

**FACTORS INFLUENCING INTERNAL EFFICIENCY IN
PUBLIC EARLY CHILDHOOD CENTRES IN MANGA
DISTRICT, KENYA.**

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DECLARATION

This research project was my original work and has not been presented for a degree in any other university.



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DEDICATION

I dedicate this work to my loving and lovely wife Margaret Bosibori Okechi for her love for education, concern, sacrifice and patience during the project report writing. To my beloved son, Brian and daughters, Purity and Jacinta, who unfailingly provided me with emotional, intellectual and spiritual nourishment through their prayers and encouragement.

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Heartfelt thanks goes to the officials in the Ministry of Education, head teachers, ECD teachers of public ECD centres in Manga district and my colleagues in the department of educational administration and planning in the University of Nairobi for their contributions in terms of time, energy and expertise to this effort.

ABSTRACT

The purpose of the study was to examine factors influencing internal efficiency in public ECD centres in Manga district, Kenya. To achieve this, research questions of the study on teacher's training, teacher's salaries, class-size, unit costs, teaching and learning resources and educational wastage were formulated. The study adopted a descriptive survey designed to establish the factors influencing internal efficiency in public ECD centres in Manga district. The study targeted a population of 56 public ECD centres, 56 head teachers and 60 ECD teachers in Manga district out of which a sample of 48 public ECD centres, 48 head teachers and 56 teachers was selected for the study.

Data was collected using questionnaires and an observation schedule, coded and classified into major themes from which a summary report was made. Quantitative data was analyzed using descriptive statistics supported by Tables, graphs, frequency distributions and percentages. Data analyzed formed the basis for the research findings, conclusions and recommendations for the study.

The results obtained from teachers and head teachers revealed that gender parity has not been observed in the posting and promotion of head teachers in public ECD centres in Manga district; ECD programme could not be very much affected by their academic and professional qualifications; training of head teachers and ECD teachers was highly useful in enhancing their performance in management and teaching in ECD centres and teacher's salaries positively affected educational output.

The respondents further revealed that large class sizes affected the quality of educational output negatively by limiting effective communication, creating discomfort, overstretching the available resources, among other things; there was a negative relationship between unit costs and enrolment in ECD centres until a maximum point is reached after which the relationship becomes positive; teaching and learning resources were inadequate in most ECD centres in Manga district and that wastage exist in the centres in form of repetitions and drop outs.

In view of the findings the researcher recommends that new physical facilities should be build and old ones renovated to facilitate teaching and learning in public ECD centres. Teachers should be hired and paid by the government and promotions of teachers should be done fairly to ensure balancing of teachers. The government should provide free ECD programme to make the programme compulsory for the benefit of all children in Kenya. Head teachers and teachers should be sponsored to attend ECD training programmes so as to improve their teaching skills.

The researcher suggests for more research on factors influencing internal efficiency in other districts or provinces or in Kenya. Studies that will involve other respondents like parents, pupils and ministry of education officials are to be done.

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
DEO	Divisional Education Officer
EACE	East Africa Certificate of Education
ECCE	Early Childhood Care and Education
ECD	Early Childhood Development
ECE	Early Childhood Education
EFA	Education for All
FPE	Free Primary Education
GDP	Gross Domestic Product
GAP	General Administration and Planning
HIV	Human Immunodeficiency Virus
IMS	Information Management System
KAPE	Kenya Advanced primary Education.
KESSP	Kenya Education Sector Support Programme
KCE	Kenya Certificate of Education
KCPE	Kenya Certificate of Primary Education
KCSE	Kenya Certificate of Secondary Education

MDG	Millennium Development Goals
MoE	Ministry of Education
MoEST	Ministry of Education Science and Technology
NCDP	National Childhood Development Policy
NACECE	National Centre for Early childhood Education
NGO	Non Governmental Organization
OECD	Organization for Economic Cooperation and Development
RoK	Republic of Kenya
SPSS	Statistical Package for Social Sciences
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children’s Fund

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Education is regarded as the process of imparting intellectual, moral, social skills and values that are necessary for development (World Bank, 2007). Education provides people with skills, values and knowledge that help to facilitate social and economic development as well as protecting the environment {Republic of Kenya (RoK), 2007}.

International conventions and agreements on education such as the Jomtien World Conference on Education for All (1990) and the World Forum in Dakar on millennium Development Goals (2000), put a lot of emphasis on the provision of quality education (United Nations Education Scientific Cultural Organization (UNESCO, 2006a). Goal number six on Dakar Framework emphasizes on quality improvement and excellence in all sub sectors of education, from early childhood to adult education.

Goal number one on Education for All (EFA) stressed the need to expand early childhood care and developmental activities that include community interventions especially the poor, disadvantaged and disabled children (UNESCO, 2006a). Early childhood interventions can alter “trajectories” of children who are poor or are deprived of the opportunities for growth and development available to those who are more fortunate’(World Bank,2007).The interventions aims at holistic development of human

resources to ensure equity in the provision of Early Childhood Development (ECD) to achieve EFA and Millennium Development Goals (MDGs).

Studies have shown support to the international conventions on the need to expand ECD activities. Mustard (2002) indicated that investing in quality (ECD) is a “hard” investment just like infrastructure because of pecuniary and non pecuniary returns associated with the investment. Mustard further argued that poor development during early childhood years will affect key aspects of brain development which influences cognition, imagination, behavior and skills. Mustard therefore stressed on the need to invest early in childhood education to reap more returns in the future and facilitate better achievement in subsequent levels of education.

Riechi, Mbithi and Kisilu (2006) noted that pre school education has a decisive effect on how well a child learns throughout his or her life. MoE (2008a) pointed out that children who undergo Early Childhood Development and Education (ECDE) have a better academic performance, fewer drop outs and repetition because of exposure to stimulating environment of ECDE. The report further argued that girls who undergo ECDE are likely to proceed to basic and higher levels of education.

The need to expand ECD to develop human resources made the United States of America (USA) to come up with head start programmes that emphasized on social and emotional growth (Hadaad, 2002). Bwajuma (2001) noted that Britain started ECD programmes for social, emotional and cognitive development to bring about total development on her people. These countries

have put a lot of resources in the programme to ensure success of universal ECD. However, the programme is faced with challenges of financing and fragmentation (Hadaad, 2002).

The Organization for Economic Cooperation and Development (OECD) and middle income countries have turned to universal pre-primary education in order to give their children a better start of life (OECD, 2002). For example France and Netherlands have formed pre school programmes that serve all children and provides extra resources to communities with the highest concentration of disadvantaged (OECD, 2001). However, fewer amounts are allocated by these countries on Early Childhood Development (ECD) programmes as compared the portion of GDP allocated to other sectors of the economy (UNESCO, 2006a).

Kigotho (2009) argued that coverage in ECE in sub-Saharan Africa stands at 14 per cent while gross enrolment rates are less than 10 per cent. Kigotho further indicated that lowest attendance rates are children from poor and rural households showing that millions of children in Africa do not have access to ECE. Kigotho further argued that access to pre school services in sub Saharan Africa is linked to economic inequalities where children from richest 20 per cent of population are more than five times likely to access pre school services compared to their counterparts from the poorest 20 per cent.

Kenya as a signatory to recommendations of Jomtien World Conference in EFA and the World Forum in Dakar has made a tremendous development in the expansion and provision of quality education to all. The government of

Kenya has put measures to improve the performance of ECD programme by establishing guidelines and standards of management and curriculum development; establishing National Centre for Early Childhood Education (NACECE) and District Centres for Early Childhood Education (DICECE) to oversee the operations of the ECD programme (RoK, 2007). This was part of realization that ECD lays a strong foundation for future social, educational and physiological growth (MoE, 2007)

To show commitment to EFA and MDG goals, the government developed National Early Childhood Development (NECD) policy and Early Childhood Development Service Guidelines for Kenya whose aim is to mobilize community participation to realize 100 per cent enrollment in ECD (MoE, 2007). However, the report further indicates that only 40 per cent of eligible children are enrolled in ECD nationally with highest figures registered in urban centres while rural records have less than 20 per cent enrollment. This shows that about 80 per cent of rural eligible children do not have access to ECD activities in Kenya and about 60 per cent of eligible children in Kenya are not participating in the ECD programme.

The economic survey of 2008 indicated that the government of Kenya allocates less than one per cent of its budgetary recurrent expenditure on education to ECD. The survey further indicated that 0.06 per cent, 0.05 per cent and 0.04 per cent of the recurrent expenditures were allocated to ECD for the period 2005/2006, 2006/2007, and 2007/2008 respectively as compared to 9.2 per cent, 12.9 per cent and 14.61 per cent for the same periods respectively allocated to primary education and 3.3 per cent, 4.1 per cent and 6.4 per cent

allocated to secondary sub-sector for the same periods respectively (RoK, 2008a). This shows less attention put towards the programme as compared to other sub-sectors of education such as primary and secondary.

Achoka, Odebero and Maiyo (2007) pointed out that 70 per cent of ECD finance is contributed by parents and local authorities, less than one per cent by the government while the rest is supported by sponsors such as churches, non- governmental organizations (NGOs), welfare associations and private enterprises. The heavy burden of financing ECD programme is shouldered by parents whose existence is being hampered by poverty (Ngaruiya, 2006).

The sessional paper No.1, 2005 on policy framework on Education, Training and Research noted that high cost of education and poverty among other reasons explains why Kenya has a low participation rate (RoK, 2005).

Though poverty declined from 52.2 per cent in 1999 to 46 per cent in 2007/2008 in Kenya, her constituencies continue to languish in poverty where Kajiado North has the lowest poverty index of 10.7 per cent and Turkana Central with the highest index of 96.9 per cent (RoK, 2008b). Poverty pose a big threat in the provision of quality ECDE since majority of the communities will have financial constraints which is an obstacle to optimal registration in ECD centres (Achoka et al, 2007).

