

**EFFECT OF FREE PRIMARY EDUCATION POLICY ON
TEACHER ADEQUACY, TEACHER EFFECTIVENESS AND
COPING STRATEGIES IN PUBLIC PRIMARY SCHOOLS
IN KAKAMEGA SOUTH DISTRICT, KAKAMEGA
COUNTY**

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DECLARATION

This is my original work and has not been presented for any other study programmes in any other university.

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To my late parents, Nehemiah Mulinya Shivachi and Rebah Imbosa Mulinya
for their love and good upbringing that enabled me achieve my goals.

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ABSTRACT

Free Primary Education (FPE) was introduced in Kenya in January 2003. Since its inception, it has posed a number of challenges to the government, school managers and other education stakeholders. One of the major challenges is that FPE policy has led to an influx of pupils into various classes at primary level of schooling against a stagnant teacher population. This study was intended to investigate the effect of FPE policy on teacher adequacy, teacher effectiveness, and how the government, school managers and other stakeholders are coping with the issue of high enrolment rates. Kakamega South District was the locale for this study. This was because of its rural setting since placement of teachers has been favouring urban schools. Two, the district was mentioned amongst those with the high poverty index in the country. The research utilized descriptive survey design. Out of a population of 68 public primary schools in Kakamega South District, a sample of 23 schools was selected using systematic random sampling procedures. A sample was drawn from fixed intervals on the list of schools arranged using school codes in an ascending order, after determining the sampling constant 'K'. A pilot study was conducted in six (6) primary schools prior to the administration of the research instrument. Validity of the items in the questionnaire was ensured by seeking the counsel of the researcher's supervisors and other research experts; while the reliability was established by use of Cronbach's alpha (α). A questionnaire was then administered to primary school heads. An observation schedule for the sampled schools was administered too. A structured interview schedule was administered to the District Education Officer. A Statistical Package for Social Sciences (SPSS) programme facilitated the organization of the collected data before being presented using ratios, tables, percentages and figures. Collected data was then analyzed using descriptive statistics. The research findings indicated that public primary schools in Kakamega South District experienced an increase in pupil enrolment against a fluctuating teaching population after the introduction of FPE. This had a negative effect on teacher adequacy and effectiveness. The average Pupil- Teacher Ratio (PTR) rose from 32:1 in 1999 to 45:1 in 2008 against the recommended 35:1. This compromised the performance index in the national examinations (KCPE). Based on research findings; it was recommended that the government of Kenya employs more trained teachers so that there is optimal growth in both the number of teachers and that of learners. Moreover, the government should ensure equitable distribution of teachers across the board and seek to improve on schools' physical facilities in order to sustain FPE programme for the enhancement of quality education in the country.

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LIST OF ABBREVIATIONS AND ACRONYMS

ATS	Approved Teacher Status
DEO	District Education Officer
EFA	Education for All
FPE	Free Primary Education
GER	Gross Enrolment Rate
GOK	Government of Kenya
HR	Human Resource
IMF	International Monetary Fund
KANU	Kenya African National Union
KAU	Kenya African Union
KCPE	Kenya Certificate of Primary Education
KCSE	Kenya Certificate of Secondary Education
KIPPRA	Kenya Institute for Public Policy Research and Analysis
MOEST	Ministry of Education Science and Technology
NARC	National Rainbow Coalition
NER	Net Enrolment Rate
PI	Primary Teacher I
PDE	Provincial Director of Education
PPS	Public Primary Schools
PTR	Pupil- Teacher Ratio
SGAT	Senior Graduate Approved Teacher
SID	Society for International Development
SMC	School Management Committee
SPSS	Statistical Package for Social Sciences

TSC	Teachers Service Commission
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Education Scientific and Cultural Organization
UPE	Universal Primary Education
WB	World Bank

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Free Primary Education (FPE) was introduced in Kenya in January 2003 by the NARC government, which was elected in December 2002. This was the second attempt to introduce the policy in the post-colonial Kenya, after the first attempt back in 1970s failed to achieve much. The renewed efforts were an intentional strategy by the government to comply with UN recommendation on the children's right for education, which was reinforced by the recommendations of the UNESCO Addis Ababa conference of 1961. Section 7(2) of the Children's Act 2001 reinforces this point by asserting that, "Every child shall be entitled to free basic education which shall be compulsory in accordance with article 28 of the United Nations' convention on the rights of the child." It was in view of this clause and the realization of the fact that education contributes directly to the growth of the national income and improvement of human welfare that the new government of Kenya initiated the FPE policy (Psacharopoulos & Woodhall, 1985). Furthermore, this was the government's bid to fulfill its pledge of offering FPE in its campaign manifesto (UNESCO, 2005).

Like many other developing countries, it has not been an easy road for Kenya in its bid to implement the FPE policy, let alone the universal education (Bogonko, 1992). Some of the hindrances include an outburst in enrolments visa-avis a stagnant teacher supply and lack of finances to expand the physical

facilities. The problem of teacher shortage especially, has been there since the missionary era when formal education was introduced (Eshiwani, 1993). Eshiwani further asserts that at independence, Kenya inherited an education system with an under developed teaching profession. It was lacking in both quality and quantity. In 1971, when President Kenyatta abrogated tuition fees for the economically marginal districts of Marsabit, Isiolo, Samburu Turkana, Garissa, West Pokot, Mandera, Wajir, Tana-River and Lamu the enrolment in Samburu went up by 31 %; Wajir 72 %; Isiolo 23%; Marsabit 29% and Tana-River 26% (Bogonko, 1992).

An almost similar trend was witnessed when the GOK re-introduced the FPE policy in the country in January 2003. According to the report by the Society for International Development (SID), 2004), the country's total enrolment in primary schools currently stands at 7.5 million pupils up from 5.9 million in the year 2002, just before the inception of FPE policy .Republic of Kenya (2006) puts the current enrolment at 7.6 million. This implies an increase of over 29 %. Studies by GOK from nine sample districts show that there was a tremendous increase in enrolment in public primary schools immediately after the introduction of FPE in 2003 from 768,296 in 2002 to 916,355 in 2003, an increase of 19.3 per cent (UNESCO, 2005). Table 1.1 overleaf illustrates this.

Table 1.1: Distribution Enrolment in Sample Districts

District	Overall District Data		
	2002	2003	2004
Kajiado	58,334	66,648	73,981
Nairobi	144,929	205,362	203,061
Mwingi	85,880	97,069	107,261
Gucha	102,145	126,545	122,197
Kisumu	46,511	50,543	55,984
Kwale	88,077	109,456	131,055
Taita Taveta	59,168	62,827	66,855
Embu	56,175	61,814	62,337
Kericho	125,075	133,088	139,183
Total	768,296	916,355	963,918

Source: Republic of Kenya (2005:19). *Challenges of Implementing Free Primary Education in Kenya*. Nairobi: Government Printers

For Kenya to maintain high academic standards in public schools in such a scenario we expect an almost similar increase in the supply of teachers. Unfortunately, this has not been the case. By the time FPE was being introduced, teacher recruitment had been frozen in 1998 by the government due to external pressure from the donor agencies-World Bank (WB) and International Monetary Fund (IMF) (UNESCO, 2005). This forced Government of Kenya (GOK) to maintain a teaching force of 230,000 teachers in both primary and secondary schools. Out of this, there are 180,000 teachers serving in 18,000 primary schools in the whole republic (Republic of Kenya, 2005). Table 1.2 overleaf shows a very high Pupil-Teacher Ratio (PTR) in

sample districts in the year 2004, as an indicator of stagnation in the number of teachers visa-vis a rapidly growing enrolment in the year 2004.

Table 1.2: Number of Teachers, Pupil Enrolment and PTR in Sample Districts in 2004

District	Number of Teachers	Pupil Enrolment	Pupil Teacher Ratio
Kajiado	199	11,715	1:58
Nairobi	427	18,071	1:42
Mwingi	187	6,966	1:38
Gucha	197	6,732	1:38
Kisumu	183	8,113	1:44
Kwale	288	12,220	1:42
Taita Taveta	192	7,962	1:41
Embu	298	8,913	1:29
Kericho	180	7,664	1:42
Total	2,146	88,356	1:41

Source: Republic of Kenya (2005:24). *Challenges of Implementing Free Primary Education in Kenya*. Nairobi: Government Printers

Table 1.2 above serves to illustrate how FPE policy has affected teacher adequacy in selected districts in Kenya. Teacher adequacy is normally measured in terms of a ratio, which according to the Ministry of Education Science and Technology (MOEST) should be 35:1 (Mulama, 2003). With the total enrolment at around 7.6 million pupils in our public primary schools, and the teaching force at around 180,000, the current PTR stands at 43:1, which is above the recommended 35:1 and it is likely to affect teacher effectiveness.

This study was meant to focus on rural schools in so far as the PTR and FPE is concerned, and attempted to find out whether there are efforts being made by the school managers and other stakeholders to balance the two variables; FPE and the number of teachers, for effective teaching-learning process, consequently suggesting possible solutions.

1.2 Statement of the Problem

The introduction of FPE in Kenya in January 2003 brought about two million pupils into the primary school system. This increased the gross enrolment from 5.9 million to 7.6 million pupils (SID, 2004). This was an increase of over 29%. On the other hand, teacher population in the whole country has stuck around 180,000 (Republic of Kenya, 2002). This implies a very high PTR of 43:1, considering that the recommended pupil-teacher ratio is 35:1 (Mulama, 2003). However, despite the rationale for attaining universal FPE, some districts in Kenya still have a low teacher population, a phenomenon that is likely to adversely affect the effectiveness of the teaching – learning process. As a result, many pupils are likely to fail to benefit from primary school education. This study was to investigate whether there is teacher adequacy and effectiveness in Kakamega South District, before and after the introduction of FPE programme. The study was further to assess the strategies being employed by school managers in coping with the problem of balancing the number of teachers and that of pupils for effective teaching-learning process.

1.3 Purpose of the Study

The purpose of this study was to investigate the effect of FPE policy on the adequacy and effectiveness of teachers in public primary schools in Kakamega South District. It was to find out if there is any deviation from the recommended PTR of 35:1 as a result of this policy. If this was to be found true, to establish what action is being taken to improve the situation.

1.4 Objectives of the Study

Objectives of the study were:

- i. To establish the trend in pupil enrolment four years before and six years after the introduction of Free Primary Education policy (1999-2008) in Kakamega South District.
- ii. To determine the number of teachers in public primary schools four years before and six years after the introduction of Free Primary Education policy (1999-2008) in Kakamega South District.
- iii. To determine teacher effectiveness four years before and six years after the introduction of Free Primary Education (1999-2008) in Kakamega South District.
- iv. To find out the strategies employed by the school managers in attempt to achieve teacher adequacy and effectiveness in public primary schools after the introduction of Free Primary Education policy in Kakamega South District.

1.5 Research Questions

The study was guided by the following research questions:

1. What were the enrolment trends in public primary schools four years before and six years after the introduction of FPE (1999-2008) in Kakamega South District?
2. What was the population of teachers in public primary schools four years before and six years after the introduction of FPE (1999-2008) in Kakamega South District?
3. How effective were teachers in their teaching work four years before and six years after the introduction of FPE (1999-2008) in Kakamega South District?
4. What were the strategies being employed by school managers to achieve teacher adequacy and teacher effectiveness in public primary schools six years after the introduction of FPE in Kakamega South District ?

1.6 Significance of the Study

The findings of the proposed study will assist school managers in planning the teacher requirement as the FPE policy takes root in Kenya. Besides, they may assist school managers and Ministry of Education to realize the demand on the ground for human resource, in order to plan and act in making FPE policy a success. The study is also relevant for policy makers who are concerned with determining how much eliminating of school fees can help in achieving UPE. Lastly, the findings may stimulate further research, especially on how PTR is

likely to affect the overall teacher performance in public primary schools, apart from academic performance.

1.7 Assumptions of the Study

The study was based on the following assumptions:

- 1) The Pupil-Teacher Ratios that go beyond 35:1 reduces teachers' effectiveness.
- 2) The number of lessons that go beyond 30 per teacher per week renders a teacher ineffective.
- 3) Teacher effectiveness is mainly determined by PTR and the number of lessons per teacher per week.
- 4) All respondents will be cooperative and provide reliable responses.

1.8 Limitations of the Study

- 1) The study was limited to the time span of ten (10) years only since accuracy and availability of records tend to diminish with time.
- 2) Due to frequent transfer of teachers and head teachers, there is a limitation on the verification of some data obtained.
- 3) Another limitation was that the findings of this study might not be generalized as applicable to the whole country, since one district is not a representative sample, but might be useful to any one interested in the management of primary schools in Kenya.

1.9 Delimitations of the Study

The study confined itself to the school head teachers, pupils in public primary schools and the DEO. Classroom teachers and other members of School Management Committees were not included though they would have had interesting inputs.

Second, private schools were excluded, as they do not enjoy direct government support in the provision of education.

Third, there are several other factors affecting the effectiveness of teaching – learning process but this study only focussed on the Pupil-Teacher Ratio factor.

1.10 Theoretical Framework

This study was meant to assess the success of the FPE programme in relation to teacher adequacy, which is determined through PTR and teacher effectiveness. The study's theoretical framework was based on the law of demand and supply, which was considered relevant.

