



ANALYSIS OF FACTORS THAT LEAD TO POOR PERFORMANCE IN KENYA CERTIFICATE OF SECONDARY EXAMINATION IN EMBU DISTRICT IN KENYA

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Abstract

This study was conceived on realization that day secondary schools performed below par in Kenya Certificate of Secondary Education in Embu District. It set to find out factors affecting performance in Kenya Certificate of Secondary Education in day secondary schools in Embu District of Eastern Province, Kenya. The input – output relationship or Education Production Function was used. The researcher used stratified random sampling while questionnaires were used to collect data. Data was analysed using descriptive statistics, multiple correlation and regression analysis. The SPSS statistical package was used to determine correlation and regression results. The factors which may affect performance in day secondary schools in the District include inter – alia unfavourable home environments and family backgrounds, which work negatively for students as they pursue their reading, lack of reading materials, chores at home, poor lighting, bad company, lack of proper accommodation, chronic absenteeism emanating from lack of school fees, admission of weak students at form one entry, inadequate instructional materials and physical facilities. The study makes far reaching recommendations to arrest the factors which affect performance of day secondary schools in Embu District. Among recommendations were that head teachers should as far as possible desist from sending students home for fees.

Key Words: Education, Performance, Examinations, Schools

1.0 Introduction

A student's performance in any examination is dependent on many variables. Such variables include the type of school and its facilities, the qualification of teachers, the students' academic background, the environment from which they come from, the type of leadership provided by head teachers and their qualifications and parentage. Year after year results of the Kenya Certificate of Secondary Education (K.C.S.E) in Kenya generally

and particularly in Embu District reveal that boarding schools perform better in national examinations than day secondary schools. This study will attempt to find out factors which influence performance in day secondary schools in Embu District and to recommend ways of improving such performance. It is apparent that students in boarding secondary schools continue to perform better than students in day secondary schools in K.C.S.E in Embu District.





The purpose of the study was to investigate factors which affect performance in K.C.S.E in day secondary schools in Embu District with a view to suggesting ways for better performance. By providing an objective view on how to improve the performance, the study provided reasons for the government and communities to provide more learning and teaching materials to improve performance in day secondary education as it is in boarding schools. The study had the following objectives: To find out how teachers' qualifications affect the performance of K.C.S.E in day secondary schools in Embu District; To establish the relationship between the qualifications of head teachers and performance in K.C.S.E in Embu District; To find out how home environments affect performance of students in K.C.S.E in Embu District; To determine the relationship between the K.C.P.E score and subsequent performance in K.C.S.E of students admission score at form I in performance of K.C.S.E in day secondary schools in Embu District and to find out to what extent Parents Teachers Associations (PTAs) contribute to performance in K.C.S.E in day secondary schools in Embu District.

2.0 Methodology

The study used ex – post facto design whereby the factors which seemed to be associated with certain occurrences, conditions or types of behaviour were studied. Since it is impracticable to arrange occurrences, an analysis of what actually happens is the only available means to study causation. Thus using the method of descriptive research, the relative importance of these factors were investigated and solutions determined.

The study was done in Embu District of Eastern Province in Kenya. There are five educational divisions namely Central, Runyenjes, Manyatta, Nembure and Kyeni. There are seventy eight secondary schools in Embu District which offer examination at form four. Five of them are private secondary schools, twenty seven are boarding secondary schools and forty six are day secondary schools (Source District Education Office Embu, Feb 2008). The study covered day secondary schools which offered K.C.S.E in Embu District.

All the schools targeted for research were the 46 day mixed secondary schools. Another aspect of the secondary schools in Embu is that except for the private secondary school, all the other secondary schools are either sponsored by the Catholic church, the Anglican church, the Salvation Army in the case of S-A. Kyeni – and District Education Board Schools (DEB) for example DEB Kairuri mixed secondary school. Other targets included the District Education Officer, the Zonal Quality Assurance Officer and the Divisional Quality Assurance Officer.

According to Cooper (1998) how large a sample should be is a function of the variation in the population parameters under study and the estimating precision needed by the researcher. Based on this guideline the researcher sought information from a total of eighteen samples out of a population of forty six. To be able to select the samples, the researcher used proportional stratified random sampling. There are five Educational Divisions with a total number of forty six mixed day secondary schools.

The samples of schools selected for the sample were randomly selected from each division. The simple random sampling involved assigning each school a number on a piece of paper and putting them in a container from where the required number was picked. The number of school heads of the schools sampled formed the sample for head teachers, students were sampled from the fourth form class teachers and subject teachers. This assured each school was appropriately represented. The simple random sampling was used. Eighteen schools out of the forty six were sampled for the study. From each education division, three schools plus an extra three from the divisions with more schools providing one each. The head teachers of the eighteen schools represented the head teachers' samples who were the respondents to the head teachers' questionnaire.

The researcher sampled five hundred and forty (540) from the eighteen schools derived from the current fourth form using PP – Probability Proportionate to size in this case the size of the classes. If a class held forty students, this represented about 39.14% of the population. Simple random sampling was used to sample





teacher respondents from teachers who taught the fourth form class. The researcher used one hundred and twenty teachers as a representative sample. Head teachers, students and their teachers formed a core group in this study because they are key players in the process of learning and teaching. Whereas others contribute in one way or another to this process, their role is not critical.

The researcher developed research instruments which were a mixture of open and closed questionnaire for the head teachers, teachers and students. The researcher used both primary and secondary data collection methods, held in depth discussions and carried out unstructured interviews and observations. Three questionnaires were used to collect primary data while the District Education Officers (D.E.Os) office was used as secondary data. All secondary data used in the research was obtained from the District Education Office. Such data included the number of schools, the number of teachers, number of students, performance results in Kenya Certificate of Secondary Education in secondary schools and any relevant information obtained from discussion with officers and unstructured interviews. There are many day secondary schools which are opening up or have recently opened up in primary school compounds cater for K.C.P.E graduates because of the costs and limited space in boarding secondary schools. Head teachers were required to describe their schools as regarded general infrastructure.

