

Effect of the Provision of Teaching and Learning Materials through FPE on Academic Performance among the Public Primary Schools

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Abstract

The introduction of Free Primary Education (FPE) in January, 2003 in Kenya witnessed an increase of enrolment in public primary schools. This resulted to overcrowding in the existing classrooms as funds were not allocated on infrastructure to counter the demand raised. Due to the influx of learners in the classrooms, schools experienced shortage in the teaching and learning materials. However, inadequate teaching and learning materials in public primary schools are threatening to add another impediment to the Kenya's development efforts particularly in its effort to achieve the millennium development goals (MDGs) by 2015. According to the ICS general situation analysis conducted in Busia district in the second half of 2007, it revealed that the quality of basic education has been compromised by the effects of free primary education (FPE). Further, it has resulted to teacher-pupil ratio of 1:80 in most public primary schools and a high course textbook ratio of 1:8 in these schools. This has compromised the delivery of quality education within the district and as such a significant number of children leave public primary schools without gaining even basic reading and writing skills. Indeed there is widespread consensus that the provision of some teaching and learning materials like textbooks can substantially increase test scores. The purpose of this study was to determine the effect of the provision of teaching and learning materials through FPE on academic performance among the public primary schools in Busia district, Kenya. A descriptive survey research was adopted. the target population for the study included 1 District Education Officer (DEO), 1 Area Education Officer (AEO), 46 head teachers, 605 teachers and 32,066 pupils of standard 7 and 8.. The sample of the study included. The sample size was determined by a 30% of the target population. Data collected was analyzed using a blend of Descriptive statistics and inferential.

Key Words: Instructional Materials, Free Primary Education, KCPE Performance, Teacher Effectiveness

INTRODUCTION

The introduction of Free Primary Education (FPE) in January, 2003 in Kenya witnessed an increase of enrolment in public primary schools. This resulted to overcrowding in the existing classrooms as funds were not allocated on infrastructure to counter the demand raised. According to Oketch (2008), FPE initiative had a substantial effect on enrolment at the national level. For instance, the total intake to class 1 rose from 0.969million in 2002 to 1.312 million in 2003, an increase of 35%. Additionally, the 8 year cycle saw the total enrolment rising by 17%, from 6.13million in 2002 to 7.16million in 2003. Further,

the enrolment increased by 39% in 2008, incorporating an additional 2.3 million Kenyans into the school system in the country.

Chunck (2009) also denotes that as a result of the FPE programme, the primary school completion rate increased from 62.8% in 2002 to 81.0% in 2007. The Ministry of Education in its annual report of 2011 postulated that the gross enrolment rate for early childhood care (ECCE) stood at 60.9% in 2010, a marked improvement from 57.9% in 2005. In public primary schools throughout the country, the net enrolment rose from 82.9% in 2005 to 91.4% in 2010. Ironically, this influx has not been met with commensurate increase in key teaching and learning materials such as textbooks, exercise books and even pens. However, inadequate teaching and learning materials in public primary schools are threatening to add another impediment to the Kenya's development efforts particularly in its effort to achieve the millennium development goals (MDGs) by 2015. On the other hand, to create a universal literate society through FPEs programmes as espoused in the vision 2030 is one pillar that is bound to be in jeopardy if the current trend in the provision of certain instructional materials is not checked.

Primary education has been referred to as the little mustard seed sown, watered and nurtured in discordant socio-economic milieu into gigantic national education systems (Odigbo, 2001; Okeke, 1997). It is indeed the foundation of the entire education system the world over. Nevertheless, a major limitation in Kenya is in the schools' lack of and low commitment to utilize the inputs to improve the academic performance of pupils in national examinations. According to the ICS report of 2010, factors behind low learner performance and completion rate in Busia district include inadequate teaching and learning materials and equipment. This pressure is then transferred onto the classroom teacher who is forced to work beyond the call of duty with such limited teaching and learning materials. This has gone a long way in affecting the teacher's effectiveness, since the teacher has also to deal with large groups of pupils which denies them the opportunity to personal attention.