Theory of Demand and Supply

The theoretical framework upon which the study was based on was advanced by Hicks (1986). Hicks presented the indifference curve approach to the theory of demand and supply and gave logic ordering to the demand theory in 1986.

Law of Demand

The law of demand states that, as the price of a good or service fall, a larger quantity will be bought, and as the price of a good or service rises, a smaller

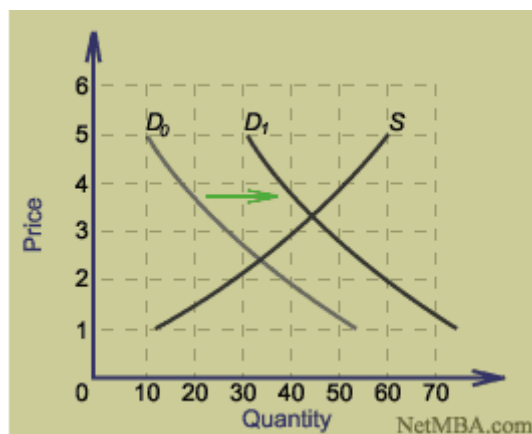
quantity will be bought. Demand for education is always likely to be affected by the costs involved, amount of school desired and the prospects of earning higher income (Todaro, 1994). With the implementation of FPE programme in Kenya, it was therefore likely that the demand for education will rise, as a response to the relatively lower cost of schooling.

Law of Supply

This law states that at higher prices, a larger quantity of a good or service will be supplied than at lower price, and at lower prices, a smaller quantity will be supplied than at higher prices. In this study, supply means the quantity of school places at primary school level.

To understand how the law of demand and supply functions when there is a shift in demand; consider the case in which there is a shift in demand.

Figure 1.1 Shifts in Demand



Source: *Marshall, A. (1920:11) Principles of Economics, 8th ed. London: Oxford University Press*

In this example, the positive shift in demand results in new supply-demand equilibrium point that is higher in both quantity and price (Marshall, 1920). Introduction of FPE led to a positive shift in the demand for basic education. This means, the government should provide more places or put up more schools. It also means hiring more qualified teachers. Unfortunately for most nations, the public supply of these places has been fixed by the level of government educational expenditures (Todaro, 1994).

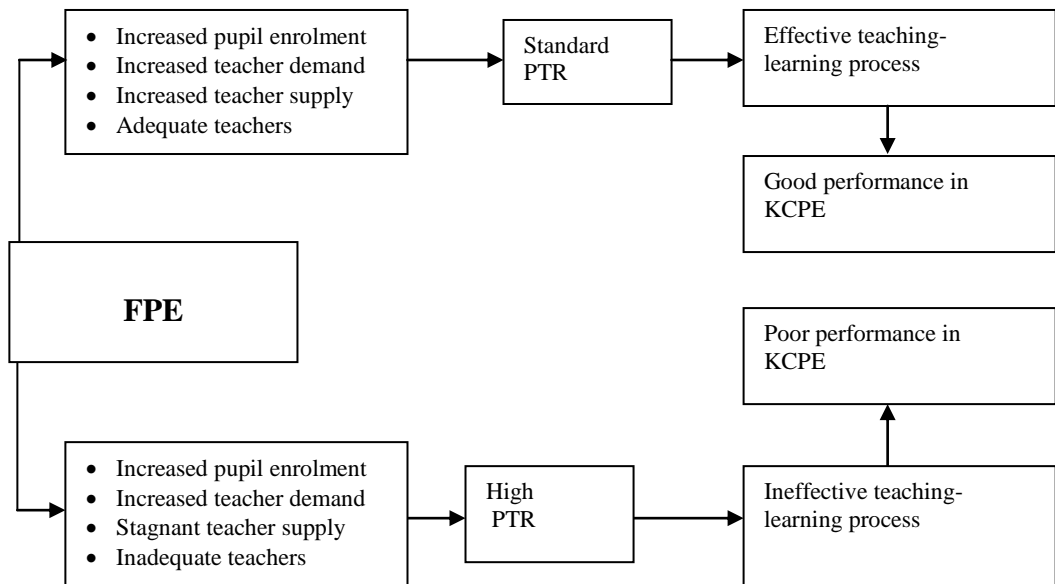
The highest percentages of government expenditure in education, about 70% goes to payment of teachers' salaries (Republic of Kenya, 2005). This is likely to impact negatively on the population of teachers and by extension the PTR, since the government may not be able to sustain a higher number of teaching staff in schools, which equally requires other resources. In this case then, the sufficient supply of education to a big number of enrolled learners is likely to be hampered. This is because demand and supply conditions always affect the success of any new product on the market (Hyman, 1989).

1.11 Conceptual Framework

The theory of demand and supply implies that FPE will lead to increased pupil enrolment and increased teacher demand. In case there will be increased teacher supply proportional to the pupil enrolment; there shall be teacher adequacy, standard PTR and therefore effective teaching- learning process.

On the contrary, if there shall be stagnant teacher supply, it will lead to teacher inadequacy, high PTR and thus ineffective teaching- learning process. These arguments are illustrated in Figure 1.2 below.

Figure 1.2: Conceptual Framework on the Relationship between PTR and Teaching – Learning Effectiveness



Source: *Researcher's Computation*

1.12 Definition of Operational Terms

Coping Strategies: Refers to ways and means of maintaining the desired PTR and/ or improving it for better performance of pupils in academics.

Free Primary Education: Refers to a kind of education where parents do not pay directly for their children's education in public primary schools. The government caters for the educational needs of the learners using tax-payers money and/ donor funds.

Gross Enrolment: The total number of children admitted in schools regardless of their age.

School Managers: This is used to refer to all members of the School Management Committees. Headteachers are included.

Teachers: The term is used to refer to government employed and professionally qualified personnel in terms of training, to handle learners.

Teacher Adequacy: It is the number of teachers that can conveniently handle a given number of pupils. It is measured in terms of a ratio. In this study, a ratio of 35: 1 will be regarded as adequate.

Teacher Effectiveness: It is used to refer to the ability of a teacher to produce desirable results, thus, a class mean score of above average in the national examinations. Teacher effectiveness will be taken to be mainly determined by PTR and the number of lessons per teacher per week.

1.13 Summary

This chapter looked at the Background of the intended Research Study, the Statement of the Problem, the Purpose of the Study, its Objectives and the Research Questions. It also gave an insight of the Assumptions, Limitations, Delimitations, Theoretical Framework as well as Conceptual Framework of the

Study. It again attempted to show the Significance of the Study and defined Operational Terms used in this study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviewed related literature on FPE implementation and its effect on the number of teachers and PTR. The chapter also reviewed the teacher demand and supply, and how to balance the variables for effective teaching-learning process.

2.2 Free Education

Free education refers to the kind of education whereby the learners' educational needs are taken care of by the state. One of the most important phenomena in the African history since colonial era has been the growth of demand for education. This is because it has been realized that education plays a key role in human development through the process of empowering people to improve their well being and make them participate actively in the nation building (Republic of Kenya, 2002).

According to Schultz (1961) and Denison (1962) as cited by Psacharopoulos and Woodhall (1985), education contributes directly to the growth of national income by improving the skills and productive capacities of the labour force. Republic of Kenya (2001) asserts that lack of education is known to reduce people's ability to take advantage of the opportunities around them and has often been associated with increasing poverty.

In view of this, governments world over are struggling to ensure education for their citizens. In East Africa, all governments are committed to achieving Universal Primary Education (UPE) in the shortest time possible, since literacy is considered both a basic right of all people and an essential pre-requisite for economic and social development (Wolf, 1984). However, not a single country in Africa has achieved UPE. According to Mutua and Namaswa (1992) it is Nigeria and Tanzania that have been closer to achieving it. The writers further asserts that for a country to achieve UPE there are two prerequisites; one, it should be understood that for various reasons, not all citizens of a country will go to school. This is due to social, cultural and economic factors. Secondly, education should be compulsory, where every citizen with school- going age children is compelled by law to send them to school on pain of prosecution. It is therefore necessary to make education free and compulsory if countries have to achieve UPE. This partly explains why the Government of Kenya (GOK) recently introduced the policy of Free Primary Education.

2.3 Free Primary Education (FPE) in Kenya

Because of the vital role that education plays in the overall development of humanity, the government has an inescapable responsibility to ensure that every citizen attains at least basic education (Koech Report, 1999). Kenya's bid to achieve UPE started way back during the colonial era. In the late 1940s the African political party, Kenya African Union (KAU) started demanding for free UPE for African children. These aspirations were strengthened by the recommendations of UNESCO Addis Ababa conference of 1961 (Bogonko,

1992). One of the agreements during the conference was that governments must aim at achieving UPE by 1980.

With the attainment of independence, the Kenya African National Union (KANU) manifestos between 1963 and 1979 committed the country to attaining the goal of seven year free UPE. The Kenya Education Commission report of 1964 also supported the objective of giving every child a minimum of seven years free UPE. The need for free UPE was also stressed in all the five-year development plans between 1966 and 1983. First steps to FPE in Kenya were not taken until 1971 when President Kenyatta abrogated tuition fees for economically marginalized districts in the country: Samburu district whose enrolment ratio in primary schools went up by 31%, Wajir with 71%, Isiolo with 23%, Marsabit with 29% and Tana-River with 26 % (Bogonko, 1992). In December 1973, another presidential decree made education free for the first four years of primary education throughout the country. This decree led to a national increase in enrolment from 1.8 million in 1973 to 2.8 million in January 1974 (Bogonko, 1992).

The efforts to achieve free UPE were dealt a big blow following the recommendation of Kamunge Report of 1988. It recommended the introduction of cost-sharing in education. This led to a decline in enrolment at primary level from 95.4% in 1988 to 76.7% in 1997 as indicated in the National Development Plan of 1997-2001. Most parents would not afford the cost of education due to prevalent poverty.

It was not until January 2003 when the NARC government under President Mwai Kibaki took over the leadership of Kenya that there was a renewal of the efforts directed towards achievement of free UPE. Once more, parents had every reason to rejoice when the new government kept its word and honored one of its key pledges - providing FPE.

Children who had been locked out of education for lack of fees turned up in their thousands. Key stakeholders have come up with varying figures regarding the huge influx of pupils in schools. According to a UNESCO Report, the absolute number of one million two hundred and thirty thousand children came into the school after the introduction of FPE, and this moved the gross enrolment from 5.9 to 7.6 million children. This was a big achievement. Most people who benefited were the poor as they were unable to afford education due to levies and various constraints that were there before (UNESCO, 2005). The huge influx of pupils aggravated an already bad situation with many public schools already short of teaching staff and learning facilities. In some schools there were so many children that parents and teachers agreed on double shifts with one lot of pupils learning in the morning and another in the afternoon. However, despite the hiccups, Kenya is now on its way to achieve its goal of FPE and basic education for all by 2015 (UNESCO, 2005).

Some critics have blamed the government for rushing its decision to implement the FPE policy before considering the financial and logistical challenges that

are involved. The government has however stated its determination to work towards the success of FPE and appealed to donors and the private sector to support the programme. The then Minister for Education, George Saitoti said that he had no illusions about the challenges ahead and added that the success of FPE programme depended heavily on the government's ability to mobilize resources and efficiently manage those resources (Akala, 2002).

2.4 Gross Enrolment Rates in Primary Schools in Kenya

Gross enrolment rate (GER) is the ratio of all ages enrolled in primary schools to the population of children of primary school age. The relevant age group for primary school is 6 to 13 years (Republic of Kenya, 1998). For several years, the government's aim has been to achieve 100% enrolment rate in primary schools, and reduce the disparities in access to and quality at all levels of education. However, only 85% of persons aged 6 are in school (Republic of Kenya, 1999).

Large gains in primary school enrolment were achieved in the first two decades after independence when fee for the first four grades of primary school were eliminated and the number of schools expanded. At its height, the gross enrolment ratio reached 115% in 1980, and the gap between male and female enrolments declined to 10 % (Schmidt, 2006). The immense growth in primary education after independence was attributed to the fact that the government aimed at achieving UPE by 1980, as had been agreed at the Addis Ababa conference in 1961 (Bogonko, 1992).

The trend reversed thereafter, lowering gross enrolment to 91%(Otieno, 2003).The Republic of Kenya (2001) supports this assertion by positing that after the high enrolment of two post- independence decades, there has been a reversal at the pre-primary, primary and secondary levels of education characterized by low enrolments, high level of dropouts, low completion rates and poor transition rates from one level of education to the other. The problem is attributed to high cost of education (Republic of Kenya, 2001). The decline in enrolment is thought to have corresponded to the introduction of formal cost-sharing in 1988(Schmidt,2006).Otieno(2003) adds poverty levels and staffing problems as other reasons behind unsatisfactory performance in the primary school system. Table 2.1 below illustrates the change in primary schools' enrolment from 1991 to 1999.

Table 2.1: Percentage Change in Primary Schools' Enrolment Rates in Kenya, 1991-1999

Year	Enrolment	% Change
1991	5,455,996	-
1992	5,563,987	1.9
1993	5,428,396	-0.02
1994	5,557,008	2.37
1995	5,544,998	-0.22
1996	5,597,656	0.95
1997	5,764,855	2.99
1998	5,919,721	2.69
1999	5,867,603	-0.88

Source: Republic of Kenya (2000). *Poverty in Kenya (Vol. 1). Incidence and Depths of Poverty*. Nairobi: Government Printers.