MoEST (2008) indicated that children from poor families have low access to ECD programme due to lack of health services, uniforms and feeding programmes that support them in school. MoE (2008) stated that GER increased from 51.7 per cent in 2002 to 59.3 per cent in 2007 for the children

aged three and above years in ECD. This enrolment is below the expected international average of 70 per cent (UNESCO, 2006).

Nyanza has a half of the population currently living under poverty (RoK, 2008a). The survey further indicated that about 2.73 million people are poor and 43 per cent are concentrated in 10 out of 32 constituencies in the province. According to the constituencies' poverty survey of 2008, the level of poverty in the province has made the costs of ECE to be beyond the means of most households especially those with children of school going age. The survey further indicated that Kitutu Chache, Kitutu Masaba, Bomachoge, Alego and Kuria contributed 4.3, 4.0, 3.8, 4.0 and 4.3 per cent to the provinces poverty incidence.

A study carried out in Kisumu on education needs assessment noted that parent's inability to pay has made them to withdraw their children when unable to pay and enroll them when they want (Maoulidi, 2008). She further indicated that teachers at community owned pre schools earned sh.2000 to sh.3000 per month which has forced them to leave jobs for more lucrative employment opportunities. MoE (2008) noted that GER in ECDE in Nyanza were 52.6 per cent, 53 per cent and 54.15 per cent for the years 2005, 2006 and 2007 respectively, showing that about 46 per cent of ECD age children are not accessing education.

According to the constituencies' poverty survey of 2008, constituencies in Manga district such as Kitutu Masaba and Kitutu chache and North Mugirango have 64 per cent to 74 per cent of the population below the poverty

line. The survey further indicates that Kitutu Masaba and Kitutu chache which are the main constituencies in Manga district were ranked number 172 and 170 out of 210 constituencies respectively in Kenya (RoK, 2008a). The incidence of poverty in the district cause a great concern since 70 per cent of ECD Finance is contributed by the communities.

Achoka et al (2007) indicated that some pre schools have poor desks, buildings, playing grounds, water facilities and sanitary facilities that has made participation rate to be poor in most ECD centres in Kenya. For the ECD centres to achieve their internal efficiency, survival rates and wastage (dropouts and repeaters) rates should be minimized and be combined with an increase in the completion rates from the subsector of education.

The impacts of poverty in the communities and limited finance by the government in the subsector may be a big blow to the implementation of ECD programme, due to provision of poor quality services brought about by inadequate qualified teaching staff, inadequate curriculum and physical resources and high costs of providing nutrition and water facilities (MoEST, 2008). Hence, to meet the EFA and millennium development goals, there is need to examine the factors influencing internal efficiency in ECD centres in Manga district in order to find solutions for the problems.

1.2 Statement of the Problem

The sessional paper No.1 of 2005 re-affirms government commitment in the provision of quality education and training for national development (RoK, 2007).The government has established the National Early Childhood

Development policy framework and early childhood development service standard guidelines for Kenya that aims at realizing a 100 per cent participation in ECD (MoE,2007).

To achieve this goal, heavy investment by both the government and the parents is required to provide better services capable of producing pupils with the required skills, knowledge and attitudes from the subsector. Better teachers, better management, availability of physical and curriculum resources are requirements for internal efficiency in the subsector and the facilities demands high finance to be efficiently in operational. Failure or partial provision of the resources may result to inefficiency in ECD centres. However, finance and poverty remains a challenge to the ECD programme in Kenya (MoE, 2008)

Achoka et al (2007) pointed out that limited finance from the government and poverty among the households has led to pre school dropouts and withdrawals of children from ECD centres .Manga district has 65 per cent of individuals who live below the poverty line and contains constituencies; Kitutu Masaba, Kitutu Chache and North Mugirango with rankings of 172,170 and 174 out of 210 constituencies respectively (RoK, 2008b).

Poverty in many households is a factor that has made disadvantaged children to drop out of ECD centres(MoE,2008). Poverty coupled with limited government finance in the district has impacted heavily on the provision of resources that are instrumental for internal efficiency in ECD centres.

Therefore, there was need to examine factors influencing internal efficiency in public ECD centres in Manga district.

1.3 Purpose of the Study

The purpose of the study was to investigate factors influencing internal efficiency in public ECD centres in Manga district.

1.4 Objectives

The objectives of the study were as follows:

- i. To establish the relationship between the teachers training and the quality of educational output in public ECD centres in Manga district.
- ii. To determine the relationship between the teachers salaries and the quality of educational output in public ECD centres in Manga district.
- iii. To examine the relationship between class size and the quality of educational output in public ECD centres in Manga district.
- iv. To determine the relationship between unit costs and enrolment in ECD centres in Manga district.
- v. To establish the state of teaching/learning facilities in public ECD centres in Manga district.
- vi. To establish the state of educational wastage in public ECD centres in Manga district.

1.5 Research Questions

The study was guided by the following questions.

- i. What is the relationship between the teachers training and the quality of educational output?
- ii. What is the relationship between teacher's salaries and the quality of educational output in public ECD centres?
- iii. How does class – size affect affect the quality of educational output in public ECD centres?
- iv. What is the relationship between enrolment and unit costs of providing education in public ECD centres?
- v. What is the state of teaching /learning resources in public ECD centres?
- vi. What is the state of educational wastage in public ECD centres?

1.6 Significance of the study

The study may be useful to educational planners for improving internal efficiency of ECD centres. The study may also be useful to other educational managers and administrators such as principals, head teachers and directors of educational institutions on getting economies of scale through increased enrolment up to the optimal level.

Educational planners such as the Kenya Institute of Education and the Ministry of Education might use the findings of the research to formulate educational policies regarding training of ECD teachers, provision of ECD facilities and motivation of ECD teachers. They may also use the findings of

the study to make decisions on offering free ECDE to reap the future benefits on human resources.

1.7 Basic Assumptions of the study

The following were the assumptions of the study;

The study assumed that respondents were aware of the factors that influence internal efficiency in public ECD centres. The study assumed that internal efficiency of the public ECD centres affected the quality of educational output.

The study also assumed that respondents were willing to cooperate and give honest, accurate, and truthful responses to the items in the questionnaires.

1.8 Limitations of the Study

The study had the following limitations;

It was not being possible to control the attitudes and feelings of the respondents during the study because out of fear of victimization, socially acceptable responses might have been given. This might have resulted to inaccurate findings in the study. However, the study minimized it by assuring the respondents of their privacy and confidentiality so as to increase the accuracy of the findings.

Since the head teachers were evaluating their own performance, objectivity of the questionnaires might have been affected resulting to the outcome skewing towards their favour. The study minimized that by explaining to the head teachers on the importance of the study and appealing to them for accurate

responses. The study used questionnaires to ensure anonymity of the respondents.

1.9 Delimitations of the Study

The study didn't capture all views of all stakeholders of ECD in Manga district because of difficulty in tracing respondents due to limited financial and time resources. Therefore, the study covered a small portion of ECD centres in Manga district. The result from the findings was generalized to the area of study, though the study might have had valid implications to the rest of the country.

The study captured responses from public ECD centres in Manga district because the private ECD centres were in different level of development and with different structures in curriculum implementation. The study was also delimited to ECD teachers and head teachers and therefore parents and pupils were not focused.

1.10 Definition of Significant Terms

Efficiency refers to the situation where the greatest amount of output is achieved using a minimum quantity of inputs.

Internal efficiency refers to the capacity of ECD centre to produce graduates without repetition, and drop outs.

Human capital refers to the investment on human capacities like education and health.

External efficiency refers to a situation where graduates fit to social setting after leaving school.

Drop out refers to leaving school before the completion of a given stage or leaving at some intermediate or non-terminal point.

Educational wastage refers to an incidence in a country's educational system of drop outs and repetition.

1.11 Organization of the Study

The study will be organized as follows;

Chapter one consisted of the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, research hypotheses, significance of the study, limitations of the study, delimitations of the study, assumptions of the study, definitions of significant terms and the organizations of the study.

Chapter two contained review of the pertinent literature. The review included rationale of investing in ECD, efficiency of education, unit costs of education, wastage in education, theoretical framework, conceptual framework, and summary of literature review.

Chapter three described the research methods used. Research methodology was divided into research design, target population, sample and sampling procedures, research instruments, piloting, data collection and data analysis techniques.

Chapter four contained data presentation, interpretation and discussion of the findings. Chapter five described the summary of the study, conclusion, and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

This section contained literature on the rationale for investing in ECD, Efficiency in education, Unit costs of education, Wastage in education, Theoretical framework, Conceptual framework and Summary of the literature review.

2.1 Rationale for investing in ECD

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Education is a prime factor for economic growth and development (Ayot & Briggs, 1992). Education builds a strong foundation for the future social, educational and physiological growth because it empowers people with required skills, knowledge and attitudes required for political, economic, social and cultural development of a country. Education empowers people to act for positive social and economic changes that enable them to find new solutions within the changing world. (RoK, 2007)

Education influences fertility both directly through changing attitudes, values and beliefs towards family size and indirectly through by delaying marriage, promoting couple communication, lowering infant and child mortality and increasing contraceptive use (RoK, 2008b). The report further stressed that urban women have lower fertility levels compared to rural women because they have better access to education, higher social mobility and better access to material health, marry later and generally face higher costs of raising children. The highest decline in fertility rate was recorded for mothers with

primary education with 3.3 per cent, followed by those who have completed secondary education and lowest for those with no education.