According to the ICS general situation analysis conducted in Busia district in the second half of 2007, it revealed that the quality of basic education has been compromised by the effects of free primary education (FPE). Further, it has resulted to teacher-pupil ratio of 1:80 in most public primary schools and a high course textbook ratio of 1:8 in these schools. This has compromised the delivery of quality education within the district and as such a significant number of children leave public primary schools without gaining even basic reading and writing skills. Indeed there is widespread consensus that the provision of some teaching and learning materials like textbooks can substantially increase test scores (Glenwe, Kremer & Moulin, 1998). However, many questions have been asked about the effect of supplied teaching and learning materials through FPE on academic performance among public primary schools. That despite an increase in the number of pupils enrolled in public primary schools through the FPE programme little has been done to analyze the effect of FPEs teaching and learning materials on academic performance in public primary schools, Kenya. The purpose of this study was to determine the effect of the provision of teaching and learning materials through FPE on academic performance among the public primary schools in Busia district, Kenya

Statement of the Problem

Primary education is the first and compulsory, formal and organized basic education of the child. It is for this reason that UNESCO (1961) organized a conference of African Ministers of Education in Addis Ababa on the development of education targeting at achieving free, compulsory six years of primary education.

Nevertheless, when the NARC government declared FPE in January, 2003 the intention was to remove all the levies that had previously prevented children especially the vulnerable groups from accessing education. In the year 2003 the Kenyan Government implemented Free Primary Education in all the Public Primary Schools in the whole republic. This was in response to numerous concerns like the desire to combat ignorance, disease and poverty and also the belief that every Kenyan Child has the right to access basic welfare provision like basic education. The Free Primary Education Policy led to increased access which in turn has led to a challenge of quality learning in schools. In addition, the government also remains committed to the support of FPE through the provision of teaching and learning materials, teachers, maintenance and Quality Assurance services in pursuant of the Economic Recovery and Wealth Creation Strategy (Presidential Press Statement, 2004).

Indeed there is widespread consensus that the provision of some teaching and learning materials like textbooks can substantially increase test scores (Glenwe, Kremer & Moulin, 1998). However, many questions have been asked about the effect of supplied teaching and learning materials through FPE on academic performance among public primary schools. That despite an increase in the number of pupils enrolled in public primary schools through the FPE programme little has been done to analyze the effect of FPEs teaching and learning materials on academic performance in public primary schools, Kenya. The purpose of this study was to determine the effect of the provision of teaching and learning materials through FPE on academic performance among the public primary schools in Busia district, Kenya.

Specifically, the study sought to: Investigate the relationship between the teaching and learning materials provided through FPE and academic performance of pupils in public primary schools in Busia district, and to Determine the effect of the teaching and learning materials provided through FPE on the teachers effectiveness in the public primary schools in Busia district the study was conceptualized as the framework in Figure 1.

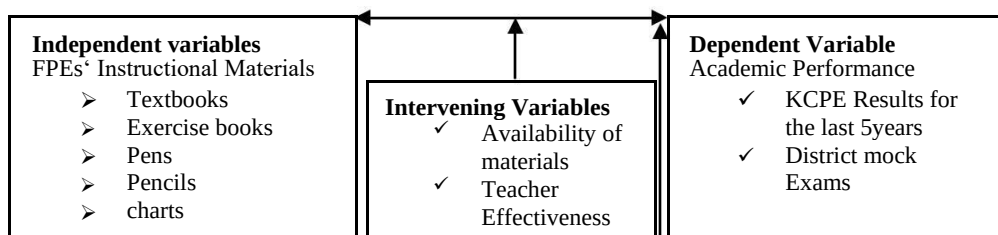


Fig.1. Conceptual framework: relationship between FPEs' instructional materials and performance

Relationship between FPEs' Instructional Materials and the Learning Process

Ambuko (2008) concurs with Briggs (1977) who postulates that the use of teaching and learning material involves the learners vicariously but meaningfully in the learning process. Ambuko further notes that selected instructional material when used properly motivates the learner.

A study carried out by Mwendwa (2011) to investigate the impact of Free Primary Education in public primary schools since its inception in 2003, indicated that FPE had an impact on performance, however its impact was influenced by various factors which included teacher pupil ratio, administrative practices, teacher professionalism and availability of physical facilities. Availability of physical facilities and teacher professionalism all influenced academic performance. The main challenges the administration faced were high pupil enrolment, inadequate teachers and teaching and learning materials. The study also found that schools had physical facilities but inadequate. Conclusions of the study were that academic performance in public schools was declining, and that poor class conditions impacted negatively on performance.

Ochanda (2010) carried out a study on the use of scientific calculators in the teaching and learning of mathematics in secondary school mathematics. The calculators in this case are selected teaching and learning materials a requirement in the 8-4-4, intended to address the issue of numeracy (quantitative literacy). Ochanda found out that the use of teaching and learning media motivates learners and that their availability was important to the teaching and learning process, since it positively impacted on performance of learners in secondary school mathematics. This study is relevant to the current study since it looked at the opportunities (benefits) in the use of the calculators in the teaching and learning of mathematics in secondary school.