The questionnaire to teachers sought to know their qualifications, experience, and availability of learning and teaching resources in their schools and some of the home environmental problems around their schools. The second was issued to head teachers of day secondary schools and sought to find out factors of school quality. It was issued to head teachers of the sampled schools. It sought to find out the number of students who attained C+ and above and were eligible for university admission in the years 2004, 2005 and 2006. In addition information on teachers' qualifications and experience, physical facilities and the role of Parents Teachers Associations on school development and general management was sought because it affected performance of K.C.S.E in Embu District. Parents Teachers Association

(PTSS) are a source of finance through planning for such finances to meet costs of desirables.

The third questionnaire was issued to students. It sought information on home environmental factors which affect their academic performance, the activities they were involved in before reporting to school each day and after school, which factors contributed to the negative performance of day secondary schools. Such factors included their engagements and chores performed at home and which did not positively contribute to good performance.

The researcher also used unstructured interviews and in – depth discussions with the head teachers. This informal approach created a free atmosphere which encouraged complete and frank responses from the respondents. Such discussions were conducted with education authorities for example, the District Education Officer (DEO), the Zonal Quality Assurance Officer (ZQAO) and the Divisional Quality Assurance Officer (DQAO) from whom useful information was obtained. The researcher in the process also observed the school plant on general infrastructure of the school in consultation with the relevant authorities like school head teacher. This helped informed opinion on facilities.

After issuing the research instruments, the respondents were given ample time in which to study and answer the questions accordingly. The researcher ascertained that the contents of the questionnaires were clearly explained to the respondents to ensure clarity in their answers. He also assured the head teachers, teachers and students of confidentiality and anonymity in reporting the finding of the study.

Data was analysed using descriptive statistics and the linear multiple correlation method. The researcher examined the completed questionnaire. The information for each item on the questionnaire was processed and reported through descriptive narrative. This was accomplished by use of frequencies means of calculating percentages and tabulating them appropriately. Further multiple regression analysis was used to show the individual effect each independent variable had on the dependent variable. This enabled to explore the





strength of the relationship between several independent variables and one dependent variable. According to Borg (1998) multiple regression analysis has the relationships among a large number of variables in a single study.

3.0 Background of the Study

At independence in 1963, the government of Kenya recognised education as a basis to improve the lot of Africans who have been neglected by the colonial education policies. It also recognised education as a human right and a powerful tool to prepare and produce a human resource for the purpose of developing the nation's economy and laying the foundation of the newly independent country. To succeed, the government had to craft policies in education to act as a vehicle and tool for economic development. Thus a heavy investment in education would ensure production of human capital both for personal growth and as a key to economic growth Sessional Paper 1, 2005.

The government in its quest to redefine education policy and to lay a foundation for the future government programmes which would enhance the growth of a literate population and improve on the colonial approach to education formed the Ominde Commission (1964). Besides laying the foundation, the Ominde Commission stipulated among other issues the need to bring to school all school age going children from age three to five years; the expansion of primary schools; opening up and encouraging the building of Harambee schools with the assistance of the government working with the local communities; the provision of free education at primary level and to end racial segregation in schools. The Ominde Commission also proposed an education system that would foster National Unity and the creation of human capital for national development. Session Paper No. 10 of 1965 on African Socialism and its Application to Planning in Kenya formally adopted the Ominde report.

The report of the National Committee on Education Objectives and Policies (The Gachathi Report, 1976) focused on redefining Kenya's Educational policies and objectives, giving consideration to national unity, economic, social and cultural

aspirations of the people of Kenya. It resulted in government support for Harambee schools. The policies enabled the rapid expansion of the education system in Kenya. Many Harambee secondary schools were opened up by parents with government supplying teachers and parents subsidizing on provision of necessary infrastructure. These day secondary schools were opened alongside boarding secondary schools. Demand and clamour for secondary education in the early years of independence was very high. Court (1974) observed that perhaps the outstanding factor about education in Kenya has been that everyone has wanted it more than any other thing.

The reports of the Presidential Working Party on Education and Manpower Training for the Next Decade and Beyond (The Kamunge Report, 1988) focussed on improving education financing, quality and relevance. The government scheme for the provision of instructional materials through the National Text Book scheme was inefficient and therefore affected quality of teaching and learning. By this time, enrolment in secondary education had risen from 30,000 students in 1963 to over 862,907 in year 2002. The number of public secondary schools had also increased from 151 at independence to 3,661 in 2004. Based on available records of 2003, 2.8 million boys and girls aged between 14 and 17 years who should have been in secondary were not enrolled. Policy measures were therefore required to address the poor access to secondary education as a way of supporting the country's overall development goals to meet and address the challenges of the 21st Century (Sessional paper No.1,2005) on policy framework for education training and Research. Hence the need to encourage the expansion of secondary schools and monitor their performance.

It is against this background that expansion of day secondary schools has been rapid. One major factor about day schools is that they are cheaper to run and maintain. Sessional Paper No .6 of 1988 estimated that the enrolment in secondary schools would increase to a million plus students by the year 2000. This was a projection derived from a rapidly increasing population and the government's commitment to make education accessible to all Kenyans and the pressing demand for educated and trained manpower for the labour market. The





expansion was made possible by the cooperation of the general public and the government. The assistance by development partners such as United States AID for International Development (USAID), Organisation of Petroleum Exporting Countries (OPEC), International Monetary Fund (I.M.F) and the World Bank has also been phenomenal. The government's commitments to increase accessibility to education is evidenced by allocation of more than 30% of the country's total budget in the financial year 2001 – 2002 to the education sector.

Kenya has a problem of secondary school space. Over 250,000 Std. VIII graduates miss form one places every year and the number is on the rise. An exodus to Uganda every year is now a common phenomenon in search of form one places and more recently university education (East African Standard, 30th May, 2001). There is need therefore to expand secondary schools and to open new ones. It is attendant that this expansion should also go alongside the realization of quality. The quest for quality will be achieved by the provision of trained teachers, learning resources, adequate facilities and good leadership among other variables. These will enhance the performance of day schools in Kenya Certificate of Secondary Education (K.C.S.E) in Embu District and the country as a whole.