The level of education is inversely related to the infant mortality rate (RoK, 2008a). The report continued to argue that women with no education experience have three times more infant deaths than their educated counterparts. Ayot and Briggs (1992) indicates that decreased infant mortality rate among educated women is attributed to increased knowledge on nutrition and health with more empowerment in terms of earnings.

People with higher levels of education seem to have on average, higher levels of productivity (RoK, 2008a). Employers use educational characteristics as a proxy for suitability and potential productivity of their employees, the educated one is the more likely to be observed into jobs. Ayot and Briggs (1992) have indicated that education increases the level of agricultural production in a country since farmers are educated on the better and efficient methods of production to employ in farming and keeping of livestock. They further indicate that education increases mobility of labour leading to better utilization of human resources and other factors of production.

Digolo(2002) pointed out that education plays three roles for national development; First, it eases tension that exist between local and global demands by inducting individuals into the world citizenship without losing nationalism and participation in the life of their national and local communities. Secondly, it eases tension that exist between competition and cooperation especially in politics by reconciling forces of competition to

create participation and cooperation that gives strength and solidarity which unites people. Thirdly, it eases tension that exist between democracy and autocracy by helping people to acquire ideas of democracy such as self determination, human rights, respect of law and order, good governance, transparency and accountability.

Holistic development of human resources was emphasized by Jomtien world conference on EFA goals 1990 and the world forum in Dakar 2000. Goal number 6 on Dakar Framework put more emphasis on the provision of quality education in all subsectors of education, from ECE to adult education in order to bring about a meaningful development in the country (UNESCO, 2006).

Early childhood development has been regarded as a foundation aimed at educating ,caring for and socializing the young child up to the age of 6 years(UNICEF,1998). Research that has been done, confirms the importance of early years in positively influencing the growth and development of children by the time they reach maturity.

National Research council (2001) noted that children come into the world eager to learn. It further indicated that the first five years of life are a time of enormous growth of linguistic, conceptual, social, emotional, and motor competence among children. The children during this period ,explore the environment, learn to communicate, and begin to construct ideas and theories about how things work in the surrounding world.

Shore (1997) indicated that investment in ECE is a solid foundation for creating more educated people at higher levels of education. Shore established

that early learning in early childhood is critical for long-term skill development. A child's development and experience during the infant and pre school years lay a critical foundation for later growth and subsequent development. UNESCO (2004) noted that the way the child is nurtured socially, emotionally, intellectually and physically creates a lifelong learning process. Children who are nurtured well can live well and create better societies for all.

Mustard (2002) indicated that investing in quality ECD is a "hard" investment which is important to the society as other investments like infrastructure. UNESCO (2006) pointed out that investing in ECE leads to individual and social benefits such as better health conditions, higher incomes and greater social interactions. Young (2002) indicated that investing in the earliest years of children's lives, is investing in everyone's human and economic development. The idea is behind people's motivation on spending on ECD programmes, not for its own sake but for the sake of pecuniary and non pecuniary returns.

Mustard (2002) noted that poor development during early childhood years will affect key aspects of brain development. Mustard indicated that the immune systems and brain development which influence cognition, imagination, behavior and skills will be affected.

OECD (2001) argued that ECE tends to give children a better start of life. Children who participates in ECCE programmes are likely to start primary education and perform better in school and are less likely to drop out of school

or repeat on grades. A cross country study in sub-Saharan Africa shows a clear relationship between pre school coverage and repetition and survival rates as well as children's physical development (Jaramillo & Mingat, 2003). They further estimated that if African countries expand pre school coverage to 40 per cent by 2015, primary repetition rates will fall to 15 per cent from 20 per cent in the year 2000. Reduction of wastage is a pre requisite for internal efficiency in schools.

A longitudinal high/scope peny preschool study in United States targeting African American born in poverty and coming from underprivileged socio economic circumstances where the child scored less than 85 on standard IQ test, found that children achieved higher IQ scores at age four to seven, and higher average achievement scores at ages nine to 14 than did the control group (Shehadeh, 2008). Shehadeh further noted that at ages 18 to 20, the children who attended pre school programme showed a better school performance and employment and fewer behavior problems such as teenage pregnancy and criminal activities, at age 27, they were able to earn \$2000 or more per month than their counterparts.

2.2 Efficiency of Education

Psacharopolous (1980) provides at least two meanings of the term efficiency as used in education. One is the internal efficiency of an educational institution where pupils or students are educated and turned into graduates. Second, is the external efficiency of an educational institution where graduates should fit to the social setting after leaving school in comparison with the

resources used while in school. Though psacharopolous didn't do his studies in ECD centres his definition of internal efficiency apply to the extent to which ECD programme impart the required skills and knowledge to those pupils who goes through the system .The educational internal efficiency in ECD centres considers the pupils who completes the cycle of ECD programme and are not affected by dropouts and repetitions.

Rodgers and Ruchlin (1971) referred efficiency to achieving the greatest amount of output from a given set of input or achieving a specified amount of output while utilizing a minimum quantity of inputs. Efficiency is the ability to produce a desired effect with minimum effort, experiences or waste. In reference to ECD efficiency is the capacity of the ECD programme to turn out graduates at early childhood education in the most efficient way without waste, stagnation or repetition.

Tan and Mingat (1992) argued that a high rate of survival within cycles of education particularly in primary and secondary education is necessary, although not sufficient condition of an efficient system. Conversely, a system that exhibits low intra-cycle retention rates is invariably inefficient. In the educational system, the curriculum for a cycle of study is designed to improve and reinforce certain cognitive skills; students who exit before the end of the cycle will acquire those skills only partially and probably temporarily. As much as this outcome holds, the resources invested in those students education would be wasted, leading to inefficiency in the system.

Though the study did not cover wastage in early childhood education, to improve internal efficiency in ECD centres, there is need to reduce the rate of wastage through reduction on dropout rates and repetition rates.

2.3 Unit costs of education

Unit costs are a very important indicator of internal efficiency in educational institutions. Unit costs tends to decrease as enrolment increases and the system is said to attain internal efficiency when unit costs tend to rise when enrolment is falling (Eicher 1984). As enrollment tends to increase in ECD centres, the total costs are distributed over a wide population of pupils, hence need for more access to the centres.

Wolff (1984) noted that the major elements affecting unit costs were teacher's salaries, student-teacher ratio and non-teacher ratio is essential in lowering unit costs hence improving quality of education. For example, Ethiopia had a ratio of 41:1, Kenya 28:1, Zaire 27:1, Rwanda 13:1, Sudan 16:1, Burundi 17:1, Botswana 18:1 and Swaziland 18:1. The teacher pupil ratio may affect the attention of teachers towards their pupils.

When teacher – student ratio is lower, there is a high chance of contact between a teacher and students and teachers have enough time to check homework and class work (UNICEF, 2002). High teacher-pupil ration tends to lower the quality of learning in schools since teachers may not give necessary attention to pupils as required hence decreasing internal efficiency.

Okwemba (2000) pointed out that NACECE has guidelines on how to develop ECD programmes. RoK (2006) indicated that the recommended teacher pupil

ratio in ECDE centres are; 1:15 for three to four year old children, 1:25 for four to five year olds, 1:30 for five to six year olds and 1:40 for the six to eight year old pupils.

Rodgers and Ruchlin (1971) argued that efficiency of schools and school systems could be improved through economy of size. Economy of size is a decrease in the average cost of producing an item related to the increase in the production of that item. They further argued that economies of scale result from indivisibilities. For example, a cinema projector under increased enrolment will lower average cost of film per student.

However, Gitau (2004) found that as the size of an educational system increases a point may be reached where it is necessary to add administration at a more proportional rate due to the system becoming more and more complex and difficult to coordinate causing average cost per student to increase. Therefore, an educational system should have that optimum size.

Internal efficiency can also be affected by the student – classroom ratio and student to text book ratio. MoE (2006) argued that in 1999, only three per cent of classroom time involved reading compared to 46 per cent in 2006. The report further noted that 85 per cent of teachers made use of textbooks in their lessons while group based reading activities were observed in 46 per cent of the lessons. Textbooks enhances pupil –pupil interaction contributing to improve teaching and learning. The ECD facilities are internal to academic achievement in ECD centres as they provide learning and teacher's

environment in terms of student-teacher contact and availability of learning and teaching materials.

Okwemba (2000) stated that the successful running of a preschool depends on how teachers plan, organize, and manage their classes. Miller and James (1993) pointed out that pre school curriculum should be implemented by adults who have credentials, licenses, certifications and successful experience with preschool age children. They stressed the need for training preschool teachers so as to initiate efficient delivery of teaching and learning in ECD centres.

Kivuva(1996) studied professional qualities of teachers in ECD in Nairobi and pointed out that teachers competency were affected by terms and conditions of service, availability of teaching and learning materials, play facilities and class size. Kivuva further revealed that preschool teachers were dissatisfied with their work because some teachers are not paid regularly while others are underpaid, a situation that attracts unprofessional teachers.

Wawire (2006) on her study entitled “factors that influence the quality and relevance of ECE in Kenya” mentioned that lack of trained teachers, low and irregular salaries for ECDE teachers are reasons for poor access and poor quality services in the subsector.

2.4 Wastage in education

Wastage in education consists of drop outs and repeaters leading to a certain degree of inefficiency. Repetition in classes and school dropouts results from; family and student characteristics that affect demand for education and

school's educational policies that are ineffective. For example, if parents do not support academic learning at home, children will perform poorly in school and eventually drop out.

