent on the cooperation of the respondents and accuracy of data collection procedures.

**Population Sample Size and Sampling Procedures**

For purposes of sampling, schools in Kipkelion District were stratified into 3 divisions namely: Kipkelion Division with 52 schools and 425 teachers, Londiani Division with 44 schools and 376 teachers and Chilchila Division with 33 schools and 267 teachers. Stratified proportionate sampling technique

employed ensured that the three divisions were well represented and that differences in the subgroups were accounted for. The technique groups a population into separate homogeneous subsets that share similar characteristics so as to ensure equitable representation of the population in the sample [18].

A 30% sample of schools and 20% sample of teachers from each division were taken as per the social science requirements that a sample should be between 10% and 30% of the study population. The divisions were further stratified into zones and each zone formed a strata. Each school in all the strata was given a number which was written on a piece of paper, folded and then placed in a container. The papers were then mixed before picking the required number randomly from each stratum. This was done in order to ensure uniform representation in all the zones. The selected schools formed the sample and participants in this study.

The teachers who teach upper primary were purposively sampled since at this level subject specialisation by teachers’ sets in. The study sought to determine; teachers’ professional experience and teachers’ workload. Simple random sampling was used to select 6 teachers from each sampled school using the teacher establishment records in the head teachers’ office, the method ensured that each teacher of the target population had an equal and independent chance of being included in the sample [20].

It was assumed that each school had not less than 8 teachers according to the School Based Establishment (SBE) for a single streamed school and following. From Kipkelion division a total of 93 teachers’ and 16 schools were sampled, in Londiani division 81 teachers and 14 schools were sampled and in Chilchila division a total of 59 teachers and 10 schools were sampled. Since a total of 40 schools were sampled, 40 head teachers and 40 PTA chairpersons were automatically selected to respond to the questionnaires

**SUMMARY OF FINDINGS AND DISCUSSION**

The study sought to establish the teachers’ work load in public primary school for global competitiveness. The results were as presented in the Table 1.

**Table-1: Responses on Teachers’ Work Load in Public Primary School**

RESPONDENT	Number of Lessons in a Week				
	16-20	21-25	26-30	31-35	36 and above
<b>TEACHERS</b>	48(20)	78(32.5)	47(19.6)	35(14.6)	32(13.3)
<b>H/TEACHERS</b>	13(32.5)	23(57.5)	3(7.5)	—	—

From Table 1, it indicates that 78(32.5%) of the teachers had 21-25 lessons, those who had over 36

lessons were 32(13.3%). It can also be noted that 35(14.6%) teachers had 31-35 lessons per week. The

MOE's recommended teaching load for teachers in public primary schools is 35 lessons per week, hence, from the data in Table 7, majority of the teachers are below the recommended maximum, cumulatively, 72.1% of the teachers have lessons below 30 per week, thus are said to be underutilized according to the Ministry of Education recommendations.

All the head teachers who participated were teaching and a majority 23(57.5%) had 21-25 lessons per week, only 3(7.5%) had 26-30 lessons, while the remaining 13(32.5%) had 16-20 lessons. The head teachers are charged with school curriculum implementation and supervision other than teaching. The respondents were asked to indicate whether they had taught an examination class in the last three years, it was established that all the Head teachers 40(100%) had taught an examination class. 157(65.4%) teachers

who participated had taught an exam class in the last three years and 83(34.5%) had not taught an examination class for the period under study. Since 2007, the KCPE District mean has been dropping, all the Head teachers 40(100%) who participated in the study had taught the examination class and majority of the teachers 157(65.4%) taught the examination class in the period under study.

**Pupil Teacher Ratio in Public Primary Schools**

To further highlight on the teachers' workload in Kipkelion District, the researcher sought to establish the pupil/teacher ratio in public primary schools. The head teachers were asked to indicate the total pupils in their schools and to provide the total number of teachers in their schools. The information was then used to calculate the pupil/teacher ratio in the respective sampled schools. The results are presented in table 2.

**Table-2: Pupil/ Teacher ratio**

PTR	Freq
20-29	5(12.5)
30-39	3(7.5)
40-49	3(7.5)
50-59	11(27.5)
60-69	13(32.5)
70 and above	5(12.5)

The data from Table 2 indicates that, 13(32.5%) schools had PTR of 60-69, 11(27.5%) had a ratio of 50-59 while 5(12.5%) schools had a PTR of 20-29 and another 5(12.5%) had a PTR of 70 and above. From the analysis above, it is clear that majority (82.5%) of primary schools in Kipkelion District are overcrowded with pupils over 50 in class. This scenario leads to reduced teacher/pupil interaction and thus learning outcomes become low, this is in agreement with the study carried out by Mpokosa and Ndaruhutse [21] on managing teachers that a sharp increase in PTR reduces the effectiveness of learning which in this case is reflected by the continued drop in KCPE performance by pupils in Kipkelion District. The government froze teacher recruitment and the surge in pupil enrolment witnessed in Kipkelion does not match the recruitment of teachers.

When Head teachers were asked whether their schools attained the projected KCPE mean score for the year 2009, a majority of 35 (95%) did not attain the projected mean score and only 2(5%) schools managed to attain the mean score they had projected. In order to shed some light on the performances witnessed, Head teachers were asked to respond to a list of reasons provided seeking to provide answers as to why the projected mean score was not attained.

**Impact of FPE funds on resource improvement in public primary schools**

In view of the resource utilization in Kenya public primary schools the second objective sought to determine the impact of FPE funds on resource improvement in public primary schools. The findings are represented in Table 3.