Considering costs of education at secondary level, World Bank (1988), recommended a transition from a system of boarding schools to one of day schools. This was hoped to reduce both the capital and recurrent expenditure on secondary school education. Further to this, World Bank (1988) observed that government expenditure per student is much higher in boarding secondary schools than in day secondary schools.

Sessional Paper No. 6 of 1988 observes that the development and maintenance of physical facilities in secondary schools by communities, parents and sponsors should continue to be encouraged. Sessional Paper No. 1 of 2005 on Policy Framework for Educational Training and Research emphasises the same policy. Their contribution is paramount as one of the means of expanding and maintaining quality and relevance of secondary school education. The report of the same Sessional Paper also noted that day secondary schools are

cheaper to develop and maintain. It proposed that communities and parents should be encouraged to develop day secondary schools, provide them with adequate facilities and equipment to enable them to maintain high standards of teaching and learning. The establishment of such day schools is a more cost – effective way of providing and expanding secondary education. Day schools will reduce parental and community burden and enable the nation to expand accessibility to secondary education. Sessional Paper No. 6 of 1988 further recommended that day secondary schools should be established within reasonable walking distances.

Finally, recent government policy on free and universal education and subsidizing of secondary school fees has occasioned the need to open more day secondary schools and expanding those already existing. It is important to address the performance of outputs in all schools especially day secondary schools which currently hold large population of students. In Embu District there are seventy eight secondary schools out of which forty six are day secondary schools (DEOs office). Results obtained from records of performance during the years 2004, 2005 and 2006 indicate that day secondary schools have persistently produced poor results compared to boarding schools. During the same period only one day secondary school – Itabua day mixed secondary school has featured in the 1st ten schools ranked No. 4, with a mean score of 7.6863 in 2004; No. 4 with a mean score of 7.4909 in 2005 and No. 8 with a mean score of 7.0714 in 2006. During the same period, the last ten schools have been day secondary schools.

4.0 Discussion and Analysis of the Findings

4.1 Questionnaire Return Rate

The questionnaire for students was administered to 540 students and covered strategic areas such as student's home environmental factors affecting their performance, their daily routines and amenities which affected their Kenya Certificate of Secondary Education performance. Out of the number of questionnaires issued, 430 were returned representing 70.1% which formed the basis of the analysis. The questionnaire for teachers was





administered to 120 teachers and sought to find out among other aspects their qualifications and experiences, the availability of learning and teaching resources and their opinion on what should be done to improve Kenya Certificate of Secondary Education performance in day secondary schools in Embu District. A very high return rate 88% was achieved with 112 questionnaires availed for analysis.

The questionnaire for head teachers touched on school Kenya Certificate of Secondary Education performance, University admissions in 2004, 2005 and 2006, student's admission scores, teachers' qualifications and experiences. The questionnaire return rate for head teachers was 100% representing all the eighteen schools they headed. The researcher held unscheduled and unstructured interviews with all the head teachers on various matters and issues which could be used to improve Kenya Certificate of Secondary Education performance in Embu District and which way forward. These interviews solicited very useful information in addition to their questionnaire responses.

4.2 Information from Students

It is common practice for head teachers in this country to send students home from school for various reasons. When this happens they miss valuable learning time. This adds to other negative factors which contribute to their poor performance in Kenya Certificate of Secondary Education. When students were asked to list the factors which affected their performance chronic absenteeism from school because of fee balances had the highest percentage at (35.8%), inadequate facilities followed closely at (29.83). the two issues are a big drawback to performance by students in day secondary schools in the District. Other reasons they gave included their own indiscipline at (11.93%), laxity for both teachers and students at (8.6%) and indiscipline resulting from home environments at (7.9%).

During the last twenty years or so, Embu District has experienced a rare total decline in agricultural production. The District has no other resources except agriculture. The death of the coffee industry was a big blow to earnings which were largely used

for education development since independence days. It becomes extremely difficult except for working parents and guardians to afford fees and other financial requirements to keep schools running. Head teachers have had no alternatives but to send students home to enable schools keep afloat.

According to the students some of the positive factors which could enhance their performance included among others; not being sent away home to collect fee balances at (32.40%), the provision of qualified and experienced teachers was another important issue at (25.92%) followed by good rapport among and between teachers, students and parents respectively at (18.5%). This calls for an effective administration process from head teachers, hence the need to provide qualified and experienced leadership.

Only (13.95%) of students have access to electricity such as can be used for studying effectively after school. The majority of students used crude methods of lighting. This was because electricity provision in Embu District has been wanting. However, the current government policy to provide rural electrification will have a significant impact in the performance of Kenya Certificate of Secondary Education as time goes by since most people have shown remarkable interest to tap electricity.

An examination on item related to day students activities at home indicated that they had little time for school work. Some of the activities that they engaged and that impacted negatively on their performance in Kenya Certificate of Secondary Education included working for pittances to supplement the family income, herding cattle, general cleaning while a small number idled. Weeks (1963) found out that chores expected of a day student by guardians and parents are often excessive to an extent of being downright exploitation. This does not help in improving performance at national examinations or any other examination.

Other problems day students went through included lack of reference and reading materials in their relatively poor homes and backgrounds. Many parents cannot afford text books and supplementary





materials to assist them in their studies. Some schools do not have enough supplies of any one set item for the satisfaction of students reading so that the poor students suffered both at home and in school. Coupled with other problems, such as poor lighting systems, interference, noise pollution in their environments and such other pecuniaries like hunger, lack of reading company and societal attitudes, all these made it extremely difficult for day students to excel in the Kenya Certificate of Secondary Education.

In addition to the many problems day secondary school students go through, sources of their lunch also affected their performance. A hungry tired student cannot be expected to concentrate in class work and even in the games field in an afternoon. Sources of students lunch clearly is a problem which will need to be tackled in order to help students cope with the afternoon timetable at required levels. Student's indicated how much their suffering is. A high percentage returns home for a lunch at (29.6%). A staggering (49.44%) do not take lunch at all and skip it altogether, while a regrettable (1.9%) are provided lunch by their schools. Those who bring whatever character of lunch are a meagre (10.6%). This finding showed clearly that the food problem which definitely emanates from home backgrounds and environments and all accompanying problems related to them largely contributed to the poor performance of day secondary schools on Kenya Certificate of Secondary Education in Embu District. The fact that half of the respondents did not partake to any lunch at all spells a bad premise to any worthy performance.