Poor health and nutrition in improvised communities take toll on school attendance and performance (Lockheed et al, 1991). Lockheed et al (1991) further argued that the goal of primary education system is to produce graduates who have learnt the skills, prescribed by the curriculum. Those students who dropout from schools could have not obtained the skills required for that level. Holistic and integrated ECD programme should be able to meet the child's cognitive, emotional and physical needs (RoK,2007). Graduates from this subsector should cover what their curriculum pertains and if they drop out because of poverty or any other reason, then complete skills to be acquired are not achieved.

High costs and poverty among other reasons explains why Kenya has a low participation rate (RoK, 2005). Poverty makes parents to contribute poorly in educational development in the country. They pay poorly; hampering learning in a school which is a clear constraint of efficiency in the educational system .According to a presentation made by Nkinyangi (2006) on Universal Primary Education (UPE), majority of African countries are characterized by extremely low coverage on pre primary level. She pointed out that pre primary gross enrolment is below 6 per cent in more than half of sub Saharan African countries, disadvantaging children from poor backgrounds. She further indicated that funding ECD programmes is very low leading to many ECD centers closures particularly in poor communities.

Seetharam (1995) argued that drop outs and repeaters raise costs of producing a graduate in the secondary educational system. The costs have three components; one is the amount directly spent on schooling; both the cost to the society for providing a place for each student in school and the cost to parents for items such as transportation and school supplies; second is the opportunity cost of a school's student time – the value of the labour force forgone when the student attend school instead of holding outside jobs or working at home; thirdly, the future cost to drop outs and their parents in the labour market. Failure to complete a cycle's education translates into a lower rate of return for each year of schooling missed.

Preliminary findings in Indonesia show that the economic returns to elementary education are reduced to 34 and 54 per student when both repetition and dropout rates are taken into account in calculating the social rate of returns (Behrman and Deolalinker, 1988). They further argued that even grade repetition does not decrease the number of graduates only, but delays the completion and the education cycle and raises the cost associated with producing a graduate. Educational measures should be adopted to improve school effectiveness which would in turn improve the cognitive achievement of pupils in ECD centres, reduce repetition and drop outs and therefore increasing the number of graduates. Reducing dropout rates and repetition rates also will reduce unit costs of producing each school graduate and thus enhancing internal efficiency in the subsector.

2.5 Theoretical framework

Economists use production function approach when focusing on the relationship between school outcomes and measurable inputs into the educational process. The origin of estimating input-output relations can be traced to the Coleman Report which was designed to investigate the extent of inequality in United States (Hanusheck, 2007).

The report postulates that the output of the educational process is directly related to a series of inputs. The report found that although achievement is usually measured at discrete points in time, the educational process is cumulative. Most studies measure output by student scores on standard achievement tests although significant numbers have used other quantitative measures such as student attitude, school attendance rates and college continuation or dropout rates, being generally indicators of future performance in the labour market.

Specification of production function contains; family inputs measured by socio demographic characteristics such as parental education, income and family size; peer inputs measured by characteristics of other students such as other students performance and attitudes; school inputs measured by teachers characteristics such as education, experience and race, school organization such as class sizes, families and administrative expenditures

The production function approach has been employed to investigate the effect on school performance of the core factors that determine expenditure in education. Institutions expenditures are mostly determined by teacher salaries

and class size. Studies in developing countries show the relationship between textbooks and writing materials for student performance with reasonable consistency but few studies have been done on this.

Teacher's education provided the least support of all inputs in the United States but more support in developing countries because of possible differences in the stages of development and the general level of resources available. Teachers experience on performance had support in United States and similar support was shown by studies in developing countries. Class sizes had support on having effects on performance in developing countries than in the United States. Hanusheck (2007) indicated that educational production function is a measure of educational output to various inputs used in education. It is expressed as;

$$A_{it} = f (F_{i(t)}, S_{i(t)}, P_{i(t)}, I_{i(t)})$$

Where A refers to educational achievement; I to -inth student; t to time; (t) to input cumulative to t; F to family characteristics, S to school inputs ; P to peer group characteristics and I to Initial endowments.

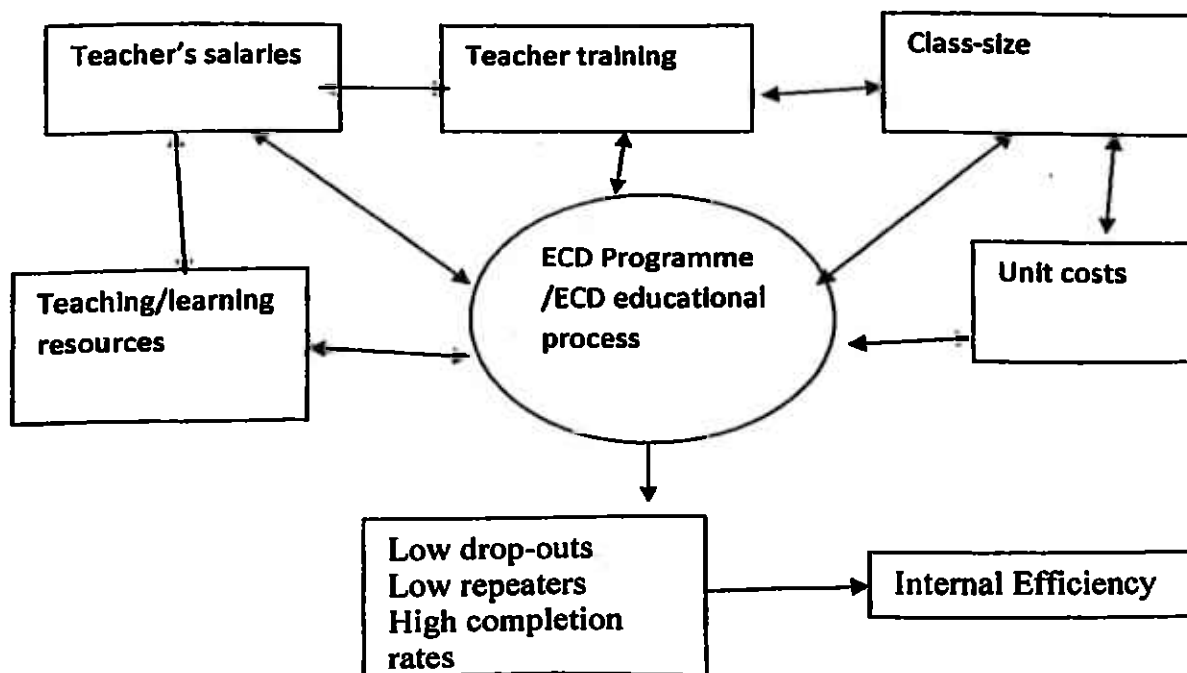
Educational output of a school system in; considering output of a given cycle of education as the number of pupils who complete a cycle (graduates). Educational output (graduates from ECD programme is influenced by factors such as school inputs, family inputs, peer inputs and initial endowments. Interactions of these inputs in ECD programme may lead to wastage (dropouts and repetition that affects internal efficiency. Educational attainment of the pupil's dropouts as well as that of graduates should be taken into account to

determine internal efficiency. Calculations of grade wastage rates, grade survival rates cohort wastage rate and average years per graduate from ECD is used to evaluate internal efficiency.

Common indicator used to assess the educational efficiency is the coefficient of efficiency which is calculated by dividing optimal (ideal) number of pupil years by the number of pupil year actually spent by a cohort of pupils. In a perfectly efficient system, this coefficient valued equal to 100 per cent. Inefficiency arises when it is less than 70 per cent.

Figure 2.1: Conceptual framework:

A conceptual framework is a research tool intended to assist a researcher to develop awareness and understanding of the situation under scrutiny and communicate (Kombo and Tromp, 2006).



The conceptual framework shows that various inputs determine the educational achievement. These factors include unit costs, class size, teaching/learning resources, teacher's salaries and training. The factors interact within an ECD programme to either lead to drop outs, repeaters or high completion rates as the output from the system. Unit costs may be affected by teacher's salaries, teaching and learning resources, class size and teachers training within the subsector of education. The training of teachers may be determined by teachers training and the capacity of the educational centre to solicit funds. The class size can also affect teaching and learning resources. Decisions and policies made on ECD programme may also influence teacher's salaries, teaching and learning resources, teachers training, class size and unit costs. High completion rates and low repetition and dropout rates will lead to internal efficiency of ECD centres.

2.6 Summary of Literature review

Literature review show that internal efficiency of schools is affected by various indicators such as class – size, teaching/learning resources, teacher's salaries and training, unit costs and wastage resulting from school characteristics. Literature indicates that presence of drop outs and repetitions in schools imply a certain degree of internal inefficiency. Therefore literature has shown that a system of education is judged to be internally efficient, if there is optimum enrolment, no wastage, reduced unit costs and optimal class size. However none of the studies have been conducted in Manga district.

CHAPTER THREE

RESEARCH METHODOLOGY

This section explained the methods applied in carrying out the research study. It was divided into the following; Research design, target population, sample and sampling procedures, research instruments, validity and reliability of the instruments, administration of the instruments and data analysis techniques.

3.1 Research design

A research design is the scheme that is used to generate answers to research problems (Orodho, 2003). The study used descriptive survey design because it was descriptive in nature. The design enabled the researcher to collect detailed information as respondents noted answers without any limitation by the researcher. The design allowed the researcher to seek responses from a relatively large number of the respondents of public ECD centres in Manga district (Best & Kahn, 2006).

The survey design also enabled the researcher to collect information concerning current status of the public ECD centres in Manga district in order to gather facts on factors hindering achievement in the schools for decision making. Current status of the teaching staff, wastage, physical facilities and teaching resources was examined and conclusions made.