One of the government's guiding philosophies for education is the concern that every Kenyan has the inalienable right, no matter his or her socio- economic

status to basic education (Republic of Kenya, 1998). In order to tackle this challenge the GOK has introduced FPE and substantially revised the curriculum to reduce the financial burden of education. Further measures include optimal staffing- teacher- pupil ratio of 35:1(Republic of Kenya, 2003).

From this discussion, it is therefore clear that for a country to achieve 100% enrolment and UPE there should be concerted efforts to lower as much as possible the cost of education which stands out as a major hindrance. One of the ways of ensuring this is through the provision of FPE to its citizens. The effort being made by our current government is therefore laudable. Table 2.2 below illustrates change in primary schools enrolment from the year 2000 to 2008.

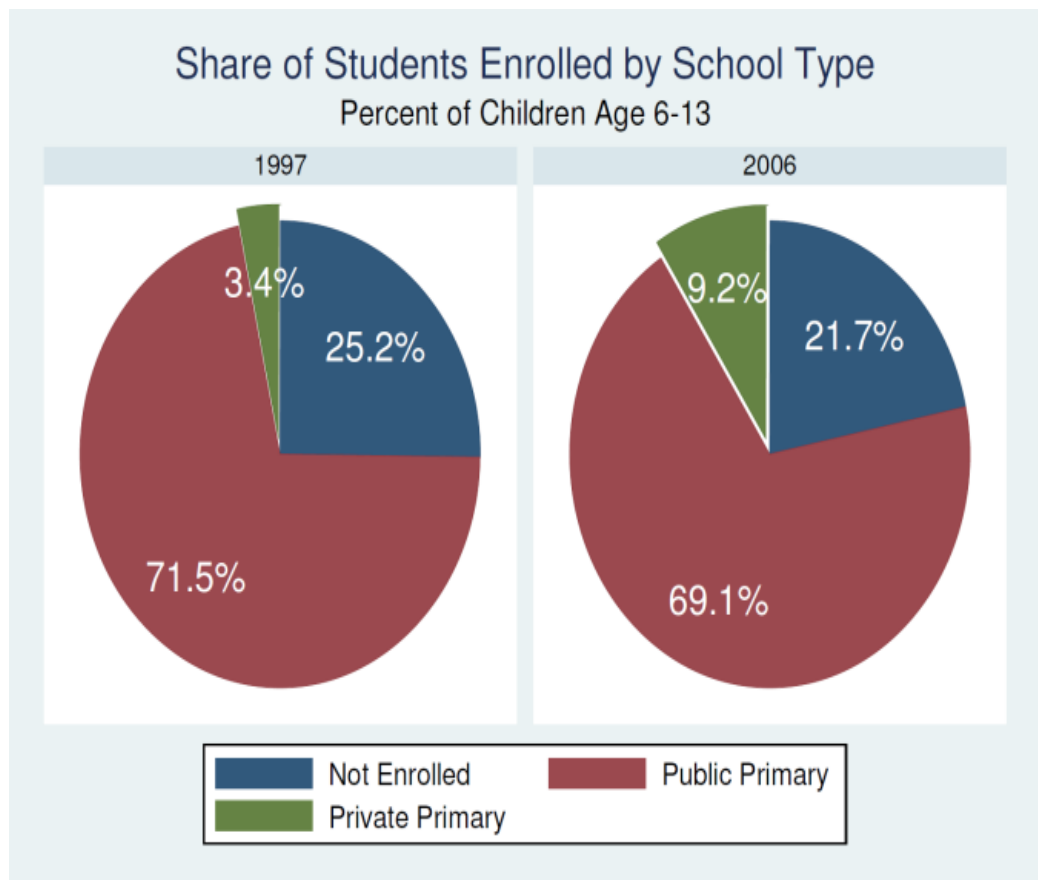
Table 2.2: Percentage Change in Primary Schools Enrolment Rates in Kenya, 2000 – 2008

Year	Enrolment(in million)	% Change
2000	6.078	-
2001	6.081	0.049
2002	5.9	0.82
2003	7.6	16.7
2004	7.394	3.28
2005	7.591	2.66
2006	7.6	0.12
2007	8.33	9.6
2008	8.56	2.76

Source: The Kenya Institute for Public Policy Research and Analysis (2009). *Kenya Economic Report 2009*. Nairobi: Kippra

Figure 2.1 below shows an unstable change in enrolment in primary schools that was witnessed in the fourth decade of independent Kenya.

Figure 2.1: Share of Students Enrolled by School Type



Source: Loudon K. (2009): *Lessons from Kenya's Introduction of Free Primary Education*. Retrieved from <http://www.iig.ox.ac.uk/output/briefingpapers/pdfs/iig-briefingpaper-04-kenya-teacher-interns.pdf>

2.5 Teacher Adequacy

Teacher adequacy refers to the number of teachers that can conveniently handle a given number of pupils. It is measured in terms of a ratio. Like any other good in the market, equilibrium between demand and supply of teachers is very vital for the progress of the larger education sector. The quantity of any good or service demanded is the number of units consumers want to buy, while the quantity supplied is the number of units sellers want to sell (Baumol and Blinder, 1988). For harmony to prevail in the market therefore, demand and supply should be kept at equilibrium. Applied to education, there should be equilibrium between demand and supply of teachers for quality teaching and learning. Usually dynamic equilibrium is more important than a static one, which only targets a particular period of time (Williams, 1979).

It is generally believed that for quality education to evolve and be sustained the question of teachers is a central factor (Bogonko, 1992). However, teacher shortage has been an inherent problem in many countries in the world, hence overcoming the current and prospective shortages of teachers remains one of the biggest hurdles facing countries that are attempting simultaneously to expand rapidly and to improve their educational systems (Arnold et al, 1965).

In developed countries emphasis is on preparing projections of teacher requirements that extend over the next decade or so, in the hope that this will be in some way useful to educators, legislators and the like, who presumably require relatively long time horizon to develop plans for the expansion of their

education systems (Arnold et al, 1965).The writer further asserts that in the less developed countries, numerous plans for education expansion are also being prepared. These too involve projecting well into the future as far as teacher demand and supply are concerned.

These estimates are usually prepared in a rather straight forward fashion (Arnold et al, 1965). First, the population of school age is projected forward for a period of from 5-20 years; second ,the proportions of the school age population that will be attending school are projected forward and then used in conjunction with the figure on school age population to make estimates of the numbers of students enrolled; and third, student-teacher ratios are projected forward for these same years and the ratios then divided into the number of students enrolled to estimate the required number of teachers .

2.5.1 Teacher Demand in Public Primary Schools in Kenya

Throughout the independence era, there was a strong believe that to improve the quality of secondary education, that of primary schools had to be improved first and teachers are rightly regarded as the hub in that process (Bogonko, 1992).Basically, the teaching force can be represented as the product of two factors which are; (a) the number of learners to be enrolled and, (b) the teaching technology in use, resulting in PTR. According to Williams (1979), the choice of the determining factor will depend on economic factors- the cost of educational inputs, particularly teachers salaries; share of the total cost of education that the government is to meet from the public resources and the size

of the private sector in education; the overall availability for educational purposes and the assessment made of the contribution that education will make to economic growth.

On the side of learners' enrolment, the best possible projections are indispensable for teacher forecasting, though it is desirable to provide for the greatest possible flexibility in the arrangements of teacher supply. On the other side, the educational technology in use is the key to the output- labour ratio in education (PTR) and enables one to calculate teacher requirements from pupil enrolments. There are three key components; average class size, average number of teacher contact periods required by a class over a complete teaching cycle and the average teaching load per teacher (Williams, 1979). The PTR used for teacher requirements forecasting should be based on some teaching and learning strategy which specifies among other things the average size of classes, the total number of teacher –contact time required by a class over a week, and average teaching loads per teacher per school week.

In Kenya, the issue of teacher demand is of grave concern to all the key stakeholders in the education sector. It is usually concerned with the number of teaching force that is required by the government at a certain point in time. Teacher demand directly depends on the gross enrolment of the learners and the ability of the government to sustain a given number of this work force.

There is a decline of teachers by 1.8 per cent and 2.9 per cent in primary and secondary schools in the face of a rising number of pupils at both levels (KIPPRA, 2009). The Minister for Planning, Wycliffe Oparanya, while releasing the Economic Survey 2009 Report, called for recruitment of new teachers after it emerged the teacher numbers fell unexpectedly in 2008. He said (Siringi, 2009:3),

Teachers' employment needs to be addressed. The total number of teachers at both primary and secondary level is on the decline while enrolment is expanding.

2.5.2 Teacher Supply in Primary Schools in Kenya

Williams (1979) posits that supply of teachers should be considered under stock and flow. The stock of teachers (teaching force) at any moment in time consists of the teachers serving in schools, plus those who are on the payroll but on temporary release for in- service training or approved leave. Teacher flow is concerned with the outflows and inflows.

The number of trained teachers in Kenya naturally increased in the course of time from 32,929 in 1970 to 52,132 in 1974 and further to 62,729 in 1978 and 82,983 in 1983. By 1990, the figure had risen to 121,461 (Bogonko, 1992). Bogonko further posits that to maintain this kind of trend, the government enforced the regular teacher training, and mounting of in-service courses for untrained teachers in the service. This led to a steady increase in the number of trained teachers all over the country since independence. There was a big mismatch between the percentage increases in the number of learners and the

number of qualified teachers available in the country. For instance looking at the year 1963 and 1964 when there was a percentage increase in enrolment of 13.8, the percentage increase in the number of available teachers was -0.08. A similar trend was also witnessed between 1969 and 1970. This is the kind of scenario that has been prevalent in Kenya to date, making teaching – learning process so difficult.

2.5.3 Measures to Achieve Balance between Teacher Demand and Supply

The educational planner who is faced by surplus or shortage of teachers should examine the factors causing the imbalance and consider ways of correcting it.

According to Williams (1979), the following ways may be useful:

- ❖ Adjusting of teacher – training output.
- ❖ Regulating upward or downward of school intake and enrolment.
- ❖ Changes in who is an acceptable teacher.
- ❖ Introduction of new policies in relation to teacher retention and loss.
- ❖ Use of different policies on replacement of temporary teachers and on attraction back of teachers who have resigned.
- ❖ Adjusting of the average length of courses for teacher trainees.

2.6 Pupil- Teacher Ratio

According to Akala (2002), quality learning demands for example, that teachers have reasonably sized classes. The MOEST recommends a PTR of 35:1 which would give the teacher adequate time to give personalized attention to each pupil, to supervise class work and mark books and examinations.

Moderate numbers would also allow the teacher time to plan lessons and execute their plans more efficiently.

Unfortunately, for Kenya the achievement of this standard PTR of 35:1 has been an uphill task all along since independence. The World Bank (WB) complicated matters even further when it recommended a PTR of 40:1 (Akala, 2002). Whatever the case, the PTR in Kenya has shown an upward trend due to somewhat constantly increasing enrolment rate in primary schools as compared to a declining or almost stagnant number of teachers. At independence, there was a major shortage of trained teachers forcing the GOK to hire so many untrained teachers. In 1960s, the PTR increased from 31:1 in 1966 to 34:1 in 1970 and 50:1 in 1986 (Bogonko, 1992). Because of this kind of trend, the Kamunge Report (1988) suggested that there was need to have an annual intake of teachers to in-service courses rather than one after every three years, with an aim of reducing the number of untrained teachers as well as increasing the overall production of qualified primary school teachers.

Contrary to this, in 1990, the GOK bowed to the pressure from WB and IMF to reduce the government funding in the education sector. The two institutions recommended the resizing of the civil service (including teachers) through retrenchment to enhance efficiency. This recommendation ignored the increasing enrolments in primary schools.

Further increases in pupil enrolment and the natural attrition among teachers through death and retirement from service implied that more teachers would be recruited the subsequent years. Yet the WB policy of restructuring the civil service through retrenchment led to suspension of teacher recruitment in 1998 (Akala, 2002). As a result it was recommended that some 8,505 personnel teachers be redistributed to cater for the areas which are understaffed by 8,264 personnel. This recommendation forced the total number of the teaching force in primary schools in Kenya to stagnate at around 180,000.

According to the Economic Survey 2009 (KIPPRA, 2009), the number of teachers in primary schools fell by more than 3,000—from 173,157 in 2007 to 170,059 in 2008. The ratio of pupils to teachers moved from 44:1 in 2007 to 45:1 in 2008. But the ratios vary from district to district ranging from 24:1 to 94:1. On average, 87 out of the 158 districts have a higher pupil teacher ratio than the national average. It means that there are major disparities in the teacher distribution across districts countrywide.

Some writers have faltered the use of PTR as a measure of teacher adequacy. According to Akala (2002), the practice of using the PTR used by TSC in Kenya is defective and unrealistic. For instance, a school with only 100 pupils will still need teachers for all subjects irrespective of the number of students enrolled in each subject. These teachers will take all recommended teaching hours but the PTR may be as low as 5:1. This is not a justification for a teacher

in another populous school to teach a class of 60 students (60:1). Yet this is how ratios work!