The questionnaire for students and their very honest and frank responses described a country side which is replete with problems of poverty at massive levels. It is this poverty which contributes to poor dietary practices, lack of proper housing equipped with basic facilities and which can offer a conducive learning atmosphere, reading facilities, habitable homes and generally encourages the learning process. This poverty situation also allows for drop out rates lower levels in school thus creating an idle youth and which becomes bad company to the lucky few who remain in school.

Students have had to seek accommodation with relatives and friends in areas where the schools exist. This set up results to students not getting a proper diet they probably would have gotten in their parents home. It also contributes to them developing bad company mates because they are not closely looked after by the people they stay with, and the results is that they experience a hostile environment.

4.3 Information derived from Teachers

As indicated earlier the questionnaire for teachers had a very high return rate. It involved 120 teachers of whom 112 submitted back their completed responses on issues and situations they were requested to respond to. Most teachers were trained graduates with a percentage of 54.46%, trained diploma teachers stood at 26.78%, trained post graduates at 1.79% totalling to 83.13%. The remaining percentage of 16.87% comprises of untrained teachers but who have undergone university education. They were mainly deployed to teach sciences and technical subjects.

The term trained teachers here is used to mean those teachers who have been inducted to the teaching profession by being taught at their levels in education and teaching methodology. Apparently the graduate out put from the universities is very high yet there are not ready jobs in the market for them. They end up taking what is available even when it is clear they may not measure up to expectations.

Majority of the teachers fell into the category of 5 – 10 years of teaching experience. Those who had taught between 11 – 15 years and above are on senior grades and were either placed as heads of departments, or deputies or held other positions of responsibilities in their schools. The 1 – 4 years group were mostly the untrained graduates who have sought to teach while waiting for either to decide to go back for a teaching diploma or venture into other pastures.

Teachers were of the opinion that given the correct and adequate requirements, they would do better. They were going through hard times because of lack of instructional materials or resources. These two contributed heavily to poor performance in





Kenya Certificate of Secondary Education in day secondary schools in Embu District. The parents did not assist much either. They sent their children to school and the teachers were left on their own. This is an area requiring close attention. About forty percent of the teachers who cited the inadequacy of teaching aids or resources were teaching sciences. The poverty index of the majority of the percentage and the schools does not improve the situation.

The comprehensive nature of the 8 – 4 – 4 education curriculum demands that teachers are properly equipped both in theory and applied knowledge of the subjects they teach, more so the science subjects. Without teaching aids and learning resources and necessary materials teachers may need a lot of in – servicing to give them fresh ideas on how to handle new conflicts. As Kathuri (1986) observes, poorly in – serviced teachers feel inadequate and threatened by new innovations hence the need for these institutions and perhaps the Ministry of Education should supplement these activities without demanding the poor teachers to pay for them.

Teachers also experience certain problems which are congruent to those faced by their students. None of the day secondary schools provided any kind of housing. All the teachers including their heads are commuters. A few of them lived in rented rooms in market places nearer to the schools. Others walk remarkable distances to and from school translating to as much fatigue as their students go through everyday. As a result they are not able to maximise on their school work as would be expected of them had they been provided with habitable housing as found in boarding schools.

Thus the teachers in day schools in Embu District suffer from high transport costs, unpredictable weather conditions which result to their reporting to school late and others find it difficult to feed well. All these problems contribute to poor performance in Kenya Certificate of Secondary Education in day secondary schools in Embu District.

Teachers also observed that admission scores at form one were low. Some of the admitted students sometimes will not have scored half of the total

mark at Kenya Certificate of Primary Education (K.C.P.E). Such students become difficult to bring to the level of performance expectations. This besides other problems which these students may have. The main reason behind such low admission scores is explained by the fact that selection into form one is given priority to high flight secondary schools ranging from National to District level. By the time these fill up, the left overs find their way into day secondary schools.

Other factors teachers' postulated included lack of adequate facilities to enhance their teaching, inadequate learning materials and resources to the extent that some schools lacked totally in such important facilities as laboratories. Such schools would be expected to share with a boarding school that can be reached making it extremely difficult both for teachers and students. At this level it becomes difficult to even think of improvisation. Other causes the teachers volunteered included absenteeism of students from school, poor attitude of students towards education in general, lack of motivation on the part of the teachers and students as well, home environments and family backgrounds and poor leadership exhibited by some head teachers. These impact negatively on performance of Kenya Certificate of Secondary Education.

When teachers were asked to give their opinion on what they thought should be done to improve performance in Kenya Certificate of Secondary Education in Embu District, they came up with several inputs ranging from matters which affected them as teachers and those which touched on parents and their students as well. They categorically stated that parents had to show concern for their children's education as they tended to leave them entirely in the hands of teachers. The issue of poverty among parents and their general lack of involvement in the schools explain the lack of a conducive learning – teaching atmosphere in any school. They suggested that parents should participate in the affairs of the school by facilitating provisions of learning – materials, providing funds for students and teachers if possible. School heads should critically examine the issue of school fees by reducing it or channelling it in the right direction for example building teachers' houses. They also suggested that





there was need to give bursaries to extremely poor students who were good and or exempt them from paying school fees. They were agreed that admission points had to be considered along other variables in order to improve performance.

Day secondary schools in Embu District have not been performing well in the Kenya Certificate of Secondary Education. Only one day secondary school has appeared in the top ten schools in the year 2004, 2005 and 2006. The last ten in merit in the same year have been day secondary schools, in the Kenya Certificate of Secondary Education. (Embu District Education Office, 2008). Of the schools surveyed non – had attained the national average of approximately 6.5%. Indeed the District mean score in the three years was 2004 – mean score 5.0326, 2005 – mean score 5.0882, 2006 – mean score 5.6894. the District mean grades in the same year were as follows; 2004 – mean grade C, 2005 – mean grade C -, 2006 – mean grade C.