The mentioned studies used questionnaires, interview schedule and an observation checklist in each case to collect primary data from the sampled respondents. The current study sought to find out the relationship between FPEs' selected teaching and learning materials and the learning process in primary schools in Busia County. The study used questionnaire and checklist in the collection of both primary and secondary data.

Effect of FPEs' Instructional Materials on the Teachers' Effectiveness

Constructivist learning theories point out that learning can only be effective if the learner is allowed to construct knowledge from the environment in which the learner is placed. This can be achieved when the learner manipulates learning resources in the learning process. This is made possible when the teacher acts as a facilitator and not source of knowledge in the learning process.

Petty(2004) observes that constructivist principles include using strategies that require all students to make a construct, making learning fun, and that learning should be by doing. This is captured under the scheme for providing the learners with selected teaching and learning materials to make the objectives of the program achievable.

Ellington *et al.* (1993) notes that, the principle role of teaching and learning materials is to help improve the overall efficiency of the teaching/learning process. Petty (2004) too observes that instructional materials also caters for the needs of the learner. This is made possible when the learner embarks on a mission to learn a specific skill or ability. However, it's generally noted that use of the selected teaching and learning materials has a positive impact on the learners' ability to acquire and construct new knowledge. Studies carried out on the benefits of teaching and learning materials also show that there is correlation between use of teaching and learning and positive learning.

According cognitive learning theories, the educational experiences involving the learner actively participating in concrete examples are retained longer than abstract experiences. Teaching and learning materials add elements of reality by providing concrete examples to learning.

According to Jimoh (April, 2009), many authors have written on the use of Teaching and Learning materials both in teaching social studies and other related subjects in order to enhance teaching for desired social and behavioural change. These authors include McLuhan (1964), Alaka (1978), Kochhar (1986), Okafor (1988), Mkpia (1989), UNDP (1998), Heeks (1999), World Bank (1999), Aguokogbuo (2000), Koert (2000), Greenwood (2001), Bozimo (2002) Nwanna-Nzewunwa (2003) and Adekeye (2008). More specifically, it was emphasized in the works of these authors that the use of teaching and learning materials is important catalysts of social re-engineering and change.

It is obvious that in subjects such as social studies', Teaching and Learning cannot be well accomplished without the use of instructional materials. Projected and non-projected; visual, auditory, audio-visual electronic materials are important landmarks in knowledge transfer. With them both teaching and learning become very pleasant.

In Kenya today, under the FPE program various disciplines in the curriculum have several selected materials linked to their teaching and learning. Though their immediate impact on the quality of teacher effectiveness is not known, this current study is aimed at evaluating to what extent Free Primary Education has affected quality of learning in selected public primary schools in Busia district. This study sought to establish how the teaching and learning materials, number of teachers, learning physical infrastructure, and government/donor relationship has affected academic performance and the teaching learning process.

MATERIALS AND METHODS

A descriptive survey research was adopted. The study was carried out in public primary schools in Busia district, Busia County, western Kenya which borders lake Victoria to the south west, the republic of Uganda to the west, north and north eastern. It has a population of 943,946 people with a population density of 439 people per square kilometer. The county has an age distribution of 0-14 years at 47.9%, 15-64 years at 48.4% and 65+ years at 3.7%. It has a high poverty level of approximately 66% with an age dependency ration of 100:107 (ROK, 2003). As at 2007 the former Busia district (now county) had only 420 public primary schools with a teacher to pupil ratio of 1:64.

This could be attributed to the increased enrolment as a result of the introduction of FPE. The figures translate down to Busia district itself with a small margin of difference. The district is divided into two divisions of Matayos and Township, bordering Uganda to the west, Teso south district to the north, Namable to the East and Samia district to the south. It covers an area of approximately 1695 square kilometers and provides an entry point to Uganda through Kenya.

The district has 46 public primary schools only and very few private primary schools. The area is largely occupied by the Luhya ethnic group with its capital headquarters at Busia town. The choice of Busia district is relevant to the study because it has a high number of children orphaned by the HIV/AIDS whose education before the introduction of FPE was a major challenge. As a result, many of these children were left exposed to smuggling of trade across the Kenya Uganda boarder after the death of their parents. This also raises security concerns for the very individual children which affect their school going negatively.