Wolf (1984), puts more emphasis on the shortcomings of PTR by asserting that National PTR may hide an equally important issue, that of equitable distribution of teachers. Some densely populated urban or rural areas may have PTR, which deviate widely from national averages; and decisions may be needed on how to smooth out these variations. Even if the MOEST puts the current PTR at 39:1, the reality is still that many districts in Kenya are experiencing a shortage of teachers. For example, Narok district needs 400 teachers, Nyanza province requires 1800, Eastern province 700 and Central province 800. This is as per the TSC records (Akala, 2002). Increased enrolment rates have overburdened teachers. In many schools, teachers are forced to do shift work with separate groups of children in the mornings and afternoons, for no extra pay.

2.7 Organizational and Teacher Effectiveness

An organization consists of a group of people whose efforts are deliberately coordinated for the achievement of specific goals. Effectiveness in an educational organization is judged by the extent to which the organization achieves its goals, acquires the necessary material and human resources, provides a congenial organizational climate, and meets the expectations of the society within which it is established.

According to Okumbe (1998:9),

Organizational effectiveness is the ability of the organization to procure and efficiently use the available resources in order to achieve the goals for which it was established. Educational organizations are established to help society achieve a number of goals, which enhance acquisition of knowledge, attitudes and skills.

Nzuve (1999) says that various organizational conditions make an organization effective. These conditions can be looked at in three perspectives: Theoretical, developmental and managerial. Theoretical perspective describes the ideal state in which various organizational components are compatible with each other. The developmental perspective concerns the organization's effort to enhance organizational capacity in order to reach the ideal state. And the managerial perspective is primarily concerned with solving immediate managerial problems.

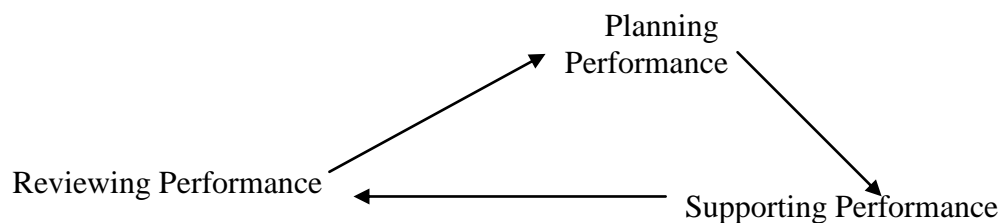
For an organization to achieve an effective performance there should be effective teams, groups and individuals doing the work (Derek *et al*, 2002). They further assert that it is no good having the right people but not delivering the goods. They all have to perform effectively since getting the most of the work force is always the predominant management pre-occupation.

Different human resource (HR) policies and practices will be needed to produce high performance or effectiveness in different firms. According to Derek *et al* (2002), these policies include: recruiting the 'right' people,

extensive use of self managed teams and decentralization, high wages, high spending on training, reducing status differentials and sharing information.

In an educational organization, there may be no enough material and human resources necessary for achievement of their goals. However, its effectiveness will still be judged by the extend to which the organization achieves its goals, acquires the necessary material and human resources, provides congenial organizational climate and meets the expectations of the society within which it is established (Okumbe, 1998:9) .Derek *et al* (2002) says that there are three key aspects of effective performance as shown in Figure 2.2 below.

Figure 2.2: Key Aspects of Effective Performance



Source: Derek *et al* (2002:298). *Human Resource Management* (5th Edition). London: Pearson Education Ltd

Planning performance involve hiring qualified personnel while supporting performance involves providing adequate HR for better results through constant evaluation and monitoring (reviewing performance).

In order to increase teachers' effectiveness, there is need to increase the length of initial teacher education and to recruit teachers with higher academic qualifications. In this matter, the Government should undertake reforms in teacher education (Njiru *et al*, 1997).

Structured diploma programmes that would enable holders to improve their learning processes as primary teachers should replace P1 certificate courses. Besides, the current Bachelor of Education degree should be reformed to enable holders to have more teaching units. The issue is that teacher education needs to offer a flexible teaching career ladder based on skills, responsibilities and performance. (Kigotho, 2009:31).

There are certain input characteristics that determines teachers' effectiveness as far as students' overall performance is concerned. They include: teacher/pupil relationship, teacher training, teacher experience teachers' salaries and expenditure per pupil (UNESCO, 2000).Table 2.3 that follows show this.

Table 2.3: Percentage Distribution of Estimated Effect of Key Resources on Student Performance, Based on 377 Studies

Resources	Number of estimates	Statistically significant		Statistically insignificant		
		Positive	Negative	Positive	Negative	Unknown sign.
Real class-room resources:						
Teacher/pupil ratio	277	15%	13%	27%	25%	20%
Teacher education	171	9	5	33	27	26
Teacher experience	207	29	5	30	24	12
Financial Aggregates:						
Teacher salary	119	20%	7%	25%	20%	20%
Expenditure per pupil	163	27	7	34	19	13

Source: UNESCO (2000:38). *Improving School Effectiveness*. Paris: Institute of Educational Planning

Interpretation of these results on this table shows that one can have some confidence that adding more of any of the specific resources or, for that matter, of the financial aggregates, will lead to a boost in pupil achievement.

2.8 Quality and the Role of the Teacher

Quality in education must include a change in the teachers. Teachers, next to students are the largest most crucial inputs of an educational system. There is need for enough and qualified teachers if education standards are to be maintained .Education is a lifelong process through which people acquire the necessary knowledge and skills to improve their well being (Njiru et al, 1997).

Performance of pupils is critical in evaluating the quality of education. The performance of pupils in primary schools has been attributed to the fact that

enrolment has far exceeded the school's resources. Since schools are unable to charge levies and offer teachers incentives to teach overtime, which have also been banned, there has been little extra coaching to address the needs of slow learners (Kigotho, 2009:31). However, it is important to ensure that academic standards are maintained and that schools produce quality graduates.

The most relevant measure of educational effectiveness is not the number of enrolled pupils as is often used in evaluating educational progress in developing countries. Rather, it is the number of completers that have achieved a required level of training (World Bank, 1980). The main objective of Basic Education for All (BEFA) is to impart literacy, numeracy and manipulative skills. If the education system were to be judged solely by the size of the student enrolments, the question of a crisis in the content and quality of education would not arise. However, the education system exists to teach students, not to produce statistics (Coombs, 1996). Questions must be asked as to what the students have learned, how much and how well they have learnt.

The Finance and Development (2005) observes that without significant contingent commitments from donors, those countries that undertake a major expansion of access to education can suffer serious declines in quality- the student-teacher ratio may zoom to 100:1 from 50:1 in ill-equipped classrooms. While millions of poor children have clearly benefited from the elimination of these financial barriers to schooling, such dramatic expansions without an equivalent boost in resources to compensate for lost fees and support the

increased numbers of students can create a quality dilemma. In Uganda, for example, while more students gained access, the explosion in class sizes- without more external assistance- caused a significant drop in the percentage of students receiving satisfactory scores in Mathematics and English. The answer to this dilemma is neither to forego such admirable efforts to eliminate fees nor to discourage such leaders from seizing critical political moments to push their nations towards universal basic education. Instead, what is needed is substantial continent donor funding to encourage well-planned expansions (The Finance and Development, 2005).

EFA can only succeed if teachers are treated as participants and not just as employees. Educators need to develop greater self- awareness of both strengths and weaknesses, and how they may influence students and the learning process. Emotionally secure, competent and committed teachers are one of the most important assets for qualitative education in the future (UNESCO, 2000).

Dramatic expansions of primary school completion can only be accomplished with a comparable expansion in the number of teachers. Yet teacher salaries constitute the largest component of an expansion- usually averaging over 80 per cent of education budgets in major developing nations- and they are recurrent costs. As a result, countries hesitate to hire the extra teachers necessary to expand quality education because of lack of resources and a lack of certainty about the durability of those resources (UNESCO, 2000).

2.9 Summary

The chapter endeavoured to examine Free Education and Free Primary Education (FPE), Gross Enrolment Rates in Primary Schools in Kenya and what Teacher Adequacy entails using Pupil- Teacher Ratio. It again assessed Teacher Demand and Supply in Kenyan Primary Schools and Measures which can be used in trying to attain a balance between Teacher Demand and Supply. It finally looked at Organizational and Teacher Effectiveness, and the Quality and the Role of the Teacher.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methods that were employed in this study. It covers the research design, the locale of the study, target population, sample size, sampling procedures, instrumentation, data collection and analysis procedures.

3.2 Design and Locale of the Study

This study utilized descriptive survey design. This design was found appropriate since it is used in preliminary and exploratory studies to allow researcher gather, summarize, present, and interpret the data for the purpose of clarification (Orodho, 2005:44). The study was conducted in public primary schools in Kakamega South District, in Kakamega County of the Republic of Kenya. The district comprises one constituency; Ikolomani and is made up of two divisions. The location was chosen due to its rural setup and being mentioned among those with the highest poverty index (UNDP, 2006). It therefore implied that the introduction of FPE could have had an impact on school enrolment, more so in primary schools. It was interesting to find out the exact position on the ground and probably find out its impact on teacher adequacy and teacher effectiveness.

3.3 Target Population and Sampling Procedures

The study population was 68 public primary schools in Kakamega South District, 68 head teachers in the public primary schools in Kakamega South District and the District Education Officer (DEO). Head teachers were targeted because they have a direct role to play, as executive officers of the management committees of schools and government agents, in provision of all the necessary resources including teachers, in an attempt to ensure the smooth teaching – learning process. The DEO was targeted so as to augment information gathered from head teachers.

The district has 68 public primary schools. It is from this population that the sample schools were drawn. Twenty three (23) schools are a third of the total number of those schools and therefore a representative sample (Orodho, 2005). To get the samples of schools, systematic random sampling procedures were used. In systematic random sampling, a sample is drawn from fixed intervals on the list (Sudman, 1976). Systematic sampling can be used if a researcher is certain that the population list is not in some periodic order or if there is no possibility of periodicity in the list. Periodicity means that every K^{th} has some unique characteristics which are related to, or have an effect upon, the dependent variable (Orodho, 2005). All the schools were arranged using school codes in an ascending order. Every K^{th} number was picked from the list containing 68 public primary schools. Thus, $K = 68 \div 23$ (divided the total population by sample size to get the interval). By selecting the first item on the

list, every third public primary school on the list was used for this study. For each of these schools, the school's head teachers were used for this study.

Purposive sampling was used in choosing the DEO as a sample for this study.

This sampling procedure involves handpicking cases to be included in the sample on the basis of a researcher's judgment of their typicality (Orodho, 2005:147). The DEO was therefore sampled to augment some of the information gathered from head teachers.

3.4 Research Instruments

A questionnaire developed by the researcher was issued to head teachers. The questionnaire had four sections. The first section solicited demographic information of the enrolment rates; the second section was concerned with the number of teachers before and after the introduction of FPE; the third section sought data on teacher effectiveness in so far as performance in KCPE was concerned; and the last section looked at the strategies that have been employed by school managers in an attempt to achieve optimal growth in pupil enrolment visa avis the number of teachers for effective teaching- learning process.

A questionnaire was found to be the most appropriate tool for data collection. According to Kathuri and Pals (1993), questionnaires are used to collect basic descriptive information from a broad sample. Orodho (2005:157) adds that,

Questionnaires have the ability to collect a large amount of information in a reasonably quick space of time, questions can be easily analyzed, anonymity is possible and questions are standardized .

The researcher again administered an individual structured interview on the District Education Officer (DEO). This was guided by relevant prepared questions about the study. An interview is often superior to other data gathering devices (Koul, 1993). One reason is that people are usually more willing to talk than to write. After the interviewer gains rapport or establishes a friendly, secure relationship with the subject, certain confidential information may be obtained that an individual may be reluctant to put in writing (Patton, 1990). Another advantage of interviewing is that the interviewer can explain more explicitly the investigations' purpose and just what information he or she wants. If the subject misinterprets the question, the interviewer may follow it with a clarifying question. At the same time, the researcher may evaluate the sincerity and insight of the interviewee. It is also possible to seek the same information in several ways at various stages of the interview, thus checking the truthfulness of the responses (Patton, 1990).

The researcher used a Structured Observation Sheet which he developed to collect more data. Spot check, a type of structured observation, was made by the researcher in the sampled schools. These are observations whereby the observer records the presence or absence of a behaviour or physical characteristic of interest at the first observation. Spot checks are usually carried out as soon as the observer arrives; in order to catch the "real situation" before

there is time for the observer's presence to affect the people's behaviour. According to Orodho, spot checks provide precise, numerical results, which are amenable to statistical analysis and can be repeated to monitor behavioural change over time (Orodho, 2005).

3.5. Pilot Study

The researcher conducted a pilot study prior to the administration of the research instruments. This enabled the researcher to refine the research instruments by making corrections based on observations made. According to Ary *et al* (1972:87),

The pilot study will demonstrate the adequacy of the research procedures and anticipated problems that may be solved before the final administration.

In this study the researcher selected six (6) public primary schools from the number left after the sample had been drawn. The schools for the pilot study were not thus part of the sample. The researcher administered the questionnaire on head teachers from those six selected schools. The schools were: Lirhembe, Ikhulili, Musoli Mixed, Sabane, Shimanyiro and Mutaho.