Except for one day secondary school cited above, none of the other schools sent a candidate to public universities. However, a few of them had attained a C + but were relegated by the Joints Admissions Board cut off points. The head teachers were all holders of a Bachelor of Education degree with two head teachers being post graduate, recently qualified. Thus the day secondary headship in Embu District are properly qualified and trained.

Also the majority had over ten years teaching experience with an average of eight years for all the head teachers. While the schools had teachers, there was shortage of teachers in areas of specification. The head teachers pointed out that there was a shortage of science teachers and a few language teachers.

However, this shortage is a national problem and therefore not unique in day secondary schools in Embu District. The head teachers cited this as one reason for poor performance in science subjects in day secondary schools in the District. Head teachers had little to complain about teachers' ratio except for the lack of specialisation. There were excess teachers in the art subjects who were used to double as science teachers having studied sciences at high school. Head teachers in some of the schools have also recruited, untrained graduate

BSc. Holders to alleviate the shortage of science teachers.

Like the teachers observed, head teachers complained of lack of physical facilities such as laboratories. Ideally a school should have three laboratories for teaching physics, chemistry and biology since each of the disciplines need a different set of equipment and facilities. Alternatively, a school should have two laboratories for teaching biological sciences and physical sciences. Unfortunately, for the day secondary schools studied none had any of the facilities described. However they had makeshift equipment lined up in cupboard and which the teachers 'borrow' during science lessons. When the researcher asked the head teachers how they coped with such situations when it came to practical lessons and during examinations, the answer given in all the schools was that they did their practical examinations in neighbouring equipped boarding schools. According to the head teachers this augured badly and affected students' performance in science subjects and which contributed to an overall poor performance in Kenya Certificate of Secondary Education in District.

Since home science does not require a lot of sophistications, the schools had acceptable home science rooms. Most of the schools offered home science as a subject. Although two schools offered music as a subject, none of the schools sampled had a music room. The head teachers were not keen on music as they were on agriculture which was offered as a subject in all the schools studied.

The above information indicates that day secondary schools in Embu District cannot effectively offer practical oriented subjects in line with the objectives of the 8 – 4 – 4 education system because of lack of physical facilities. This definitely affects performance at Kenya Certificate of Secondary Education.

Other areas the head teachers pointed out included lack of any meaningful library facilities. Most of the schools had the necessary textbooks although in small numbers necessitating for a book being shared by two or more students. This makes it extremely difficult for both students and teachers. Lack of necessary textbooks or lack of enough of





the same is a serious drawback because students cannot effectively learn those subjects. For any meaningful learning to take place, recommended textbooks by the Ministry of Education should be made available for both students and teachers.

Just as teachers and students pointed out, head teachers were agreeable that inadequate facilities or lack of them altogether impacted negatively on the performance of day secondary schools in Kenya Certificate of Secondary Education in Embu District. Facilities conducive to learning are mandatory if good performance will be envisaged. Head teachers also agreed with the teachers that the admission of weak students at Kenya Certificate of Primary Education is a major stumbling block which should be addressed. Other admissions of students of dubious character from other schools for whatever reason should also be checked and carefully examined before being admitted.

The head teachers identified home environmental factors and family backgrounds as being a major problem and a negative contributor to good performance in Kenya Certificate of Secondary Education. They contribute to indiscipline resulting to poor performance even when the school administration puts in place other aspects of ensuring good performance. For example, the head teachers ensured that their teachers prepared and that they checked their work accordingly to nail among teachers.

Asked to comment on parents' participation in the general welfare of the school, majority of the head teachers were agreed that parents did not take seriously matters relating to their children's education. They did not pay fees on time; those who cared to pay brought in small amounts. This made it very difficult to organise and finance necessary programmes that could improve performance in their children's work. When it came to attending Parents Teachers Associations meetings, they were usually reluctant with low turn ups attributed to fear of being reminded about their financial obligations. Parents Teachers Associations meetings are essential because they provide an opportunity for parents to talk to their children on matters related to their school work. It is notable that many of these parents had little or no time at all to discuss with their children back in

their homes, a reason cited as a contributor to poor performance by both teachers and students.

The head teachers also blamed poor attendance by students and some errant teachers as being causes of poor performance. The good thing is that all the head teachers did not complain about their line officers whom they qualified as being available for consultation where need arose. The head teachers opine that if stringent measures were put in place to curb most of the problems cited above, performances in Kenya Certificate of Secondary Education in day secondary school in Embu District receives a big boost.

4.4 Interviews with Head Teachers/ Deputies/ Q.A.S.O

After collection of the questionnaires issued to head teachers, teachers and students, the researcher caused interviews with head teachers or their deputies and Quality Assurance and Standard Officers to supplement the questionnaires. These interviews were unstructured but guided.

One of the issues which came up pertained to transfers of students from one school to another. In most cases the head teachers pointed out that after students accumulated fee balances in their present schools they sought admission in other schools more often than not with the collusion of field officers. This way they avoided paying fee balances.

The head teachers who were approached by parents seeking transfers readily accepted their requests without normal admission procedure such as producing a letter from previous schools. This way the receiving head teachers gained financially while the other lost on the deal.

Thus parents and guardians who did not care much for the welfare of their children and school played truant on fee payments.

Some teachers noted that many students who were admitted to form one in a given school never finished the four year course in the same school. These periodical movements found fourth form students who had varied backgrounds sitting for Kenya Certificate of Secondary Education





examinations in school whose teachers found difficult to cope with. This led to poor performance in Kenya Certificate of Secondary Education in quite a number of schools in Embu District.

Another problem derived from these interviews was that many parents and children themselves considered day secondary schools as low class. They compared them to the public day primary schools they had previously attended. According to the head teachers it was viewed prestigious to go to a District secondary school.

The head teachers did admit that some parents took their children to day secondary schools while they awaited an opening to a boarding secondary school. Asked by the researcher whether they would take their own children to day secondary schools, the head teachers were categorical that they would want them admitted to boarding secondary schools.