Study Population

Busia district comprises of 46 Public primary schools with an estimated primary pupils' population of 32,066. According to the district education office, Busia district, 15, 386 of this population are male while 16,680 are female. The 46 public primary schools formed the target population for this study since they are the ones affected more directly by the FPEs programmes. The sample of the study was drawn from the public primary schools in both the administrative units/divisions in the district. The respondents included District Education Officer (DEO), Area Education Officers (AEOs), head teachers, teachers and pupils of standard 7 and 8. This is one group in school that can be able to communicate more effectively. Accordingly, proportional allocation will be used to obtain 30% from each category and administrative units. The distribution of the population in each category and administrative units in Busia district is as shown in the Table 1

Table 1. The study population distribution per division

Administrative unit	No of primary schools	Total no. pupils	No teachers
Matayos	22	16,258	269
Township	23	17,060	396
Total number	46	32,066	605

Source: District Education Office Busia district January 2013 returns

Sample Size and Sampling Procedure

The sample size was determined by a 30% of all the 46 public primary schools. Also, Proportional allocation of 30% was adopted to obtain the study respondents from each administrative unit. Mugenda and Mugenda (1999) denote that 30% per group of a population is adequate for descriptive studies. Purposive sampling, stratified and simple random sampling techniques were adopted. Purposive sampling was employed to obtain the data from DEO of Busia district, and also AEOs as respondents in the study. Stratified random sampling shall be used to achieve desired representation from the remaining sub groups, which is the pupils, teachers, and head teachers (Mugenda and

Mugenda 1999). Simple random sampling was then be used to select the respondents from each stratum with the largest number to be obtained from the pupils' category.

Research Instruments

This research utilized questionnaires with a representative array of the education stakeholders within the district under study. The instruments were designed to elicit information that would assist the researcher to answer the research questions. The constructs of the questionnaires and the checklist operationalized both FPEs' instructional materials and academic performance among public primary schools through an extensive review of the relevant literature.

Data Analysis

Data to be collected was analyzed according to the research objectives. Raw data was coded into the SPSS (Statistical Package for Social Sciences) which was then used to analyze by the same data. A blend of Descriptive statistics and inferential statistics were used to describe the effect of FPEs instructional materials on academic performance by use of means, charts, and percentages. Inferential statistical methods such as the chi-square at 0.5 confidence level was also applied in establishing the relationship between FPEs instructional materials and the learning process among the pupils in public primary schools in Busia district, Kenya.

RESULTS AND DISCUSSIONS

Relationship between FPEs' Instructional Materials and Performance

The provision of instructional materials under FPE is a government policy. The sought to investigate the relationship between the teaching and learning materials provided through FPE and academic performance of pupils in public primary schools in Busia district. To achieve this objective the secondary data was collected on pupils' performance in K.C.P.E results of the last four years. The mean scores for ten schools were tabulated in SPSS and an aggregate mean score computed. The means are displayed in the Table 2.

Table 2. Means for schools in Busia District

No of schools	Mean Score 2010	Mean Score 2011	Mean Score 2012	Mean Score 2013	Aggregate mean score
1	288.82	318.24	301.30	307.88	296.00
	302.73	316.81	323.77	334.47	314.61
2	286.26	304.55	278.55	273.14	280.21
	282.54	294.53	297.92	299.81	292.53
3	262.48	284.66	248.65	258.39	256.12
	271.49	283.73	267.89	275.72	268.45
4	283.52	274.41	272.90	266.09	269.56
	247.96	254.10	288.08	267.26	263.58
5	269.41	253.14	258.53	264.86	256.63
	267.83	250.14	237.21	275.06	251.63

The performance was rated as Very good, good, fair, poor and very poor. The aggregate means were therefore grouped into five groups based on performance. The group variables were coded from 1 to 5 for each group. The coding appeared as in Table 3.

Table 3. Mean scores

Group	Mean score
1	296.00
1	314.61
1	280.21
2	292.53
2	256.12
3	268.45
4	269.56
5	263.58
5	256.63
5	251.63

Data on this objective was analyzed under the hypothesis, _there is no relation between the teaching and learning materials provided through FPE and academic performance in public primary school in Busia District Kenya. The result above suggests a relationship between the teaching and learning materials provided through FPE and academic performance in public primary school. This is because there are schools with a higher mean score than others.

The data was analyzed using ANOVA to determine if provision of learning and teaching material provided through FPE has an effect on academic performance in public primary school. The results of ANOVA are summarized in Table 4.