3.6 Reliability of Measurement

Reliability is the degree to which a particular measuring procedure gives similar results over a number of repeated trials (Orodho, 2005). The internal consistency of data was worked out using Cronbach's coefficient Alpha (α). It is a widely used technique for calculating a correlation coefficient. It requires only a single administration of the test. Cronbach's coefficient Alpha (α) is a

general form of the K-R₂₀ formula that can be used when items are not scored dichotomously (Orodho, 2005). The use of K-R₂₀ in assessing internal consistency of an instrument is based on the split – halves of the instrument. Its use reduces the time required to compute a reliability coefficient in other methods.

The K-R formula is as follows:

$$KR_{20} = \frac{(K)(S^2 - \sum s^2)}{(S^2)(K-1)}$$

Where: KR₂₀ = Reliability coefficient of internal consistency
 K = Number of items used to measure the concept
 S² = Variance of all scores
 s² = Variance of individual items

Source: Mugenda O.M and Mugenda A.G (2005:99). *Research Methods: Quantitative and Qualitative Approaches*: African Centre for Technology Studies, Nairobi

A high coefficient implies that items correlate highly among themselves; i.e., there is consistency among the items in measuring the concept of interest. Frankfort *et al* (1996) recommend 0.700 as the lowest reliability coefficient level at which items should be considered reliable. A reliability coefficient of 0.830 was established and hence the adoption of the questionnaire for the study.

3.7 Validity of Measurement

The researcher solicited views of his supervisors and other research experts. They assessed the relevance of the content used in the questionnaire, individual interview schedule and the observation schedule developed. They examined the instruments individually and provided feed back to the researcher. Their recommendations were incorporated.

3.8 Data Collection

The researcher obtained a research permit from the Ministry of Education, authorizing him to collect data. He equally sought written permission from the District Education Officer (DEO) of the respective district, before visiting all the sampled schools to establish rapport and make appointments with head teachers. On the actual day of collecting data, the researcher distributed the questionnaires and gave respondents one week to respond to them. He interviewed the DEO .He conducted spot checks in sampled public primary schools using a structured observation sheet.

3.9 Data Analysis

The data obtained in this study was organized and then analyzed descriptively. The analysis was done using the Statistical Package for Social Sciences (SPSS).The data was described using means, ratios, tables, percentages and graphs.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

The results of the data collected are presented, analysed and interpreted in this chapter. The organization of the chapter is by research questions of the study.

The Research Questions were:

1. What were the enrolment trends in public primary schools four years before and six years after the introduction of FPE (1999-2008) in Kakamega South District?
2. What was the population of teachers in public primary schools four years before and six years after the introduction of FPE (1999-2008) in Kakamega South District?
3. How effective were teachers in their teaching work four years before and six years after the introduction of FPE (1999-2008) in Kakamega South District?
4. What were the strategies being employed by school managers to achieve teacher adequacy and teacher effectiveness in public primary schools six years after the introduction of FPE in Kakamega South District ?

4.2 Description of Findings by Research Questions

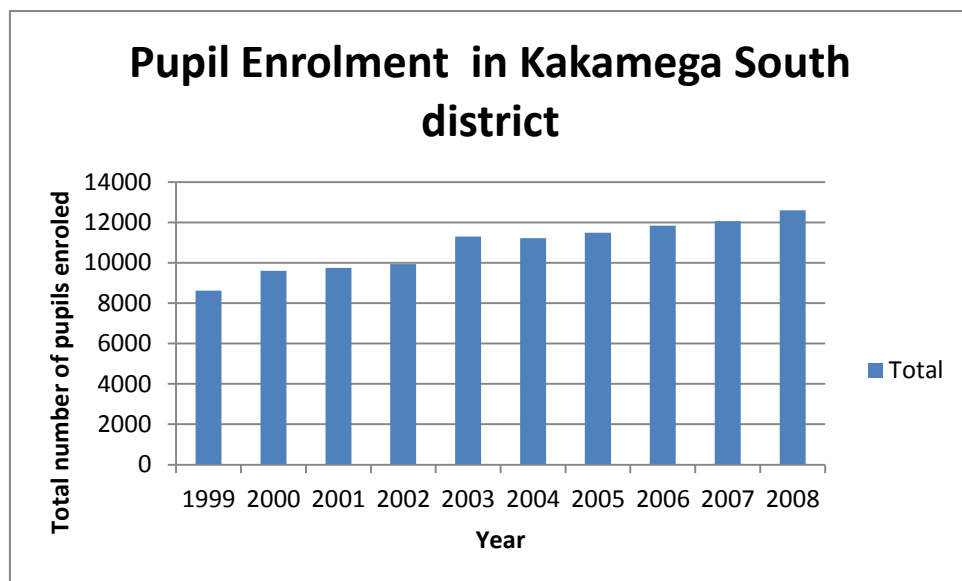
4.2.1 Research Question 1

The pupil enrolment trend was measured by eliciting information on pupil enrolment in respect to various enrolment factors like age, sex and enrolment per grade. The specific areas under investigation were; the general trend in pupil enrolment in schools and the reasons for the various trends. The findings of this study indicate that pupil enrolment trend took an upward direction for the ten year period under study (1999-2008) as shown in Figure 4.1 below.

4.2.1.1 Overall Pupil Enrolment

Figure 4.1 below shows school pupil enrolment for both the period before and after the introduction of FPE. The period stretches from 1999-2008.

Figure 4.1: Pupil Enrolment in Kakamega South District



The overall pupil enrolment in public primary schools in the district from 1999- 2008 took an upward trend. It was more pronounced after the introduction of FPE. Pupil enrolment increased from 8500 in 1999 to 12,250 in 2008. The highest increase was witnessed in the year 2003, which experienced an increase of about 16% from the previous year. The number of pupils rose from 10,000 in 2002 to 11,600 in the subsequent year. This is the year FPE had been introduced in Kenya.

The finding agrees with the assertion by the Republic of Kenya (2003) that FPE led to increased enrolments due to a reduction of financial burden in education. This was in line with one of her philosophies concerning education, that every Kenyan has a right irrespective of his her socio-economic status to basic education. FPE programme therefore reduced the burden for many school going age children. This also agrees with the findings by Schmidt (2006), who says that when the prices of schooling goes down, lower income households will increase their demand for schooling. According to this writer therefore, eliminating school fees reduces the bias in access to education.

This confirms the assertion by UNESCO (2005) that the introduction of FPE in the year 2003 led to an abrupt increase in enrolment in public primary schools. This was one of the major accomplishments of FPE. The influx of many pupils into the schools through FPE illustrated the fact that many eligible children had been denied education in the past because of the numerous levies they were required to pay (UNESCO, 2005). Now that the government had come in

strongly to meet these requirements, many parents had a sigh of relief. They could take their children to school without feeling heavily burdened.

According to Schmidt (2006), various theories highlight the negative impact of schooling costs on enrolment particularly among the poor. These theories predict that the elimination of fees will increase enrolment and equity in education. After the year 2003, the enrolment started increasing. The findings of this study agrees with the findings by Schmidt(2006) that although FPE policy has reduced the cost of education and therefore would be expected to increase enrolment and decrease wealth biases in education, the gains in enrolment and equity are small and may not be lasting.

Because of this, UNESCO (2005) recommended that the local communities should encourage parents to take children to school and encourage them to stay on. The government was also encouraged as a matter of priority to develop the FPE policy that clearly defines what FPE is all about, especially as far as access, quality assurance, retention and completion strategies are concerned.

4.2.1.2 School Enrolment Trends

Table 4.1 overleaf gives a summary of school enrolment trends in Kakamega South District.

Table 4.1: Pupil Enrolment Trends

Trend	Frequency (N=23)	Per cent
Upward	17	74.0
Downward	1	4.3
Fluctuating	5	21.7
Total	23	100.0

The results of the research indicate that a bigger number of schools in the district, 74.0 % have experienced an upward trend in pupil enrolment in the ten year period under study (1999-2008). Twenty one point seven (21.7 %) per cent have had a fluctuating trend while 4.3 % have had a downward trend.

Thirty one point four (31.4%) per cent of the schools which recorded an upward trend sited the introduction of FPE as the main contributing factor, while 24.3 % said it was due to improved teaching- learning facilities. The other reasons sited include accessibility of schools 22.9 %, population increase 18.6 %, induction of parents on importance of learning 1.4 % and improved sanitary facilities recorded a response of 1.4 %.

Among the schools which recorded a fluctuating trend in enrolment, 18.5 % sited unstable families; introduction of FPE, population increase and transfer to private and boarding schools each contributing 14.8 %. Accessibility of schools and improved teaching- learning facilities each contributed 11.1%. A further

7.5% sited mushrooming of other public schools while early marriages recorded 7.4 %.

A few respondents, about 4.3% who indicated that their schools experienced a downward trend in enrolment sited various reasons. Fifty (50%) per cent was attributed to the mushrooming of other public schools. Poor teaching- learning facilities, promiscuity, poverty, alcohol brewing and death all contributed another 50 %.

Most of these factors for various enrolment trends have also been appreciated by UNESCO (2005) which states that after an initial increase in enrolment in public schools which came with free schooling; schools were beginning to experience a decline in enrolment due to dropouts to a lesser degree and transfers to private schools. A number of factors explain the situation, including unfriendly learning environment, poverty, child labour and HIV/ Aids. Otieno (2003) confirm that poverty levels have a negative effect on primary school enrolment.

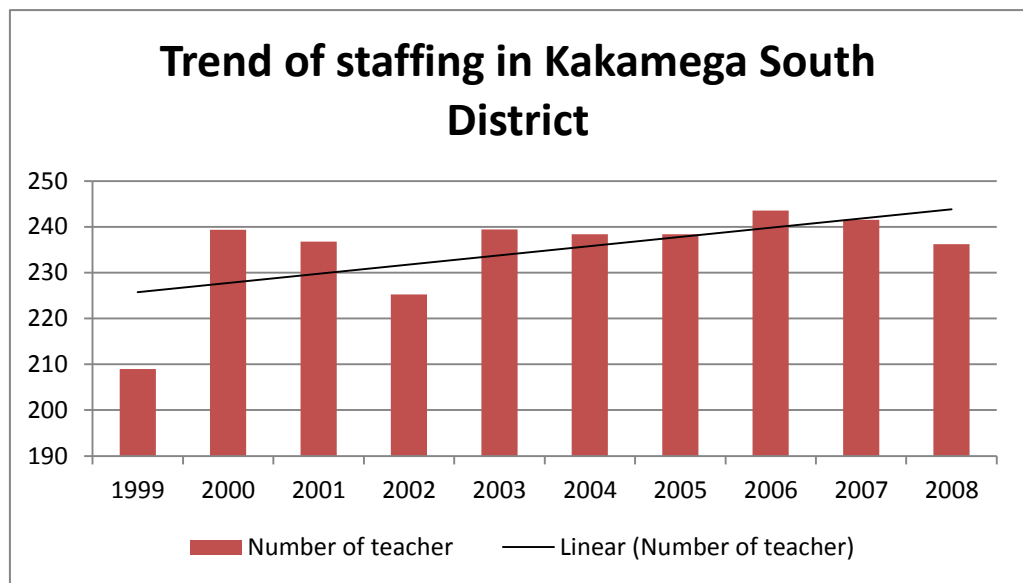
4.2.2 Research Question 2

The teacher population was measured by elicited information on the number of teachers in respect to various demographic factors like age, sex and work experience. The reasons for various staffing trends were also investigated, together with the pupil- teacher ratio (PTR).

4.2.2.1: Average Teacher Population in the District

Figure 4.2 below gives a summary of teacher population in public primary schools in Kakamega South District from 1999- 2008.

Figure 4.2: Trend of Staffing in Kakamega South District



The results of the study indicate that there had been a fluctuating teacher population in the area of study during the period 1999-2008, with female teachers providing 55.2% of the teacher population while their male counterparts forming 44.8%. There were 209 teachers in 1999, 239 in 2000, 237 in 2001 and 224 in 2002 before the introduction of FPE in 2003. However, the number remained almost constant from 2003- 2005 just after the introduction of FPE. On the inception of FPE in 2003 the number of teachers stood at 239; 238 in 2004 and 2005 respectively before going up to 243 in 2006 ; and then down to 241 in 2007 and 236 in 2008 .

This number can not be enough for schools with an average of two streams per class. The average number of teachers per school in the district four years before FPE programme was 10 (1999-2002). It was the same six years after the introduction of FPE (2003-2008) despite the influx of pupil enrolment witnessed.

This kind of trend confirms the assertion by Eshiwani (1993), that the problem of teachers has been there since the missionary era when formal education was introduced. Kenya inherited an education system with an underdeveloped teaching profession which was lacking in both quality and quantity. Teacher population in Kenyan public schools has remained almost constant since the government froze the hiring of more teachers way back in 1998, following recommendation by donor-agencies, namely IMF and WB (Akala, 2002). The Kenyan government only concentrated on replacing those who leave service through natural attrition, and that lack of teachers was one of the major hindrances to the implementation of FPE (UNESCO, 2005).

Teacher inadequacy has also been appreciated by the TSC report on staffing norms of 2006 which says that there are 170,907 teachers in public primary schools against the requirement norm of 202,697 for one teacher per class at a time, and that the shortage stands at 32,000.