3.2 Target population

A population is a group of individuals, objects, or items from which samples are taken for measurement (Kombo & Tromp, 2006). The study was

generalized to the public ECD centres in Manga district. The district was under study because it had the ECD programme, high poverty level and no research of the same kind has ever been taken in the area. According to the information received from the DEO's office, Manga district, the study covered four divisions, with a total of 56 public ECD centres, 60 public ECD teachers and 56 head teachers.

3.3. Sample and Sampling procedures

Sampling is the process of selecting a number of individuals or objects from a population such that the selected group contains elements representative of the characteristics found in the entire group (Orodho & Kombo, 2002).

Simple random sampling was used to select head teachers for the study. According to Krejcie and Morgan in Mulusa (1990), a population of 56 head teachers yielded a sample size of 48 head teachers. The head teachers were given numbers which were put into a container. The numbers were picked at random with replacement to allow equal chances of picking each respondent. The picked numbers were equal to the sample size of 48 head teachers.

Stratified random sampling was used to select Public ECD centres and teachers for the study. The population was subdivided into smaller homogeneous groups to get more accurate representation (Best & Kahn, 2006). The ECD centres were classified into four divisions using the information obtained from the DEO's office in Manga district; Tombe 15, Magombo 12, Manga 13, and Kemera 16. The teachers were also classified into four divisions; Tombe 16, Magombo 12, Manga 14 and Kemera 18.

According to Krejcie and Morgan as quoted in Mulusa (1990), a population of 56 ECD centres and 60 teachers will give sample sizes of 48 centres and 52 teachers respectively. Simple random sampling was used to select respondents and ECD centres from each division. Numbers were assigned to each ECD centre and teacher and put into a container. Numbers were picked at random with replacement till sample sizes were obtained appropriately.

3.4 Research instruments

The study used two questionnaires; for the head teachers and teachers. A questionnaire is a written set of questions to which the respondents will respond in writing (Mugenda & Mugenda, 2003). Questionnaires were used to obtain information about current conditions and practices and make inquiries concerning attitudes and opinions quickly and in precise form (Mugenda & Mugenda, 2003). The study preferred a questionnaire because it ensured anonymity of respondents and was cheaper to administer to them.

Each questionnaire was divided into part A and B for personal details and school information respectively. Each questionnaire comprised of structured questions which measured objective responses and unstructured questions that measured subjective responses to enhance formulation of useful recommendations to the study. Items in the questionnaire were designed according to the objectives of the study.

The researcher also visited sampled schools to observe pre school environment as it existed. The observation schedule was used to collect information through

observation. The observation gathered detailed information including that which was not given by respondents (Best & Kahn, 2006)

3.5 Piloting of the Instruments

The researcher carried out a pilot study before actual data collection to enhance the validity and reliability of the instruments. The pilot study was conducted in two selected pre schools which were not included in the sample (Mugenda & Mugenda, 2003).

3.5.1 Validity of the Instruments. Validity is the extent to which an instrument measures the characteristics for which is designed (Mugenda & Mugenda, 2003). The study sought expertise from supervisors and colleagues' opinions in assessing the content validity of the instruments (Best & Kahn, 2006). The opinions agreed that the instruments had content validity.

3.5.2 Reliability of the Instruments.

Reliability is the consistency of the instrument in measuring whatever it measures (Best & Kahn, 2006). The study used test-retest method to test reliability. The study gave two head teachers a questionnaire, after two days, the same questionnaire was re-administered. The scores was calculated and correlation coefficient determined. Pearson product moment coefficient between the two scores was computed using the following formula;

$$r = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{n\sum x^2 - (\sum x)^2} \sqrt{n\sum y^2 - (\sum y)^2}}$$

Where x refers to x scores, y to y scores, Σ to summation, r to the Pearson product moment coefficient and n to the number of paired scores (Best and Kahn, 2006). Internal consistency ranges from zero to one where internal consistency of 0.7 and above is considered reliable. The internal consistency was calculated and found to be one, as follows;

Table 3.1 Scores from piloted questionnaires

Test	X	Y	X ²	Y ²	XY
Test one	98	94	9604	8836	9212
Test two	96	93	9216	8649	8928
Total	194	187	18820	17485	18140

$$R = \frac{2(18140) - (194)(187)}{\sqrt{2(18820) - (194)^2} \sqrt{2(17485) - (187)^2}}$$

$$= 1 \quad (\text{considered reliable})$$

3.6 Data collection procedures

The researcher sought a permit from the MoE for the study. The researcher also sought permission from the District Education Officer in Manga for carrying out the study in the selected schools. The researcher visited the sampled Educational institutions in Manga district to familiarize himself with the district. Sampled institutions were visited for the administration of

questionnaires and after one week, the researcher collected the completed questionnaires and was kept for analysis.

The researcher also visited selected schools for observation in order to fill the observation schedule. Information collected was kept for analysis.

3.7 Data analysis techniques

Data was edited to identify incomplete questions and internal consistency of the recorded data was checked. Data was coded, where numbers were given to represent responses on questions such as that of sex to reduce the size of data. Then data was analyzed both qualitatively and quantitatively.

Qualitative data was analyzed thematically by classifying data into major topics or themes from which opinions from respondents were coded and put into frequency distributions. The frequencies were converted into percentages and quantitative analysis was used to make inferences.

Quantitative data was analyzed by use of descriptive statistics supported by tables, graphs, frequency distributions and percentages. Data was analyzed manually by the researcher.

CHAPTER FOUR

DATA PRESENTATION, INTERPRETATION AND DISCUSSION OF THE FINDINGS

4.1 Introduction

This chapter represents analysis and interpretation of the data collected from the study. The chapter starts with the analysis of the questionnaire return rate and then presents the analysis of the demographic information of the respondents including head teacher's and teacher's gender, age, highest academic and professional qualifications and their experience. The sub-topics which cover the research questions of the study on the teacher's training and salaries, availability of teaching and learning resources, unit costs and wastage are analyzed and discussed. Frequencies tables, percentages, pie charts and graphs have been used to present the findings of the study. The chapter ends with the summary of the findings.

4.2 Questionnaire Return Rate

A sample of 48 head teachers and 52 ECD teachers were selected from a population of 56 head teachers and 60 ECD teachers for the study. These respondents were given questionnaires which they filled and returned to the researcher. The questionnaire return rate is as presented on Table 4.1

Table 4.1: Questionnaire Return Rate

Category respondents	of Sample	Questionnaire returned	Percentage return rate
Head teachers	48	42	87.5
ECD Teachers	52	50	96.2
Total	104	92	

According to the table 4.1, out of a sample of 48 head teachers, 42 of them returned dully filled questionnaires making 87.5 percent return rate and out of a sample of 52 ECD teachers, 50 returned the dully filled questionnaires making a questionnaire return rate of 96.2 per cent. The average return rate was calculated as 91.85 per cent which was found to be an acceptable representation of the target population.

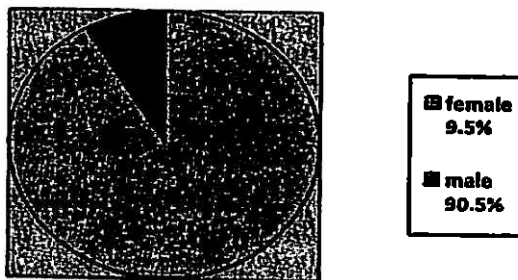
4.3 Demographic Information of Respondents

This section presented the analysis of the demographic information of respondents as revealed from the data collected from head teachers and teachers of public ECD Centres, in Manga district. The section includes the respondent's gender, age bracket, academic qualification, professional qualification and their experience in teaching.

4.3.1 Gender of ECD teachers.

The study sought from head teachers of public ECD Centres in Manga district on their gender. The findings are presented as on Figure 4.1.

Figure 4.1: Gender of Head teachers



The findings on figure 4.1 indicate that majority of head teachers (90.5%) were males while small percentage (9.5%) represented females. The study further observed that 86% of ECD teachers were females while 14% of the teachers were males.

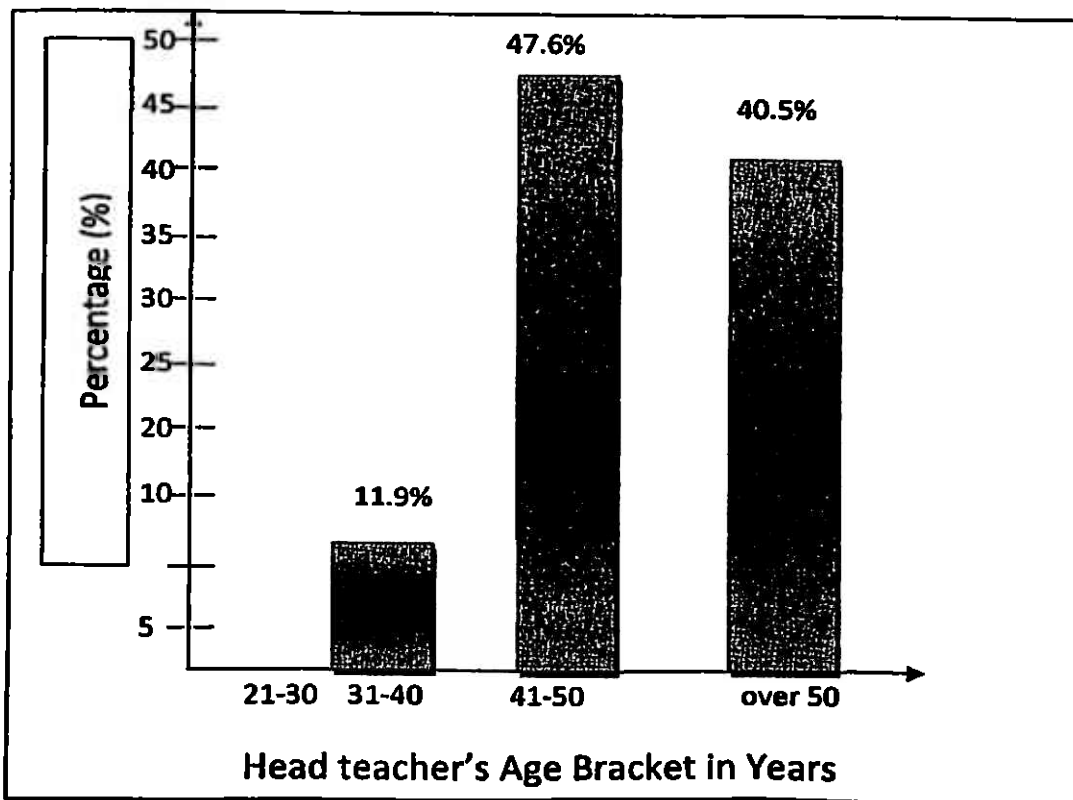
These findings show that gender parity has not been observed in the posting and promotion of head teachers in Manga district. This difference among head teachers could affect the implementation of ECD programme in the district since female teachers and pupils may not have role models as school heads to emulate. The findings also indicate that more females are training to be ECD teachers than males revealing gender parity in training institutions. However for ECD programme to be implemented properly both males and females

should be encouraged to be trained as ECD teachers in order to cater for the needs of pupils in the centres.