Table 4. Summary of ANOVA based on provision of FPE

Source of difference	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2459.447	4	614.862	2.315	.019
Within Groups	1327.884	5	265.577		
Total	3787.332	9			

The results from Table 3 above indicate that there is a significant difference in the mean scores of schools with very good, good, fair, poor and very poor performance ($F=2.315$, $\alpha < .05$; $df\ 4,5$) the study therefore established that provision of instructional materials affects performance in public primary schools in Busia. The null hypothesis is therefore rejected in favor of the alternate hypothesis that there is a relationship between the teaching and learning materials provided through FPE and academic performance in public primary schools in Busia District Kenya. This means that the schools that gets adequate learning and teaching materials and fully utilize them record better performance than those that do not fully utilize them.

Note that with $\alpha=.05$ the difference in the mean scores of schools performance based on provision of instructional materials in public primary schools was statistically significant, $F(4, 5) = 2.315$, $p = 0.019$.

Effect of FPEs' Instructional Materials on the Teachers' Effectiveness

The study sought to establish the effect of FPEs Instructional material and teacher's effectiveness. Six pointers to teacher effectiveness were used by the researcher to find out how the teacher manages the learning process and the extent to which the teacher is evaluated as being effective. The feedback from the teacher were put against a four point Likert scale, with Strongly Agree (SA) having 4 points, Agree (A)-3 Disagree (D)-2 and Strongly Disagree (SD) - 1 point. The results are shown in Table 5.

Table 5. Effect of Instructional material on the teacher effectiveness

Effect of Instructional material on the teacher effectiveness	SA	A	D	SD
Content delivery	26	10	10	4
Time management	36	10	4	0
Concept building	41	5	4	0
Motivating The Learner	43	3	4	0
Sustaining learners' Interest	44	6	0	0
Class control	23	8	16	3

Mean attitudes were calculated and the result placed on the scale as shown below:

Content delivery = 158

Mean attitude on content delivery = 3.16

Time management = 182

Mean attitude on time management = 3.64

Concept building = 187

Total measure on attitude = 187

Mean attitude on Concept building = 3.74

Motivating the Learner

Total measure = 189

Mean attitude on Motivating the Learner = 3.78

Sustaining learners' Interest

Total measure on attitude = 194

Mean attitude on sustaining learners' Interest = 3.88

Class control

Total measure = 151

Mean attitude on Class control = 3.02

The general feeling of the teachers on this objective was determined from the grand mean of the attitude measured on the 4- point Likert scale as calculated below:

Total mean attitude on the 6 pointers to effectiveness = $(3.16 + 3.64 + 3.74 + 3.78 + 3.88) = 21.22$

Total mean attitude on teacher effectiveness = 3.54

From the value of the total mean attitude on teacher effectiveness, a mean of 3.54 put on the 4- point Likert scale translates to an attitude of SA, where a majority feel that Instructional materials make the teacher more effective in their teaching process. This may be a pointer on improved performance.

From the findings as per this objective, it is observed that teachers become more effective in their teaching when they utilize teaching and learning materials. Since the government policy on provision of learning materials was effected in the year 2003, teachers' attitude on content delivery, time management, concept building, motivation of learner and sustaining learners' interest improved. The improved attitude translates to improved effectiveness on the part of the teacher. This is concurred with Ochanda (2010) in his study on Availability and Use of scientific Calculators in the teaching and learning mathematics in secondary schools in Emuhaya District, Kenya. Ochanda further notes that teaching and learning materials such as the scientific calculator involves the learners vicariously but meaningfully in the learning process as compared to when the learner is not provided with the learning materials during learning. Ochanda adds that teaching and learning materials promote participatory and collaborative learning where the role of the teacher is reduced to a facilitator rather than a provider of knowledge. This is in line with a constructivists' learning theory which suggests that a learner be placed in an environment where they are able to construct knowledge on the own.

CONCLUSIONS AND RECOMMENDATION

Relationship between FPEs' Instructional Materials and Performance

There is a relationship between the teaching and learning materials provided through FPE and academic performance in public primary schools in Busia District Kenya. This means that the schools that gets adequate learning and teaching materials and fully utilize them record better performance than those that do not fully utilize them.

Effect of FPEs' Instructional Materials on the Teachers' Effectiveness

A majority feel that Instructional materials make the teacher more effective in their teaching process. This may be a pointer on improved performance.

Implications for Policy and Practice

Following the findings of the study, the following are the recommendations from the findings:

- i. Since there is a positive trend in the provision of instructional materials under FPE, the study recommends that other types of instructional materials be included in the list of procurement which will cater for ICT integration in the teaching and learning process
- ii. More modern teaching and learning materials be provided that cater for individual differences on the part of the learner and hence cater for learners with special needs

- iii. Computer aided learning (CAI) materials be provided to keep the learner abreast with the vision 2030, where ICT integration in all spheres of life is the main theme

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