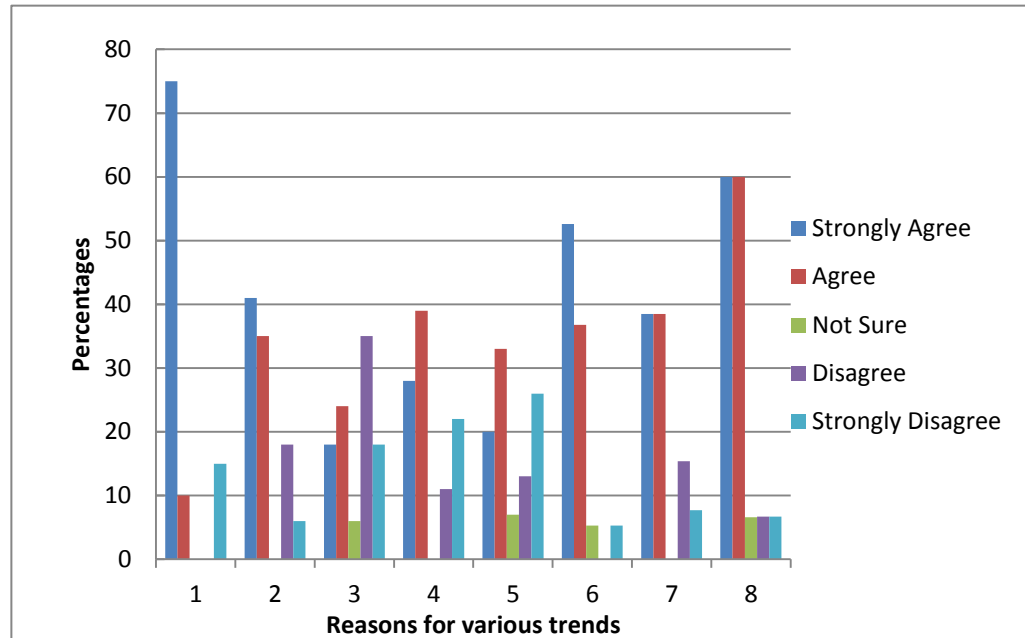
UNESCO (2005) further asserts that since the introduction of FPE, teachers have been demoralized and frustrated due to the large number of pupils. This

has made teachers to just focus on the five examinable subjects, a clear divergence from the lessons on the timetable and those actually taught (TSC, 2006). Because of this, UNESCO (2005) recommended that the government should employ more teachers to sustain the FPE programme, and should also construct more classrooms to accommodate the large number of pupils in schools.

4.2.2.2 Reasons Given by Head Teachers for Various Staffing Trends in Schools

Head Teachers in the sampled public primary schools in Kakamega South District indicated that staffing trends in their respective schools were varied. The responses on reasons for the various trends of staffing in their schools are shown in Figure 4.3 overleaf.

Figure 4.3: Reasons for Various Staffing Trends in Primary Schools



Key: 1-Freezing of Employment by TSC, 2-Replacing of Teachers who Leave Service, 3-Use of Volunteer Teachers, 4-Hiring of Teachers by SMC, 5-Deaths, 6-Transfers, 7- Voluntary Retirement,8-Mandatory Retirement

There were different staffing trends in public primary schools from 1999-2008. Forty seven point six (47.6%) per cent of the schools under study recorded a fluctuating trend while 28.6 % recorded a downward trend. Fourteen point three (14.3) % of schools had a constant trend and 9.5% recorded an upward trend.

The major reason given for a fluctuating trend was freezing of employment by TSC with which 75 % of the respondents strongly agreed and 10% agreed. This was complimented by transfers of teachers which had 52.6% of the respondents strongly agreeing and 36.8% agreeing.

Reasons given for downward trend were mandatory retirement, transfers and death with 60%, 52.6 % and 20 % strongly agreeing respectively. Schools with a constant staffing trend strongly attributed it to replacing of teachers who leave service (41%) and hiring of more teachers by School Management Committees (SMCs) (28%).

TSC (2006) agrees with some of the reasons given by respondents in this study by positing that retention of teachers at the school level is influenced by among other things, natural attrition and transfers. Attrition occurs mainly due to long term illnesses, deaths, resignation, retirement and dismissal while transfers are as a result of movement to other schools, promotion or undertaking study leave.

Generally, there was clear evidence that schools suffered teacher shortage across the board. Some of the ways of dealing with this challenge include employing more teachers to ease the shortage, engage contract teachers who would be cheaper to maintain, engaging part-time teachers, especially the unemployed trained teachers and motivating teachers in their working stations to avoid frequent transfers.

4.2.2.3 Pupil- Teacher Ratio (PTR)

The pupil- teacher ratio is an arithmetic mean and therefore a simple average used to measure teacher adequacy in learning institutions. Table 4.2 overleaf reveals an average PTR in Kakamega South District for the period 1999-2008.

Table 4.2: Average PTR in Kakamega South District

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
PTR	32:1	35:1	37:1	40:1	40:1	41:1	42:1	43:1	45:1	45:1

The research results show that there had been an upward trend in the PTR in the district in the ten year period of study (1999-2008). PTR steadily grew from 32:1 in 1999 to 45:1 in 2008.

Considering that the ideal PTR for effective teaching- learning process is 35: 1 (Koech, 1999), the above PTR is quite high, more so from the year 2001-2008. A PTR of 45:1 which was witnessed in 2007 and 2008 is higher than the national one which stood at 39: 1 (Mulama, 2003). This affirms KIPPRA findings that the number of teachers in primary schools fell by more than 3,000 from 173, 157 in 2007 to 170,059 in 2008 (KIPPRA, 2009). The ratio of pupils to teachers moved from 44:1 in 2007 to 45:1 in 2008. According to UNESCO (2000) as cited in TSC (2006), the PTR variation in Kenya ranges between nine (9) to seventy two (72) pupils per teacher and that with the increase of class size to 184 pupils per class as a result of FPE, the ratio as well increased.

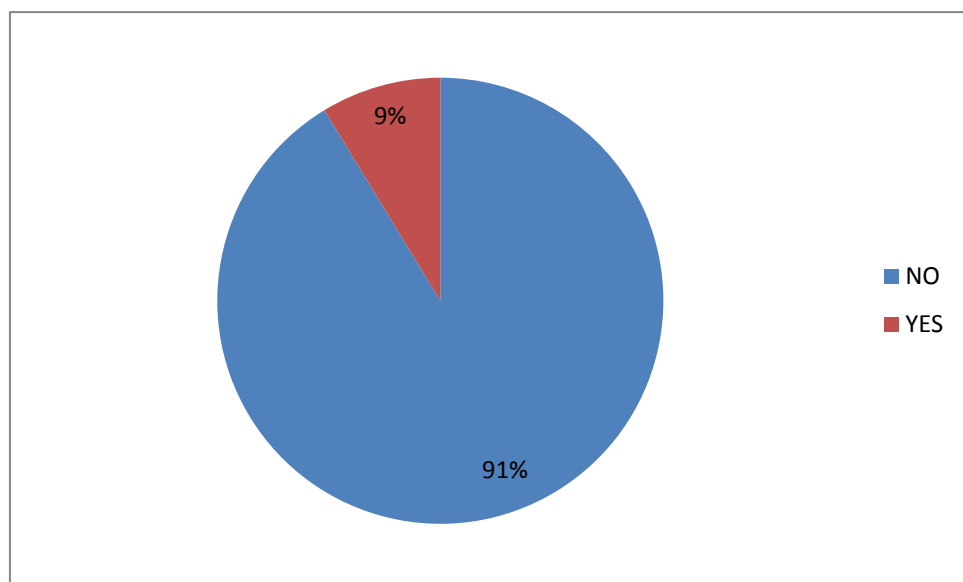
One of the major causes of the shortage of teachers is the imbalance in the distribution of teachers across regions. TSC(2006) says that although there are sufficient qualified teachers in Kenya, there are disparities in distribution both across and within regions, and attempts to redistribute is usually resisted on the grounds of keeping families together. However, despite the resistance some of

the solutions to the ever increasing PTR still lie in serious balancing act by the government and employing of more teachers by TSC (Schmidt, 2006).

4.2.2.4 Teacher Adequacy

Teacher adequacy is the number of teachers that can conveniently handle a given number of pupils. It is usually measured in terms of a ratio. Head teachers whose schools were sampled out for the study were asked to state if their respective schools had adequate number of teachers. Their responses are summarized in Figure 4.4 below.

Figure 4.4: Teacher Adequacy



Ninety one (91%) per cent of the respondents in the study said that there is a shortage of teachers in their respective schools by giving a negative response to

the question that sought to know whether their schools had enough teachers to effectively handle the number of learners they had. Only 9% of the respondents said that their schools had adequate teachers.

Fifty five point six (55.6%) per cent of those who cited lack of adequate teachers suggested that the solution lies in the hiring of more teachers by the government's employing agent, TSC; while 22.2% said that School Management Committees(SMCs) should be empowered to hire more teachers. Fourteen point eight (14.8%) per cent of the respondents said that the solution of teacher shortage lies in the balancing of the existing staff from areas where they are overstaffed to understaffed regions. Others sited teacher internship and usage of volunteer teachers as other possible solutions. They each received 3.7% response.

TSC (2006) asserts that in primary schools the norm requires that there should be one teacher for a class of 50 pupils, and that a minimum class size to qualify for a TSC teacher should be at least 25 pupils, while a minimum of 15 pupils is accepted in arid and semi arid regions. Going by this, then the study area with an average school enrolment of 473 pupils and an average class enrolment of 59 per school should have at least 20 teachers and above, since the head teacher and his/ her deputy usually have lesser work load (TSC, 2006).

From these facts, the researcher therefore concurs with UNESCO (2005) which suggests that the government should recruit and deploy more teachers in schools as a remedy to the problem of teacher inadequacy.

One of the ways and means of ensuring this is by employing projection methods such as those suggested by Arnold and Bowman (1965). The duo says that the population of age going children in the country should be projected several years ahead, after which the projection of PTR is also done. With those two projections then the teacher requirements can easily be established ahead in time before the situation goes out of hand.

4.2.2.5 Teachers' Profile

Teachers' profile is a collection of information on the age, gender, training, experience and related data about teachers. Table 4.3 overleaf gives information on teachers' qualifications in Kakamega South District.

Table 4.3: Teachers' Age and Qualifications in Kakamega South District

Qualification of Teachers	Age of Teachers					
	<20	21-30	31-40	41-50	51-60	Total
K.C.S.E	0	4	3	3	1	11
	0.10%	1.50%	1.20%	1.00%	0.50%	4.40%
P1	2	43	56	48	18	167
	0.70%	15.80%	20.30%	17.60%	6.50%	60.80%
ATS IV	1	15	19	18	9	62
	0.30%	5.50%	7.10%	6.50%	3.10%	22.50%
ATS III	0	1	3	2	0	6
	0.00%	0.30%	0.90%	0.70%	0.00%	2.10%
ATS II	0	3	2	2	1	8
	0.00%	1.00%	0.80%	0.70%	0.40%	3.00%
ATS I	0	4	5	4	3	16
	0.00%	1.50%	1.70%	1.60%	1.00%	5.80%
SGAT	0	1	1	1	1	4
	0.00%	0.30%	0.40%	0.50%	0.20%	1.40%
Total count	3	71	89	78	33	274
% of total	1.10%	25.90%	32.40%	27.90%	11.70%	100%

As regards the teachers' age, the results of this study show that a majority of teachers in public primary schools in Kakamega South District fell within the age bracket of 31-40 years (32.4%). This is the most productive age bracket. 27.9% of them were between 41-50 while 25.9% ranged from 21-30. A paltry 1.1% were 20 years old and below. However 11.7% of the teachers were aged between 51-60 years of age.

In terms of qualification, 60.8% of the teachers are Primary Teacher I (P1) holders, 22.5% are Approved Teacher Status IV (ATS IV), 2.1% ATS III, 3% ATS II and 5.8% ATS I. 1.4% are Senior Graduate Approved Teachers

(SGAT). However, 4.4% of the teachers are Kenya Certificate of Secondary Education (KCSE) holders and therefore without formal training. A further investigation into the teachers' profile revealed that 89.5% are government or TSC employed, while 10.5% are employed by respective School Management Committees (SMCs).

According to Bogonko (1992), for quality education to evolve and be sustained, the question of teachers, especially as regards to their experience and commitment, is a central factor. Teachers whose age range between 31- 60 can be said to be experienced. In this study they contribute 72% of the total number of teachers. However, teachers aged between 51-60 form a significant proportion of the workforce nearing retirement and therefore their performance is likely to be jeopardized. The degree of their commitment can not be high though they are highly experienced. There is therefore need with time to gradually employ more young teachers to take up their positions upon retirement.

As far as qualification is concerned, majority of the teachers are professionally trained, and therefore expected to perform their roles effectively if their working environment is favourable. However, although the number of teachers who are KCSE holders is small, it is worrying. Again those teachers employed by SMCs can not give their best. One reason for this scenario is that SMCs generally offer very little or nothing in terms of motivating such staff. According to UNESCO (2000), emotionally secure, competent and committed

teachers are one of the most important assets for qualitative education in the future.