4.3.2 Age of ECD teachers.

The study requested head teachers to indicate their age bracket. The findings are presented as shown on figure 4.2

Figure 4.2 Head teacher's Age bracket



The responses on figure 4.2 show that majority of head teachers in public ECD Centres in Manga district are in the age bracket of 41-50 years (47.6%). This is followed by 40.5% of head teachers in the age bracket of over 50 years, then those in 31-40 years (11.9%) while there was no head teacher in the age bracket of 21 – 30 years.

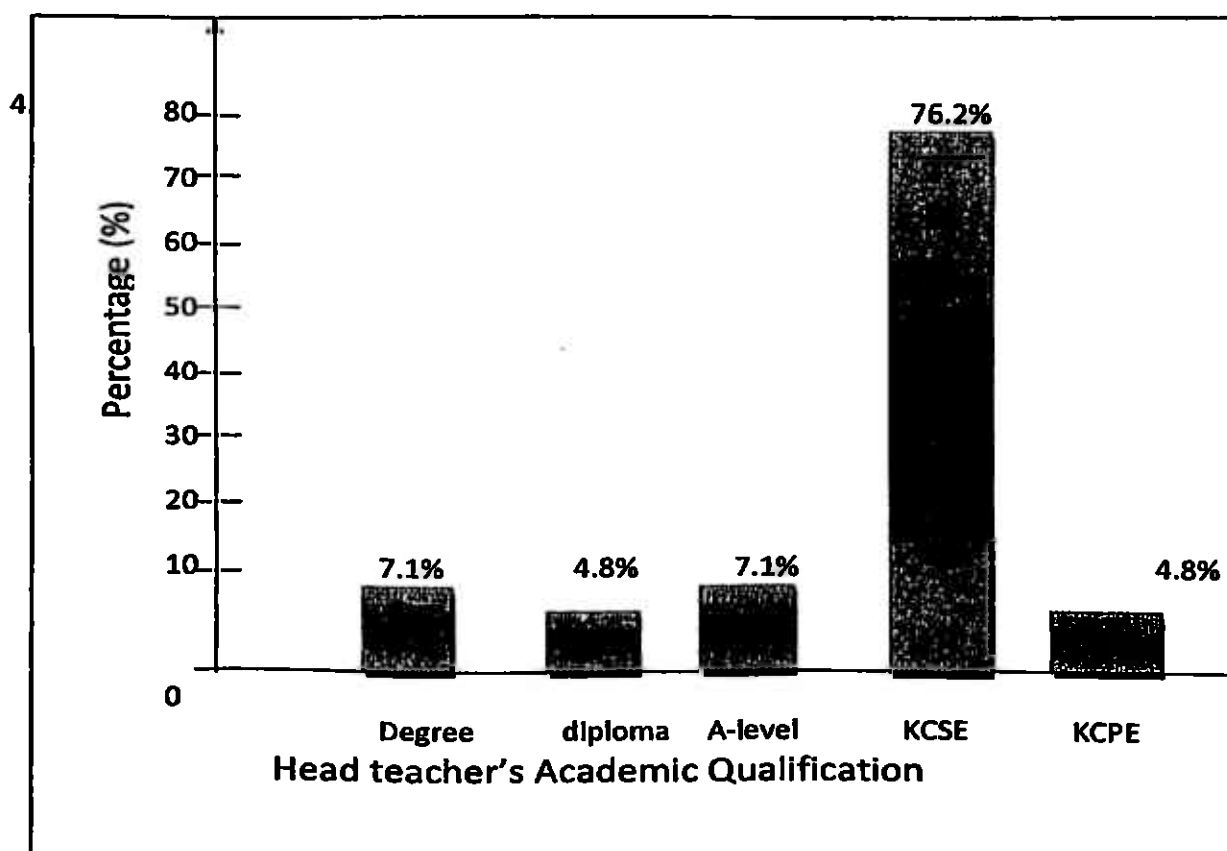
The findings show that experience of teachers determines their promotions as head teachers in ECD centres among other factors. This indicates that implementation of ECD programme may benefit from the experience of head teachers on areas of planning, coordination, organization and control of the activities to ensure efficiency in the centres.

The study also sought from teachers about their age. Their responses indicated that majority of the teachers (42%) were at the age bracket of 26-35 years, followed by 24% of teachers at 36-45 years, 22% of teachers at 16-25 years and 12% of teachers at age bracket of over 45 years. The findings show that most of ECD teachers are young people who are energetic and fresh from college. Their age is instrumental to the ECD programme because they are able to work long with pupils, fresh with current methodologies and other skills of handling pupils. If their knowledge and skills are combined with the right rewards, the ECD programme can eventually succeed in meeting its objectives.

4.3.3 ECD teacher's academic qualification.

The researcher asked head teachers of public ECD Centres in Manga district to indicate their highest academic qualification. The findings are presented as on Figure 4.3.

Figure 4.3: Head teacher's highest academic qualification

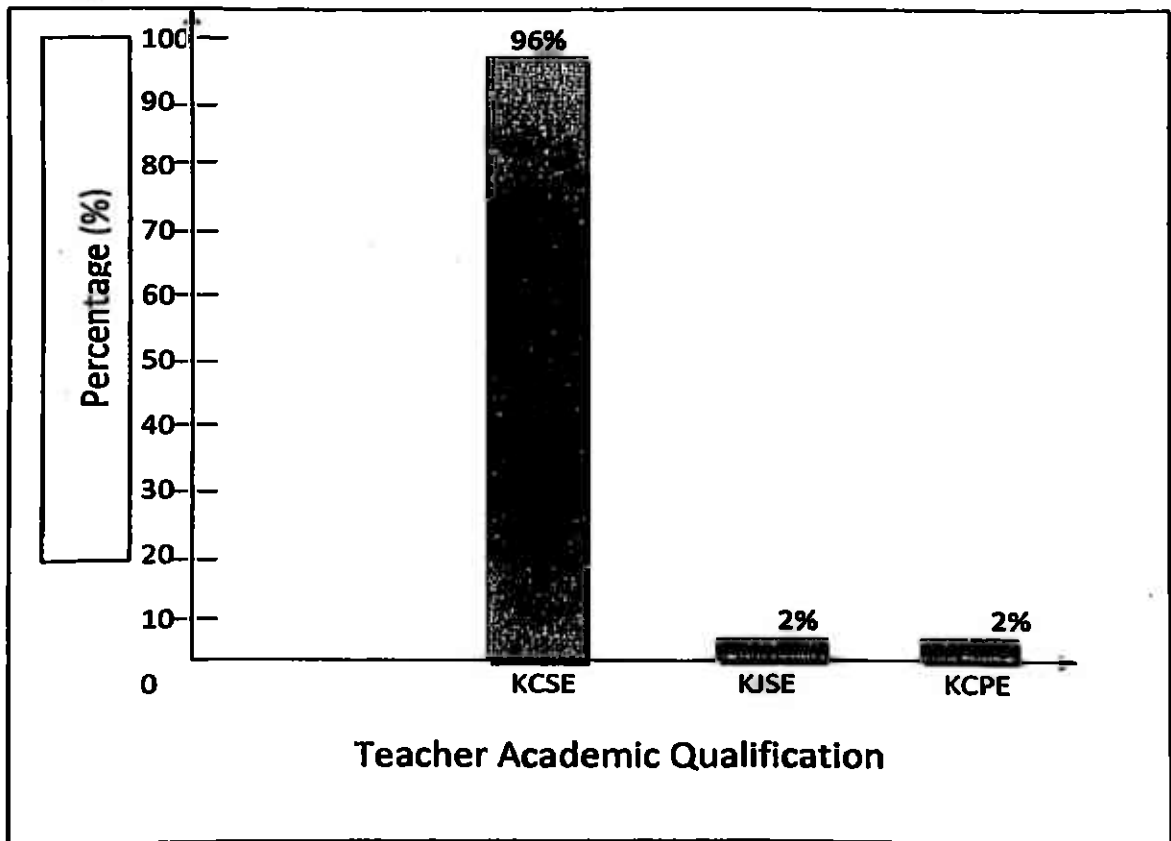


The findings on figure 4.3 indicate that majority of head teachers in public ECD Centres in Manga district (76.2% had KCSE and its equivalent qualification, followed by (7.1%) Degree and A-level qualification, then (8.8%) KCPE and its equivalent and Diploma holders.