It was difficult to make day secondary school students to study at home after school. This affected their performance in the Kenya Certificate of Secondary Education. Whereas their counterparts in boarding schools can have supervised prep time by teachers this was not the case for the day students.

In their endeavour to improve Kenya Certificate of Secondary Education performance in day secondary schools, head teachers had devised measures such as early morning study periods and an extra hour after class time in the evening. Teachers were assigned supervisory duties as well as being encouraged to give extra assignments. However, these assignments were not overly effective because of the distance some students had to cover to and from school. Other methods included provision of lunch by the schools at an extra cost and because it was not made compulsory, many students who did not bring lunch went hungry. Such a measure could save time for studies before the start of the afternoon classes.

A major problem experienced by day secondary schools in Embu District was the admission to form one of weak students from the neighbouring primary schools. One of the head teachers was unable to admit any child from the immediate neighbouring primary school whose K.C.P.E

results were dismal in 2007. Day secondary schools do their admissions after national, provincial and other District boarding secondary schools have taken the cream of the best performing students in the Kenya Certificate of Primary Education. Those students who performed poorly or times failed in the K.C.P.E are then admitted for form one in day secondary schools. They were unlikely to be turned to good performers in the Kenya Certificate of Secondary Education.

Promotion for teachers in day secondary schools to positions of responsibility like head of department, deputy head teacher did not come easily. Day secondary school teachers were considered low cadre because of their working environment. This did not contribute to morale motivation. Quality Assurance and Standards Officers indicated that they had no control over who had to be promoted. There was a feeling that there was corruption and nepotism within the District as well as at provincial and national levels in these promotions. However, with a changed political environment, the publication of the Public Officers Ethics Act 2003 and the anti – corruption measures the government has put in place, it was hoped that the practice of promoting officers because they were connected or related would be minimised, discouraged or wiped out altogether.

Despite the many problems head teachers faced, they were optimistic that problems in day secondary schools in Embu District would be solved with time. Indeed this year has seen the implementation of free tuition and other peripheral payments being financed by the government. A positive sign of things to come.

4.5 Linear Multiple Correlation on How School Inputs Affected Performance

Linear multiple correlation was used to analyse the data on school inputs. This was to establish the extent to which the independent variable inputs affect the dependent variable (performance). The correlation ranges from – 1.0. to 1.0., which means a correlation can be positive or negative. A higher absolute value of correlation coefficient indicates a class relationship between the independent variable, while a small value indicates a less definite relationship.





The school inputs used in the study were teacher – pupil ration (X_1) student average admission score (X_2), head teacher qualification and experience (X_3), laboratory expenditure (X_4), instructional material supplied (X_5), teachers qualification and experience (X_6). These school inputs were used as independent variables while performance (X) was used as a dependent variable.

Using SPSS – the correlation coefficient between the independent variables and dependent variables were obtained. The equation for the regression analysis was;

$$P = a + BX_1 + CX_2 + DX_3 + EX_4 + FX_5 + GX_6 + \dots \dots \dots 4.1$$

Where P = Performance

a = A constant

B, C, D, E, F, G = Are regression coefficients

It was deduced that instructional materials supplied (X_5) and teacher qualification and experience had the highest correlation coefficient with performance (X). Both the correlation were significant at 0.001 confidence level in a one tailed test. It can further be deduced that schools which had supplied more instructional materials and had qualified and experienced teachers performed better on the national examinations.

It is indicated that the supply of instructional materials contribute heavily to good performance, hence the need for teachers especially the head teachers to create a working rapport with parents. The pivotal role Parents Teachers Association play in the running of schools be they day or boarding schools cannot be gainsaid. Together with the Board of Governors, they influence the direction to which schools take. Together they discuss matters of discipline and school development in all sectors. Head teachers are best advised to consult regularly with these bodies if they ever wish to see good performance in their schools.

The higher correlation (0.732 significant at 0.001 confidence level in a one tailed test) between instructional material supplied and performance clearly explains that day secondary schools which

supplied more instructional materials performed well in national examinations if all other variables were held constant. As mentioned earlier day secondary schools in Embu District lacked library facilities. Anything called a library in those schools was a makeshift. Supply of textbooks, exercise books and other important equipment which enhance the learning process should be given a priority if good performance in examination was desired. Their supply will definitely improve performance.

It is mentioned earlier that laboratory facilities were lacking in the day secondary schools in Embu District. This meant that these schools could not effectively offer practical oriented subjects in line with objectives of the 8 – 4 – 4 education system. Because of the high correlation between day secondary school performance and laboratory equipment, they should strive to establish working laboratories, to avoid the scenario where they go borrowing from established boarding secondary schools as earlier mentioned.

It was deduced that schools which admitted students with high marks in Kenya Certificate of Primary Education tended to perform better in the Kenya Certificate of Secondary Education. This correlation analysis concurs with the descriptive statistics on teachers and head teachers' questionnaires. There is no doubt that admission of weak students was a great contributor to poor performance in day secondary schools in Embu District.

During interviews with head teachers the admission of weak students in day secondary schools was caused by the fact that they were not allowed to select their students alongside the national, provincial and District boarding secondary schools. Day secondary schools should be allowed to select best students at K.C.P.E from nearby primary schools because they have limited catchments areas compared to boarding schools.

There was a negative correlation between teacher – pupil ration (X_1) and performance. The correlation coefficient was – 0.078. Most of the schools lacked teachers in the service subjects, languages and technical subjects as pointed out earlier. However, there was as over supply of teachers in the Liberal





arts. This disparity affected the general performance in those contributions to poor results. In some of the schools studied science teachers were overloaded resulting to ineffective teaching.

It can be that those secondary schools which supplied instructional materials and had qualified and experienced teachers attracted better students at form one admission. There was high correlation coefficient between instructional materials supplied and quality of teachers and their experience.

4.6 Multiple Regression Analysis

Multiple Regression Analysis was also used to show the individual effect of each independent variable on the dependent variable. It can also show the combined effects of a set of independent variables.