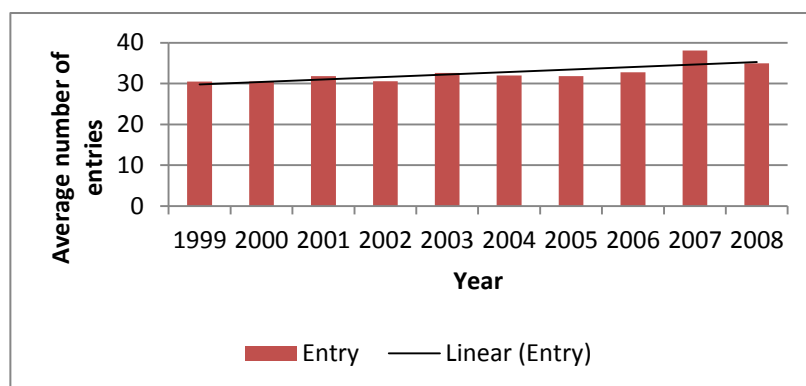
4.2.3 Research Question 3

Teacher effectiveness in Kakamega South District during the period 1999-2008 was measured by eliciting information on pupils' performance. The specific areas investigated were the number of candidates enrolled for KCPE per school and their performance.

4.2.3.1 Average Entries for KCPE

The researcher was interested in establishing the average number of candidates enrolled for the national examination, KCPE, per school for the period under study. Figure 4.5 below gives the average entry of pupils for the examination class (standard eight) for the period 1999-2008.

Figure 4.5: Average Number of KCPE Candidates in Kakamega South District from 1999-2008

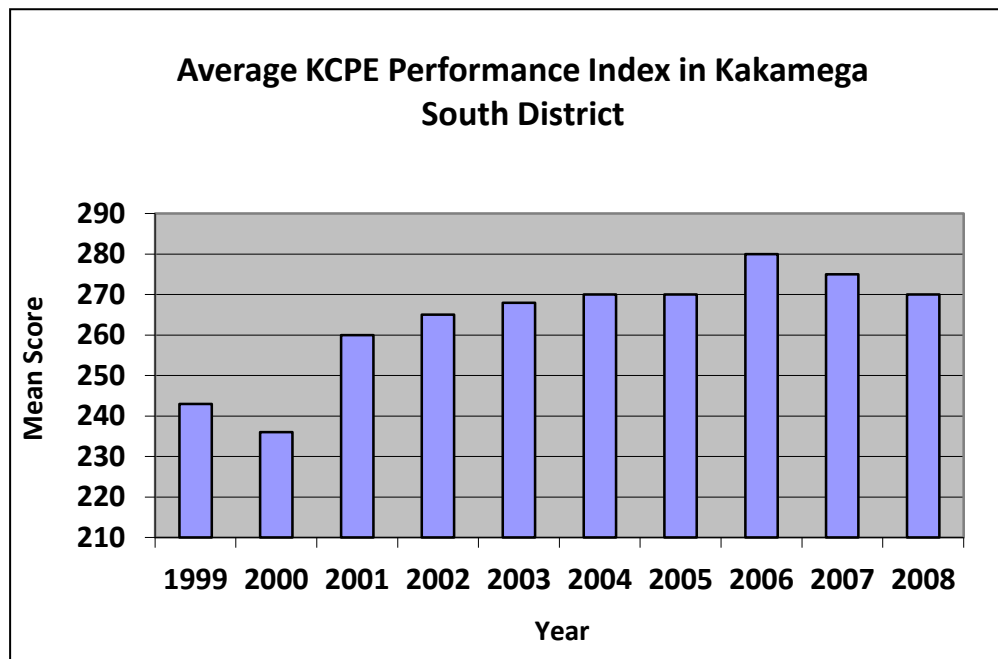


From this figure, it is clear that the average number of candidates per school enrolled for KCPE in Kakamega South District was lower in the years preceding the introduction of FPE. They were 31 in 1999, 30 in 2000, 32 in 2001 and 30 in 2002. However; the number steadily increased five years after FPE had taken effect. For instance, they were 32 in 2003, 30 in 2004 and 2005, 33 in 2006 and 38 in 2007. A drop was however recorded in 2008 with only 35 candidates being registered. This increase means that the introduction of FPE had a direct positive impact on enrolment in public primary schools.

4.2.3.2 Pupils' Average Performance Index

Performance by pupils in KCPE for the sampled schools for the period under study was sought. Figure 4.6 below reveals a summary of this performance.

Figure 4.6: Average KCPE Performance Index in Kakamega South District



The figure on the previous page shows the mean scores in KCPE in Kakamega South District four years before and six years after FPE was introduced in Kenya. The mean score for the first two years (1999 and 2000) was calculated out of a possible total of 700 marks, while for the subsequent years it was calculated out of a possible 500 marks due to reduction in the number of examinable subjects. However, for the sake of uniformity in presenting the findings and analysis of this study, the mean score for 1999 and 2000 was converted from 700 to 500.

In 1999 and 2000, the performance was below average thus 243 and 236 respectively. The mean score improved in the following next two years preceding the introduction of FPE, thus 260 and 265 out of a possible mark of 500. It is of paramount importance to note that although there was reduction in the number of teachers and increase in the number of KCPE candidates in Kakamega South District in 2001 and 2002, a positive improvement in the mean score was recorded during this period. This means that so many other factors come into play in determining the performance of candidates in national examinations, the Pupil Teacher Ratio (PTR) notwithstanding. They include the level of teacher education, teacher experience, remuneration of teachers and financial expenditure per pupil (UNESCO, 2000). This study, for instance, has revealed that 72% of the teachers' age in Kakamega South District range from 31-60 and therefore experienced. Again, in an educational organization, there may be not enough material and human resources necessary for achievement of their goals. However, its effectiveness will still be judged by the extent to

which the organization achieves its goals, acquires the necessary material and human resources, provides congenial organizational climate and meets the expectations of the society within which it is established (Okumbe, 1998:9)

The performance in KCPE in Kakamega South District for the period after the introduction of FPE took a fluctuating trend. Kakamega South District had a positive mean score improvement of 268 in 2003 from 265 in the preceding year. It is reasonable to conclude that an improvement in number of teachers from 224 in 2002 to 239 in 2003 was one of the reasons that contributed to KCPE improvement. In 2004, the district mean score slightly improved to 270 although the teacher population slightly reduced. This performance can be attributed to a reduction in the candidature from 32 to 30. The district maintained her KCPE mean score in 2005 as well as the number of teachers and the number of candidates. In 2006, the mean score improved to 280. This is the time that witnessed an improvement in the number of teachers and candidates sitting KCPE. The performance dropped in 2007 and 2008 respectively when there was a reduction in the number of teachers and an increase in the number of KCPE candidates in 2007.

Comparatively, it is noticeable that the general KCPE performance in Kakamega South District was dismal before but improved after the introduction of FPE. The study has again revealed that it is not obvious that an increase in the number of candidates and a higher PTR negatively affects KCPE performance. This appears to contradict conventional opinion that an

increase in pupil enrolment and maintenance of the same number of teachers always impacts negatively on the performance of pupils in national examinations.

Although the general KCPE performance improved in Kakamega South District after the introduction of FPE, it dropped in 2007 and 2008. One reason making teachers less effective in Kakamega South District is the high number of lessons. Thirty one point seven (31.7%) per cent of the respondents had a workload of between 36-45 lessons per week while 2.3% had a workload of more than 46 lessons. Only 52.5% of the teachers had between 26-35 lessons while 13.6% had less than 25 lessons.

These results reveal that quite a number of teachers are overloaded in terms of the number of lessons since the appropriate number of lessons is 36 per week (Koech, 1999). Such overloads can not provide teachers with adequate time to give personalized attention to each pupil, to supervise class work and mark books and examinations, neither can they lesson plan and execute their plans more efficiently (Akala, 2002). It is again clear that there is an imbalance in the distribution of teachers and that is why teachers have uneven number of lessons across the district.

UNESCO (2005) states that the quality of education in the country has drastically gone down due to inadequate teachers, lack of sufficient textbooks and reduced continuous assessment tests. The writer further asserts that

teachers were neither prepared for the FPE nor the increased workload, and that even before the introduction of FPE the number of teachers was insufficient. With the introduction of FPE, teachers now have even a bigger workload as they have a large number of pupils to attend to. This has made it difficult for the teachers to give individualized attention to the pupils.

Schmidt (2006) adds that elimination of fees has resulted in perceptions of reduced educational quality, limiting the benefits of primary schooling and therefore restricting economic growth. This compromises teachers' performance and quality of education (UNESCO, 2005). If a decrease in school fees is complimented by a decrease in the quality of education then positive incentive of reduced cost was mitigated by the negative incentive of reduced quality. In other words, if less money means poorer quality, then the benefits of dropping user fees could be negligible (Schmidt, 2006).

The solution to this challenge according to UNESCO (2000) lies in the facilitation of in-servicing of teachers to improve their service to the pupils. The writer also recommends that local education officers should visit schools more frequently and organize seminars to enlighten teachers, pupils and parents on the benefits of FPE.

4.2.3.3 Practices and Policies for Better Examination Results

The question that sought to know the possible practices and policies for better examination results was responded to by head teachers. Table 4.4 below provides a summary of their responses.

Table 4.4: Practices and Policies for Better Examination Results

Practices and policies for better results	Percentages
Hiring of more teachers	34.2
Remedial teaching	12.4
In-servicing of teachers	11.6
Regular testing of pupils	10.1
Provision of material incentives for teachers	8.7
Expansion of physical facilities	8.0
Supervision of curriculum implementation	5.0
Provision of lunch at school	5.0
Educational tours	3.0
Stakeholders' meetings to discuss performance	2.0
Total	100.0

Thirty four point two (34.2 %) per cent of the respondents said that hiring more teachers had been conducted as a way of improving results while 12.4% said that remedial teaching had impacted positively on their performance. Eleven point six (11.6%) per cent of the respondents pointed at in-servicing of teachers for improved results while 10.1% attributed it to regular testing of pupils. A further 8.7% sited provision of material incentives for teachers, 8% expansion

of physical facilities; while 5% sited supervision of curriculum implementation and another 5% indicated that provision of lunch at school had led to improved KCPE performance. Educational tours contributed 3% while stakeholders' meetings to discuss performance had a paltry 2% contribution towards improvement of KCPE performance.

The most sought for practice by head teachers agree with Planning Minister Wycliffe Oparanya's assertion that new teachers have to be recruited in primary and secondary schools in the wake of the rising number of pupils at both levels (Siringi, 2009:3). These suggestions concur with those made by UNESCO. UNESCO (2005) suggested that in-servicing of teachers with an aim of equipping them with skills to handle large classes should be done, more teachers should be hired to improve the PTR and teaching-learning facilities in schools to be improved. This will enhance the quality of education.

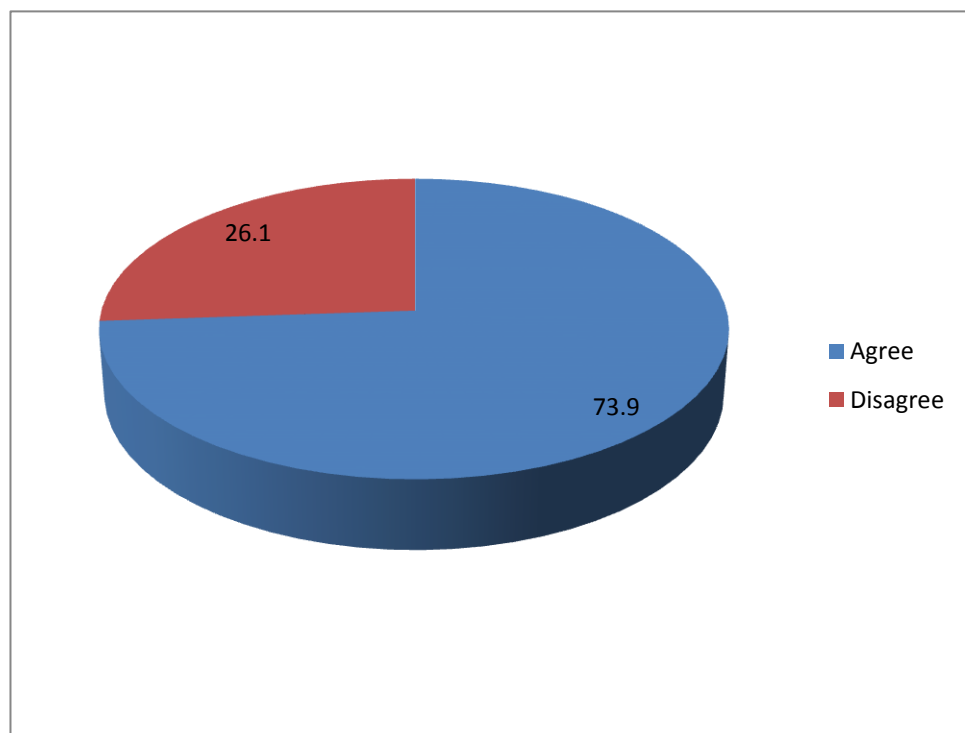
4.2.4 Research Question 4

The researcher was also interested in identifying strategies being employed by school managers in an effort to achieve teacher adequacy and effectiveness. To get information on this issue, school heads were first asked whether FPE has had a positive effect on pupil enrolment. They were then asked to select from the provided list of coping strategies employed.