These findings are an indication that majority of head teachers had minimum academic qualification to head ECD Centres. The findings indicate that ECD centres are headed by people with knowledge and skills which are instrumental in the management and teaching in the schools.

The researcher asked ECD teachers of public ECD Centres in Manga district to indicate their highest academic qualification. The results are as shown on Figure 4.4.

Figure 4.4 Teacher's highest academic qualification

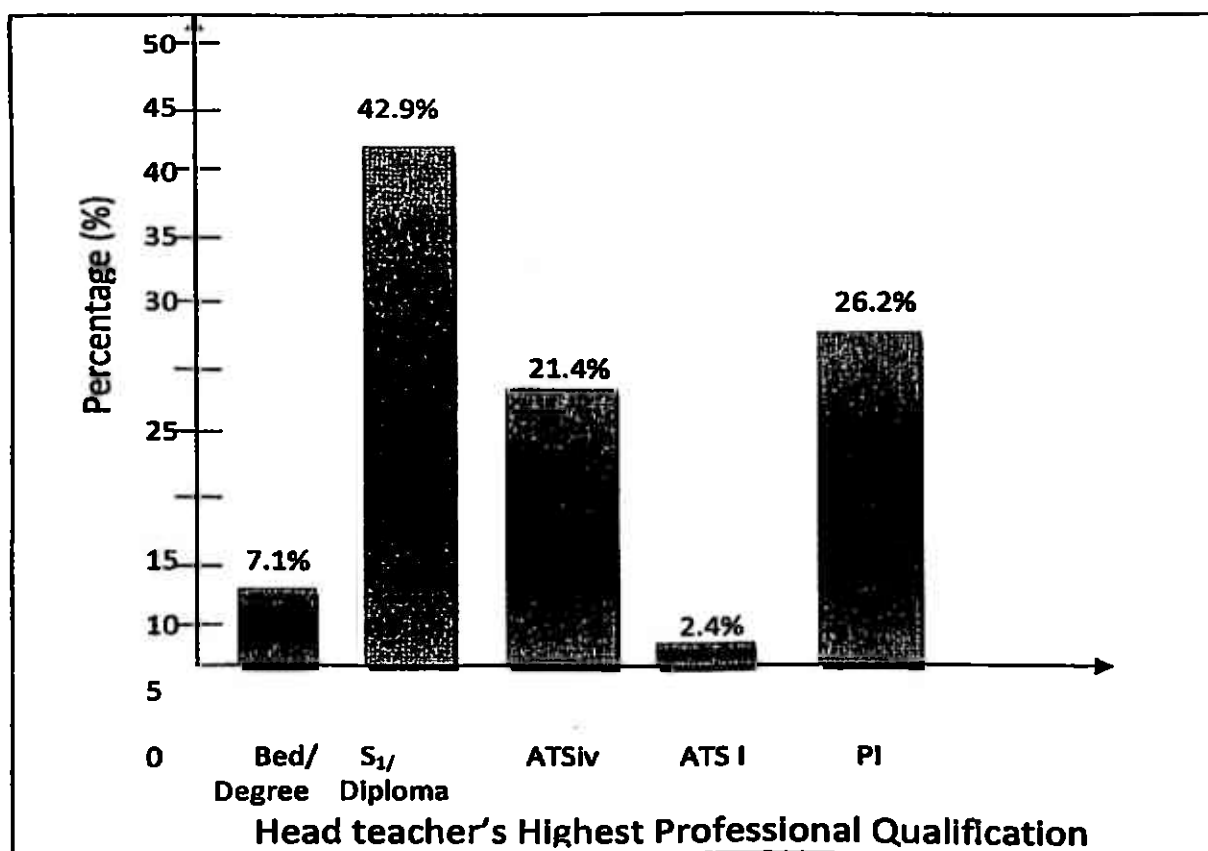


The results on figure 4.4, majority of ECD teachers in public ECD Centres in Manga district (96%) had KCSE and its equivalent qualification, followed by (2%) KJSE and KCPE qualification. These findings show that majority of ECD teachers had minimum qualification to teach in public ECD Centres and therefore implementation of ECD programme may not be affected by ECD teacher's qualification.

4.3.4 ECD teacher's highest professional qualification.

The researcher asked head teachers to indicate their highest professional qualification. The results are shown on figure 4.5

Figure 4.5 Head teacher's highest professional qualification

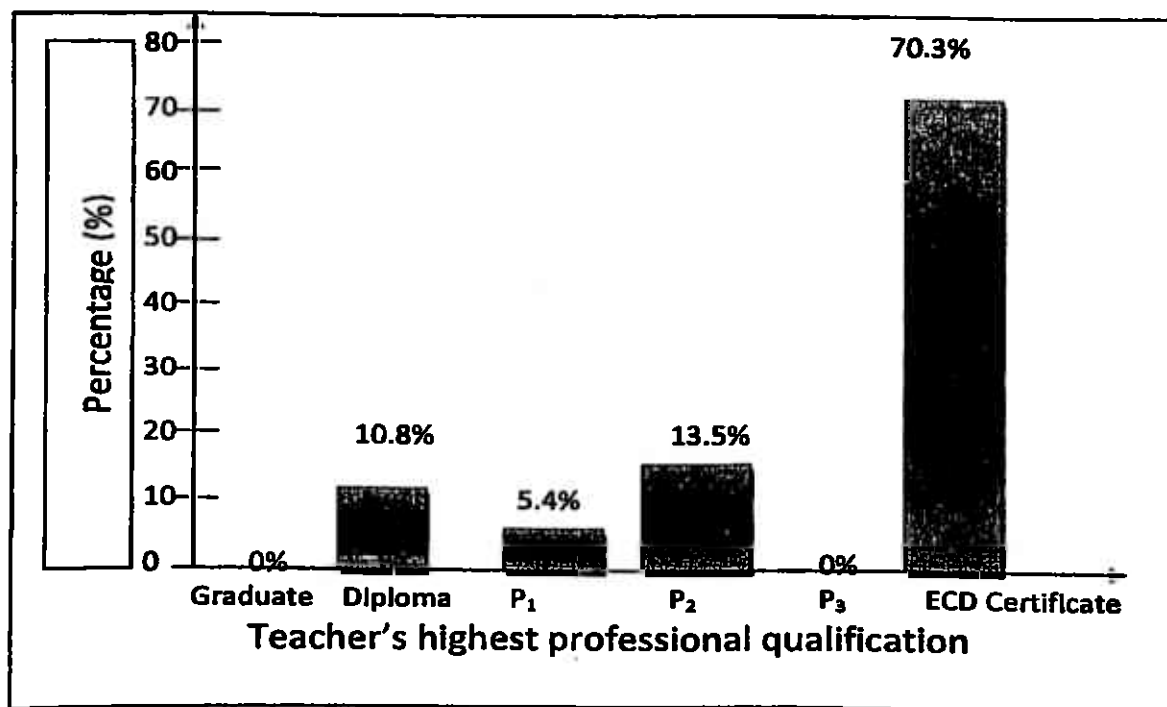


The findings on Figure 4.5, majority of head teachers are S₁/Diploma holders (42.0%), followed by P₁ (26.2%), ATS IV (21.4%, B.Ed degree holders (7.1%) and lastly ATS I (2.4%). These findings indicate that majority of head teachers had minimum professional qualification to head public ECD Centres

in Manga district and therefore failure to sustain ECD programme cannot be attributed to the head teacher's professional qualification.

The study asked ECD teachers to indicate their highest professional qualification. The findings are as shown on figure 4.6.

Figure 4.6 Teacher's Highest Professional Qualification



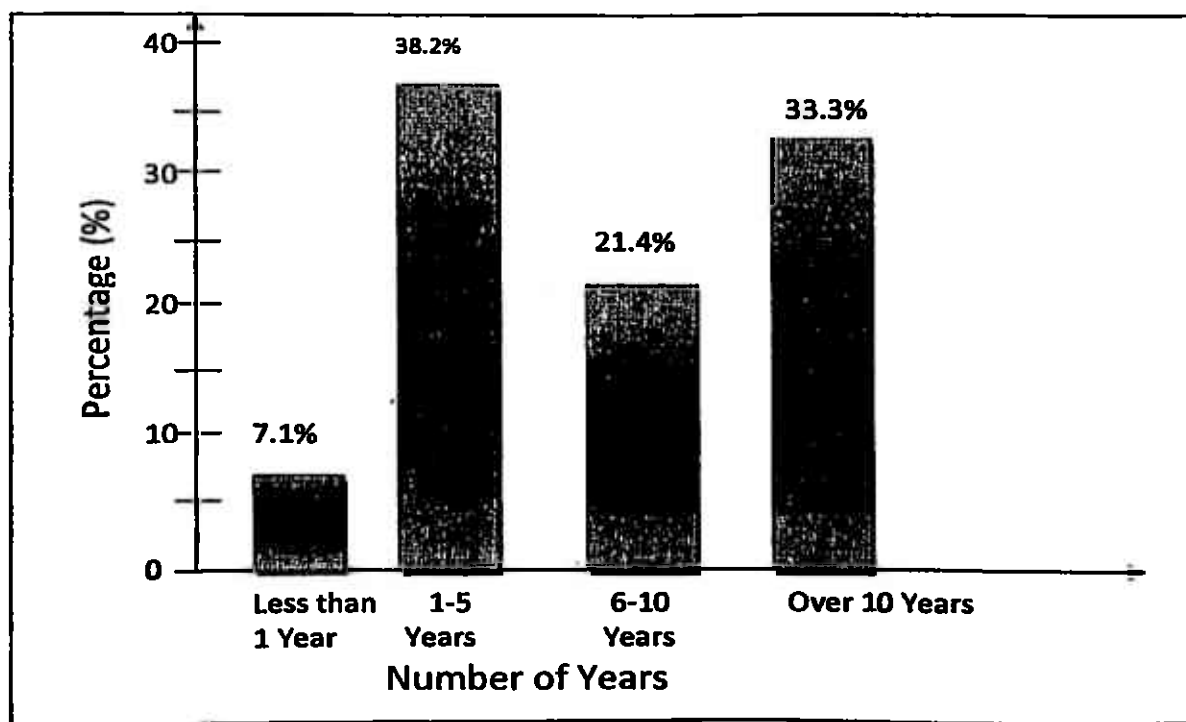
From figure 4.6, majority of ECD teachers (70.3%) were ECD Certificate holders. This was followed by 13.5% of ECD teachers with P₂ qualification, then 10.8% with Diploma in education, 5.4% were P₂ holders while there were no ECD teachers with P₃ and Degree holders. These findings are an indication that majority of ECD teachers had minimum professional qualification to teach in public ECD Centres. The p₁, p₂ and diploma holders have undertaken

in service training in ECD and therefore failure to sustain ECD programme cannot be very much attributed to teacher's qualifications.