When using regression, the independent variables are correlated with dependent variables but not with each other. When two or more of the independent variables are highly correlated with each other the condition is called multi-collinearity. If the intercorrelations are as high as 0.655 among the independent variables in regression analysis then a ground of highly correlated variables should be used (Hederson, 1991).

It was deduced that the correlation between the dependent and independent variables was as high as 0.894. On the other hand, since the regression coefficient is negative it can be concluded that day secondary schools with high teacher – pupil ratio perform poorer than those with low – teacher pupil ration in national examinations.

It was concluded that one percent decrease in teacher – pupil ration will improve performance of day secondary schools in the District by 0.3640. It was further concluded that one percent increase in student average admission score in the day secondary schools will improve the performance the performance by 0.3941 and that a one percent increase in head teacher will improve the performance of day secondary schools in Embu District by 0.1174% while a another one percent increase in laboratory equipment expenditure in

day secondary schools in the District will improve the performance by 0.2048%.

One percent increase in purchase of instructional materials will improve the Kenya Certificate of Secondary Education performance in day secondary schools in the District by 0.4481% while 1% in the years of teaching experiences by teachers in day secondary schools in the District will improve the performance by 0.2021%. From the regression analysis results, equation 4.1 can be written as:

$$P = 43.745 - 0.3640X_1 + 0.3941X_2 + 0.2048X_3 + 0.4481X_4 + 0.2021X_5 \text{ ----- (4.2)}$$

The T statistics is a measure of the distance of beta from zero in a probability distribution. The Sig T (significant of t) is the probability that such deviation from zero would be due to sampling error. For example teacher – pupil ratio (X_2), the Sig T is 0.1062, which indicates that a beta this large would occur from a sampling error 1062 times out of 10,000. Residual errors in prediction. They are obtained by subtracting the actual score from the predicted score for each case.

4.7 Stepwise Regression Analysis

In a stepwise regression analysis, independent variables are added into the equation model one by one, and at each stage any variable which is already included in the model, but whose extra sum of squares (R^2) contributions had declined to a non-significant level is eliminated. Selection stops when all unused variables are non-significant and all included variables significant at 0.05 confidence level in a two tailed test.

According to the data head teachers experience was not statistically significant in the regression model at 0.05 confidence level in a two tailed test.

From the stepwise regression analysis head teachers experience and qualification were eliminated from the regression model. The elimination of head teachers qualification and experience could be explained by the fact that all head teachers from day secondary schools under the study were qualified and majority had many years of experience. Even teachers from all day





secondary schools were qualified, which means there was a little co – variation in teachers' qualification and experience in the day secondary schools in the District.

It was concluded that a one percent increase in the student average score (X_2) will improve the performance of day secondary schools in the District by 0.3740 per cent. Since the beta for instructional materials supplied (X_3) is 0.4920, 1% increase in instructional materials supplied will improve performance of day secondary schools in the District by 0.2410% since the beta for laboratory expenditure supplied is 0.2410.

5.0 Conclusion of the Study

Following a summary on the findings of this study, it is fitting to draw a general conclusion on the many factors which influenced the negative performance of day secondary school students in Embu District. Those factors which come out clearly are explained by the social and economic status of the general population of the Embu community which can best be described as poor. The poverty index thus plays a pivotal role into the poor performance in Kenya Certificate of Secondary Education in Embu District. Among notable factors were chronic absenteeism of students from school for lack of school fees, inadequate physical facilities, lack of instructional materials and resources, to the extent that laboratory equipment and library equipment were near absent and admission of weak students at form one from Kenya Certificate of Primary Education from neighbouring schools.

Because of poverty levels, home environments of the students and their family backgrounds impacted negatively on the performance. Students were not able to read effectively while at home because they lacked reading materials, they were interfered with by friends, family members, poor lighting facilities, noise pollution from neighbours functions, a lot of work at home, all these factors were found to be major problems hindering day secondary school students from studying. Similarly, other problems were bad company at home, staying long distances from school and lack of proper accommodation.

Thus it can be found that most of these factors emanate directly from poverty levels besides other variables which directly or indirectly influence performance in Kenya Certificate of Secondary Education in day secondary schools in Embu District.

Teachers and head teachers' responses to their questionnaires and the subsequent interviews which followed concurred that the above factors affected performances. They especially emphasised the point of admission of weak students. Those students who scored high marks in Kenya Certificate of Primary Education were admitted to boarding secondary schools. Boarding secondary schools had a wider catchment area than day secondary schools as day secondary schools selection was limited to nearby primary schools which more often than not recorded poor performance at K.C.P.E. Such were the students admitted to form one in those day secondary schools. Indeed the average student admission score had a high correlation with performance.

6.0 Recommendations

The following recommendations were made from the study;

Over the years school budgets are drawn from school fees by parents. The government has during the same years withdrawn financial subsidies to schools and colleges thus making parents and head teachers to organise how best to run their schools. As a result head teachers are forced to send students home for fee balances sometimes for long periods. This is because many parents cannot afford to pay fees for their children or at times act negligent. Therefore, head teachers should minimise sending of students home for school fees as chronic absenteeism of students from schools affected performance negatively in day secondary schools in Embu District. Head teachers and parents, should chart better ways financial sustenance without resulting to sending students home for fee related problems.

Environmental problems and home backgrounds are problems which can be tackled through social





and public education of parents. This can be done using administration meetings and stakeholders forums to educate parents on the importance of making these environments and backgrounds conducive to study for example, noises in the neighbourhoods come from brewing of local liquor and where young and old engage in drinking for long hours. This affects the performance of day secondary school students in Kenya Certificate of Secondary Education and also other examinations because they cannot effectively study at home. Parents should also be educated not to assign tasks and chores to their children while at home during school days because a lot of work added at home made them tired and therefore find it difficult to do their assignments on time and effectively. Parents should also be educated on the need to provide acceptable lighting facilities regardless of their poverty status. While the government has introduced bursaries to the bright and needy students and as other funds are now being used to assist poor students for example the Local Authorities Transfer Fund (LATF) and Constituency Development Fund (CDF), their misuse, mismanagement and misappropriation leave a lot to be desired. So that as many day secondary school students should benefit, the administration of these funds should be streamlined at head teacher level and source.