4.2.4.1 Effect of FPE on Pupil Enrolment

As to whether FPE policy has had a positive effect on pupil enrolment, the head teachers' responses are contained in Figure 4.7 below.

Figure 4.7: Head Teachers' Response on Positive Effect of FPE on Pupil Enrolment



The results of this study show that the majority of the respondents, 73.9%, agree that FPE has actually had a positive effect on pupil enrolment. It has led to an increase in the number of learners. Only 26.1% of the respondents disagree. Literature review has revealed that the introduction of free education has had an effect on pupil enrolment in schools (UNESCO, 2005). These findings agree with the assertion by Schmidt (2006), that more recent data on

net and gross enrollments in Kenya do show an increase in enrolment since the inception of FPE.

4.2.4.2 Coping Strategies

About the strategies that were being adopted by school managers to achieve teacher adequacy and teacher effectiveness in the wake of increased pupil enrolment, Table 4.5 that follows provides a summary of the responses.

Table 4.5: Strategies Employed in Coping with Increase in Pupil Enrolment

Strategies Employed in Coping with Increase in Pupil Enrolment	Percentages
Employment of more teachers	34.0
Inviting voluntary trained teachers	32.0
Gathering all pupils in a available classrooms	15.0
Improving available physical facilities	7.0
Fund raising to put up learning facilities	5.0
Subdividing existing classrooms	5.0
Inviting untrained volunteer teachers	2.0

Following massive increase in pupil enrolment in public primary schools, there was the challenge of having adequate teachers. Different school managers employed different strategies in an attempt to cope with the pupil influx. Thirty four(34%) per cent of the respondents opted for employment of more teachers while 32% invited voluntary trained teachers in trying to cope with the upsurge in the number of learners. Furthermore, 15% gathered all pupils in the available classrooms, 7% improved available facilities, 5% fund-raised in order to put up

more teaching and learning facilities, another 5% sub-divided existing classrooms and 2% invited untrained volunteer teachers.

These results point towards a bigger problem of inadequate physical and human resources. It is a clear indicator of lack of prior preparation for the FPE programme, especially in terms of provision of physical facilities and teachers.

4.2.4.3 PTR as a Measure of Teacher Adequacy

The researcher also sought to know from the respondents whether Pupil-Teacher Ratio (PTR) is the best method of measuring teacher adequacy in schools. A summary of their responses is shown in Table 4.6 below.

Table 4.6: Suitability of PTR as a Measure of Teacher Adequacy

Response	Frequency (N=23)	%
Yes	17	75
No	6	25
Total	23	100

The results of the study show that 75% of primary school heads in Kakamega South District who responded to this question still favour the use of PTR as a measure of determining teacher adequacy, while only 25% were opposed to it. Those who do not support the use of PTR say the method does not put into account the actual situation on the ground. For instance, it does not consider

other equally important factors such as the total number of streams and lessons per week in a school. They therefore suggested the use of a lesson-teacher ratio (LTR) instead of the pupil- teacher ratio.

This outcome concur with other researches which falter the use of PTR as a measure of teacher adequacy saying that it is defective and unrealistic (Akala, 2002). Williams (1979) suggest that the PTR used for teacher requirements forecasting should be based on some teaching and learning strategy which specifies among other things the average size of classes and the total amount of teaching loads per teacher per school week.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter focuses on a summary of the study's findings, conclusions, recommendations and suggestions for further research based on the issues raised by this study.

5.2 Summary

The study had four crucial research questions. In this summary, the findings of the study are presented with the aim of briefly addressing each of the research questions.

5.2.1 Pupil Enrolment Trend in Public Primary Schools

The first research question was:

What were the enrolment trends in public primary schools four years before and six years after the introduction of FPE (1999-2008) in Kakamega South District?

The study found out that the FPE policy had a positive impact on enrolment. There was an upward trend in pupil enrolment in public primary schools in the entire period of study, with the highest increase being witnessed in the year 2003, immediately after the inception of FPE. This year experienced an increase of 16% .The main reason for this trend was the introduction of FPE.

This result was interpreted to indicate that most of the pupils who enrolled in school as a result of FPE were young pupils who otherwise would not have entered school.

5.2.2 Teacher Population

The second research question was:

What was the population of teachers in public primary schools four years before and six years after the introduction of FPE (1999-2008) in Kakamega South District?

The study found out that there had been a fluctuating teacher population in the area of study during the period 1999-2008. However, the number was almost constant from 2003- 2005. The average number of teachers stood at 10 per school and a PTR of 40: 1 per school in the district from 1999-2008. The main reasons for the inadequacy in the staffing included freezing of employment by TSC and transfer of teachers. Most respondents sited hiring of more teachers by either the government or school management and balancing of available teachers across board as the most effective ways of dealing with the problem of teacher inadequacy.

5.2.3 Teacher Effectiveness

The third research question was:

How effective were teachers in their teaching work four years before and six years after the introduction of FPE (1999-2008) in Kakamega South District?

The study found out that comparatively, teachers were slightly more effective in Kakamega South District after the introduction of FPE than before. However, in most instances, KCPE performance was pegged on the number of teachers and the number of registered candidates. Most head teachers pointed to teacher inadequacy and a bigger workload which came with the introduction of FPE for their non-achievement of high mean scores. The study also revealed that a significant portion of teachers were almost in the retirement age bracket. This could also be another reason for lesser teacher effectiveness witnessed in the district.

5.2.4 Coping Strategies

The fourth research question was:

What were the strategies employed by school managers to achieve teacher adequacy and teacher effectiveness in public primary schools six years after the introduction of FPE in Kakamega South District?

The study found out that FPE had led to an increased pupil enrolment in most schools. The main coping strategies were: government's programme of annual replacement of teachers who leave the service through natural attrition, inviting voluntary trained teachers and gathering all the pupils in available classrooms. However, these efforts had proved insufficient since most schools in this district still suffer from teacher inadequacy. Most head teachers still maintain that PTR is the most effective way of measuring teacher adequacy in the country, if well utilized.

5.3 Conclusions

Based on the findings of the study, a number of conclusions were drawn:

1. Free Primary Education had a positive effect on the number of pupils enrolled in public primary schools in Kakamega South District. The policy led to an influx in the number of learners, especially during the very first year of its implementation.
2. That FPE has negatively affected the adequacy of teachers and the Pupil- Teacher Ratio. This was as a result of an ever growing number of learners against a fluctuating teacher population during the period 1999-2008. The PTR of the district rose from 32:1 in 1999 to 45:1 in 2009. The scenario has negatively affected the teaching- learning process in the district, making the performance index in the national examinations to be only slightly above average.
3. That the teacher effectiveness has been to some extent compromised with the introduction of FPE. Some learners are failing in their national examinations(KCPE) , and therefore being denied chance to enhance their studies in secondary schools, hence are being subjected to abject poverty forever.
4. That the strategies being employed by school managers to deal with the issue of high pupil enrolment and inadequate numbers of teachers have not been very effective. This is because the PTR in Kakamega South District took an upward trend from 1999- 2008. A concerted effort among all the stakeholders is therefore required in order to reverse this

kind of trend for improved results in the national examinations in future.

5.4 Recommendations for Policy

Based on the study findings, the following recommendations are made:

1. In order to address the challenge posed by high PTR, the government of Kenya should hire more teachers to add up to the existing numbers. This implies reversing her current policy of freezing teacher employment and dwelling on replacing those who leave the service through natural attrition.
2. Teachers should be equitably distributed across the country. The government of Kenya, through Teachers Service Commission (TSC), should give equal chances to all schools irrespective of their settings.
3. School Management Committees (SMCs) should be financially and legally empowered through an act of parliament to hire teachers more regularly as soon as need arises. This is because they are on the ground and they can easily and quickly assess and determine the most appropriate measures needed within the shortest time possible to enhance teaching- learning process for quality education.
4. There is need to improve on the physical facilities in our public primary schools since the teaching and learning facilities available on inception of FPE were overstretched. The government in conjunction with other stakeholders should take decisive measures to alleviate the situation through refurbishment and establishment of more physical facilities.

5.5 Suggestions for Further Research

From this study, some important areas worth of research have emerged:

1. A study should also be conducted to establish the exact rate at which enrolment in public primary schools is growing so that the same could be applied to the number of teachers required at a particular time.
2. The other worthy study area is the extent to which other factors apart from FPE affect teacher adequacy. They include lack of funds to pay a bigger workforce, lack of enough trained teachers, government policies and pressure from external bodies like the IMF and World Bank, among others.
3. There is also need to determine the full costs and benefits of eliminating school fees, including a more detailed analysis of its impact on teachers' performance and individual school finances.
4. In addition to considering the impact of public education campaigns on enrolment, researchers should work to determine whether other models of abolishing fees are more effective than a sudden and sweeping reform. This is particularly pressing since policies that eliminate school fees are extremely difficult to reverse once undertaken.

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APPENDICES

APPENDIX 1

HEADTEACHERS' QUESTIONNAIRE

This study is being conducted to investigate the effect of Free Primary Education (FPE) on teacher adequacy and effectiveness. You have been identified as one of the participants in the study. Your cooperation in answering these questions will be highly appreciated. The information you provide will be handled with deserving confidentiality. Please read each question carefully then provide your answers as honestly and objectively as possible. Please tick (✓) the correct answers or write down the appropriate answer where you have not been given choices.

Background Information

1. Name of the school: _____
2. Year of establishment: _____
3. Location: (a) Province: _____
 (b) District: _____
 (c) Division: _____
 (d) Zone : _____
4. School location: () Urban
 () Rural
5. Type of school: () Mixed
 () Single sex (Specify whether boys or girls)_____
6. Number of streams per class

9. Give the number of streams per class in your school in the following years.

Grade/ Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
1										
2										
3										
4										
5										
6										
7										
8										
Total										

10. What is the pupil enrolment trend in your school?

Upward ()

Downward ()

Fluctuating ()

11. The following are suggested reasons for this kind of trend in pupil

enrolment. Tick (✓) against the ones that are applicable to your school.

a) Introduction of Free Primary Education ()

b) Accessibility of the school ()

c) Population increase ()

d) Improved teaching-learning facilities ()

e) Transfers to private & boarding schools ()

f) Early marriages ()

g) Unstable families ()

h) Mushrooming of other public schools ()

i) Others (specify) ()

SECTION 2

Teacher Population

12. Please give the total number of teachers in your school during the years shown below (Include the head teacher and the deputy).

Sex/Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Male										
Female										
TOTAL										

13. What is the staffing trend in your school from 1999-2008?

- () Upward
- () Downward
- () Constant
- () Fluctuating

14. The following are suggested reasons for the staffing trend. Considering those that apply in your school, use a tick (√) once on each reason using the rating scale shown. (1= Strongly agree, 2=Agree, 3=Not sure, 4=Disagree, 5=Strongly disagree).

Reasons for Various Staffing Trends	1	2	3	4	5
Freezing of employment by TSC					
Replacing of Teachers who leave service					
Use of Volunteer Teachers					
Hiring of more Teacher by SMC					
Deaths					
Transfers					
Voluntary retirements					
Mandatory retirements					

Others (Specify) _____

15. Has this number of teachers been enough to handle the number of pupils you have had over this period of time?

Yes ()

No ()

16. If the answer is **NO** in question 15 above, suggest possible solution(s) to the problem of teacher shortage

21. What are some of the practices and policies you have employed in your school in order to achieve better results? Tick whichever applicable.

- Hiring more teachers
 - In-servicing of teachers
 - Restricting enrolment
 - Providing material incentives to teachers
 - Expanding the physical facilities
 - Others (Specify) _____
- _____
- _____

SECTION 4

Coping strategies

22. Has FPE affected positively the number of pupils (enrolment) in your school?

Yes

No

23. If **YES** in 22 above, which steps has the school management taken to correct the situation?

- Employed more teachers
 - Invited volunteer trained teachers
 - Embraced shift learning
 -
 - Gathered all pupils in available classrooms
 - Others (Specify) _____
- _____

24. Is Pupil- Teacher Ratio the best method of measuring teacher adequacy in schools?

Yes

No

25. If **NO** in 24 above, give suggestion(s) on the best method.

APPENDIX 2

**INDIVIDUAL INTERVIEW SCHEDULE FOR DISTRICT
EDUCATION OFFICER**

1. What is the total pupil enrolment in public primary schools in your area of jurisdiction?
2. Briefly describe this pupil enrolment trend in this district for the last six years.
3. What are the possible reasons for this kind of trend?
4. What is the total number of TSC teachers in public primary schools within your area of jurisdiction?
5. Has this number of teachers been enough to handle the number of pupils in public primary schools in the last years?
6. If the answer is NO, suggest possible solution(s) to the problem of teacher shortage.
7. Give the performance index in terms of mean score for the district in K.C.P.E in the last ten years.

APPENDIX 3

OBSERVATION SCHEDULE

1. What is the number of streams in the school?
2. What is the number of pupils present in Class 8?
3. Were some classes going untaught by the time the researcher visited the school?
4. How frequent are the pupils' notebooks checked by the teachers?
5. How many compositions in English and Kiswahili are given to Class 8 pupils every month?
6. Is there evidence of one to one contact between teachers and pupils on matters related to academic guidance and counseling?
7. Do teachers and pupils attend to Physical Education lessons?