**Table-3: Pupils Responses on Availability and Frequency of use of TLM**

TLM	Avail. In sch.	Not avail. In sch.	Freq Used	Not used Freq	Not used At all
Text books	600(100)	_____	600(100)	_____	_____
Exercise books	600(100)	_____	600(100)	_____	_____
Atlases	600(100)	_____	50(8.4)	290(48.3)	260(43.3)
Maps	600(100)	_____	75(12.5)	330(55)	195(32.5)
Radio	600(100)	_____	54(9)	102(17)	444(74)
Diagrams	600(100)	_____	65(10.8)	418(69.7)	117(19.5)
Charts	600(100)	_____	108(18)	456(76)	36(6)
Computers	75(12.5)	525(87.5)	30(5)	45(7.5)	525(87.5)
Total					

Textbooks, Exercise books, Atlases, Maps, Radios, Diagrams and Charts had a response rate of 100% from the pupils indicating their availability in schools. This is an indication that the FPE programme as improved the availability of teaching/learning resources in public primary schools. Though, 12.5% of the pupils indicated that computers were available in their schools, a majority of 87.5% of the pupils showed that computers were not available in their schools.

The available resources in schools have not been put into optimum use as shown from the responses of the pupils in table 18. On use of atlases, 48.3% of the pupils indicated that they were not used frequently and a paltry 8.4% of the pupils indicated frequent use of atlases in teaching/learning, also, 74% of the pupils indicated that radios were not used at all in their schools with 9% showing frequent use in their schools. On charts and diagrams, 18% and 10.8% of the pupils said they were frequently used respectively while 76% and

69.7% of the pupils indicated that the charts and diagrams were not used frequently.

The teachers' responses on availability and use of teaching/learning facilities are presented in Table 19. From the Table 3; Teachers course books, Teacher guides and the Syllabus were available in schools as shown by the 100% response from teachers who participated in the study. 5% of the teachers indicate that computers were available in their schools with an overwhelming 95% of the teachers reported that computers were not available in their schools. The teachers were asked on the frequency of usage of the available teaching learning materials and from their responses, the materials are not used as frequently as should be. 76.3% of the teachers reported that charts were not used frequently while 9.2% indicated frequent use. On use of radios, a majority 77.1% reported that the radios were not used at all.

**Table-4: Teachers responses on availability and use of TLM**

TLM	Avail. In sch.	Not avail. In school	Used Freq.	Not used Freq.	Not used At all.
Course books	240(100)	_____	240(100)	_____	_____
Teachers guide	240(100)	_____	240(100)	_____	_____
Syllabus	240(100)	_____	240(100)	_____	_____
Maps	240(100)	_____	23(9.6)	168(70)	49(20.4)
Radio	240(100)	_____	12(5)	43(17.9)	187(77.1)
Diagrams	240(100)	_____	62(26)	92(38)	86(36)
Charts	240(100)	_____	22(9.2)	183(76.3)	35(14.6)
Computers	12(5)	228(95)	7(2.9)	5(2.1)	228(95)
Total					

In addition to the list of teaching learning materials that pupils and teachers provided, head teachers were also asked an open ended question to list the resources that had improved in their schools as a result of FPE funds and they included; writing materials for teachers, chalk, dusters, erasers, pens and pencils. From the above discussion, it can be concluded that teaching/learning materials have been availed through the FPE programme. This was also supported by the findings of Ochenje [22] that the major achievement of the FPE programme has been the provision of instructional materials. However, there is a disparity in the use of the resources as evidenced by the pupils and teachers responses.

**CONCLUSION**

The study findings conclude that In this study, the effects of resource utilization on pupil performance in public primary schools in Kipkelion were investigated. It can be concluded that educational resource utilization has been found to be inadequate in Kipkelion District this in turn has contributed to the declining pupil performance in KCPE being witnessed in this District. It can be concluded that teachers are qualified and professionally experienced and should

therefore be held accountable for pupil performance in this district. However, these teachers are not adequately provided with in-service courses, curriculum implementation guidance to equip and prepare them to handle overcrowded classes and overage learners which has been occasioned by the introduction of FPE. Secondly, TPC is not adequately provided as it has only benefited a minority of teachers who have been upgraded, the bulk of teachers are still in their entry grades. Also, a majority of the teachers are underutilized based on lesson distribution per week which are below the MOE recommended under the School Based Establishment (SBE) per week. On the Contrary, PTR was found to be high in majority of the schools has a result of FPE. The scenario has put a lot of pressure on existing classroom facilities, toilets and the playing field in Kipkelion District. Furthermore, the study found adequate supply of teaching learning materials in all the public schools, which is attributed to the continued support accorded to the FPE programme by the Government and its development partners. Increases in resources may not be sufficient to improve school quality. It is clear that despite the provision, some of the resources' were found to be substantially underutilized implying less effort by teachers, this in

turn negates the Governments endeavour to ensure that all citizens are equipped with the fundamental knowledge and skills that will enable them to be full stakeholders in and beneficiaries of development. Education is one of the most important aspects of human resource development. Poor school performance not only results in the child having a low self esteem but also causes significant stress to parents. Gaps that exist in resource utilization that have been pointed by the study should be looked into by the education stakeholders so as to improve the quality and thus value of education.

### Policy implication

Based on the findings, the study recommends that the ministry of education should Streamline and accelerate the provision of Teacher Proficiency Courses to benefit and up-grade teachers who have been in service for more than three years, second Re-distribute teachers evenly within the District to balance the workload of teachers. Third Provide additional well equipped streams in existing schools and improve existing facilities to acceptable standards and reduce pressure on existing classrooms and to maximise on teacher utilization introduce the double shift system in public primary schools for effective resource utilization in Kenya public primary schools and global competitiveness

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