The Teachers Service Commission (TSC) should take austerity measures to provide specialised teachers in the science subjects as well as languages. These subjects lacked teachers and as a result contributed negatively to the performance of Kenya Certificate of Secondary Education believably not only in Embu District but generally throughout the country. The Teachers Service Commission should also as far as possible promote head teachers, deputies and heads of departments without discrimination. Many teachers complained that because they teach in day secondary schools, they were considered last when it came to promotions largely because day secondary schools did not offer them room to excel in their fields of specialisation as opposed to their counterparts in boarding secondary schools.

Education officers, more so the Quality Assurance and Standards Officers, should work closely with head teachers instead of parents as was the case to

minimise mid periods transfers of students from one school to another. Before any students transfers is authorised from one school to another it is important that their records of performance, fee balances and discipline should be examined thoroughly. This will ensure continuity of the learning process and therefore improve performance in examinations.

The role of Parents Teachers Associations should be strengthened through a legal enactment as is the role of the Board of Governors so that together they can contribute constructively to the development of their schools especially in the provision of physical infrastructure and instructional learning resources. These bodies should be able to at least put up a head teacher's house in every day secondary school in the District and indeed in the country. Teachers' houses can also be considered alongside so that teachers can use their extra time in marking students work than trying to get to and back from school making them as tired and prone to environmental problems like their students. This will impact positively on the performance of Kenya Certificate of Secondary Education for day secondary schools in Embu District.

As we close the findings and recommendations of this study it is important to appreciate that the government has introduced free education in all day secondary schools in the country the year 2008 although there are teething problems. This realization should go along way to improve performance in Kenya Certificate of Secondary Education in day secondary schools in the country and thus remove parental burden in the provision of curriculum materials. Parents Teachers Associations, Board of Governors, Sponsors and Old Students Associations should be able to work together to supplement Government efforts in this direction by providing necessary physical and learning instructional infrastructures.

References

- Appia (1979) *Cost Production Functions in Education*. A survey analysis of Secondary Education in Ogan State. Unpublished Dissertation.





University of Wisconsin.
Microfilm international.

Castle E.B (1966): *Growing up in East Africa*:
Oxford University Press, London.

Eshiwani (1984) *Factors influencing performance
among primary pupils Western Kenya*.

Kenyatta University College;
Nairobi.

Fuller B (1986) *Raising School Quality in
Developing Countries*. What Investment Boost
Learning? World Bank
Discussion Papers, Washington DC.

Fuller B (1987) *What Factors Raise Achievement
in Third World Countries*. Review of
Educational Research 57 page
225 – 292.

Fuller B (1993) *Why do Daughters Leave School in
Southern Africa? A family economy and
mothers comments*: unpublished
Manuscript, Harvard University.

Heyneman and Loxley (1983) *The effect of primary
school quality in academic achievement
across 29 High and Low income
countries*. American Journal of
Curriculum Studies Vol. 13, P
146 – 227.

Holloway B (1990): *Family Structure, Parental
Practice and High School completion*:
American Sociological review
56, pg 309 – 320.

Hunter G (1963): *Education for Developing
Region*: Allen and Irwin, London.

Hanusheck F (1989) *The impact of differential
expenditures on school performance*.
Educational Research Vol. No.
18 (1989) P 44 – 51.

Heyneman S.B and Loxley, M. (1981). *Text books
and achievements in Developing
Countries*. Journal of curriculum
studies Vol. 13 No. 13 (1981) P 146 – 227.

Jacobson P.B (1976) *The Principalship: New
perspectives*. Prentice Hall Inc. Engle Wood
Cliffs.

Jimenez and Cox, D. (1989) *The relative
effectiveness of Private and Public schools:
Evidence from two developing
countries*. Washington DC. World Bank.

Kinyanjui (1979) *The Political Economy of
Education Equality on colonial and post colonial
Kenya*. PhD dissertation
Microfilm, Harvard University.

Lockheed (1991) *Improving Primary Education in
Developing Countries*: Oxford University
Press, London.

Lockheed (1983) *Cost of an alternative form of
Second Level Education in the Philippines*.
Comparative Education Review,
(1992) 225 – 235.

Maundu J (1986); *A student Achievements in
Science and Mathematics; A case study of Extra
– Provincial, Provincial and
Harambee Secondary Schools in
Kenya*, Unpublished PhD Thesis
McGill University, Montreal.

Mwiria K (1985); *The Harambee School
Movement: A Historical Perspective*; A PhD
Dissertation. Stanford University.

Oluoch (1972) *Education Structures in Kenya*:
Jomo Kenyatta Foundation, Nairobi.

Republic of Kenya (1965) *Sessional Paper No. 10
of 1965 African Socialism and its
application to planning in Kenya*;
Government printers, Nairobi.

Republic of Kenya (1976) *The Gachathi Report.
The Report of the National Committee on
Educational Objectives and
Policies*; Government Printers, Nairobi.

Republic of Kenya, *The Kamunge Report (1988)
Entitled the report of the Presidential*





*Working Party on Education and
Manpower Training for the Next
Decade and Beyond;*
Government Printers, Nairobi.

Republic of Kenya (2005) *Sessional Paper No. 1 of
2005 on Policy Framework for
Education Training and
Research;* Government Printers, Nairobi.

Republic of Kenya (1964). *Report of the Ominde
Commission of Kenya* (Ominde Report).

Thias M and Carney M (1972); *Cost – Benefit
Analysis in Education. A case study of Kenya.*
John Hopkins Baltimore.

Weeks S. G (1963): *Report on Sociological Case
Study of Urban Day Secondary School in
London.*

World Bank (1988) *Education in Sub – Saharan
Africa;* World Bank, Washington D.C

Youdi, R. (1971) *An exploratory study of
achievement and attitudes of High school students
in Congo. An aspect of
socialization for National
Development.* A PhD
Dissertation Stanford University