4.3.5 Head teachers Administrative Experience

The study sought to establish from head teachers their administrative experience in years. The findings are as presented on Figure 4.7.

Figure 4.7 Head teachers Administrative Experience

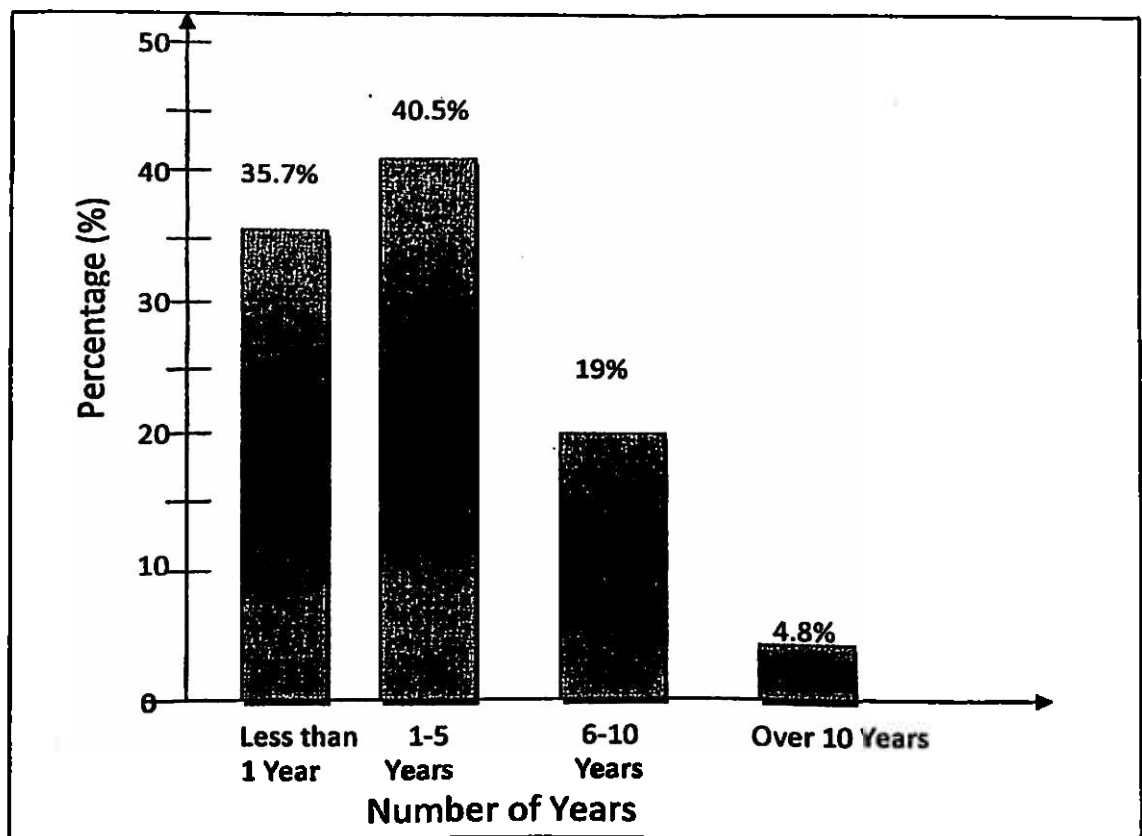


The findings in figure 4.7, indicate that majority of head teachers (38.2%) had administrative experience of one to five years. This is followed by 33.3% of head teachers with administrative experience of over 10 years, 21.4% of head teachers with administrative experience of six to ten years and lastly 7.1% of head teachers with administrative experience of less than one year.

The findings indicate that majority of head teachers have a wide administrative experience which is instrumental for establishing good public relations, mobilizing resources, managing human resources and overseeing the implementation of ECD curriculum. The experience of teachers showed their

Also, the researcher sought to establish from head teachers their administrative experience at their present ECD Centres in years. The responses are as presented on Figure 4.8.

Figure 4.8 Head teacher's Administrative Experience at present school



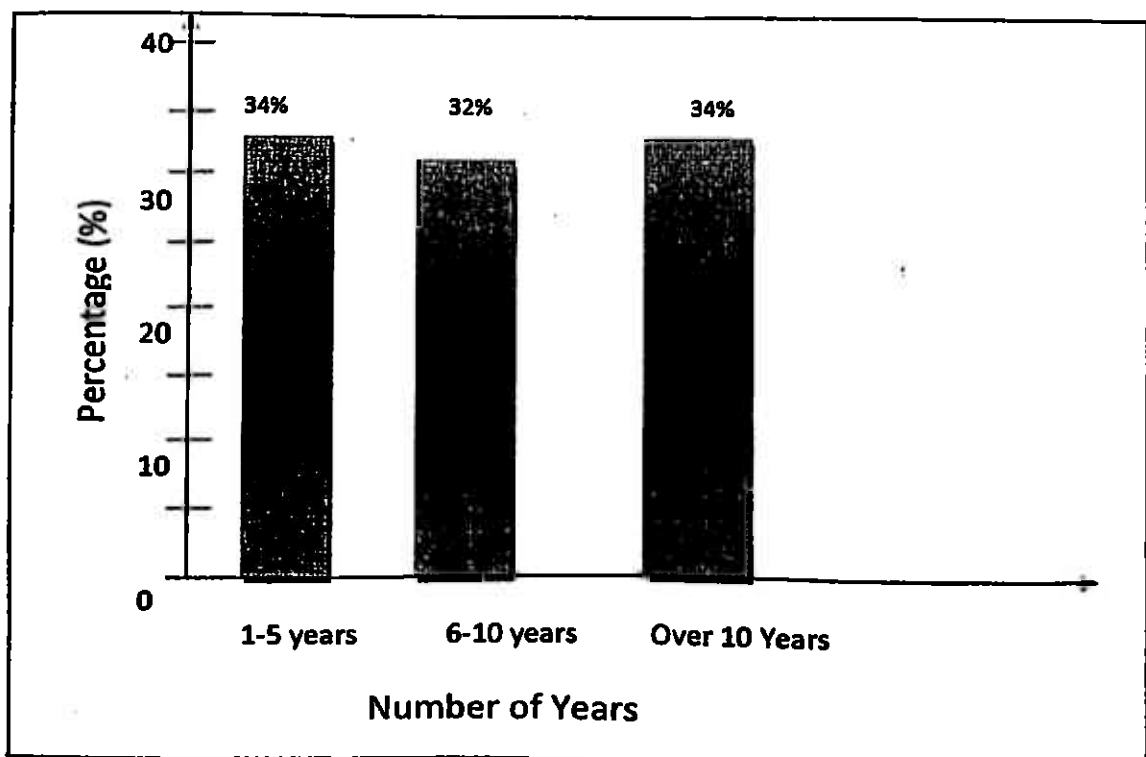
The findings on figure 4.8, shows that majority of head teachers (40.5%) had administrative experience of between one to five years at the present school. This is followed by 35.7% of head teachers with an administrative experience

of less than one year, (19%) of head teachers with an administrative experience of six to 10 years and lastly by 4.8% of head teachers with an administrative experience of over 10 years. The results show that majority of head teachers managing ECD Centres have sufficient administrative experience and could therefore positively contribute to the implementation and management of ECD Programme in ECD Centres.

4.3.6 Teacher's teaching Experience

The researcher asked teachers of public ECD Centres in Manga district to indicate their teaching experience in years. The results are as presented on figure 4.9.

Figure 4.9 Teacher's teaching Experience



The findings presented on figure 4.9 show that majority of teachers (34%) had a teaching experience of one to five years and over 10 years. this is followed by 32% of teachers with teaching experience of six to 10 years.

The findings is an indication that majority of teachers had an experience that can be said to be enough to ensure that the implementation of ECD programme is successful.

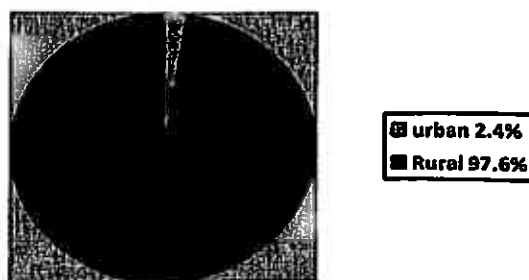
4.4 Information Concerning ECD Centres

This section presented the analysis of the information concerning the ECD Centres as provided by the respondents of public ECD Centres in Manga district

4.4.1 Location of ECD centres.

The study required head teachers to indicate the location of their ECD Centres. Their responses are as shown on figure 4.10.

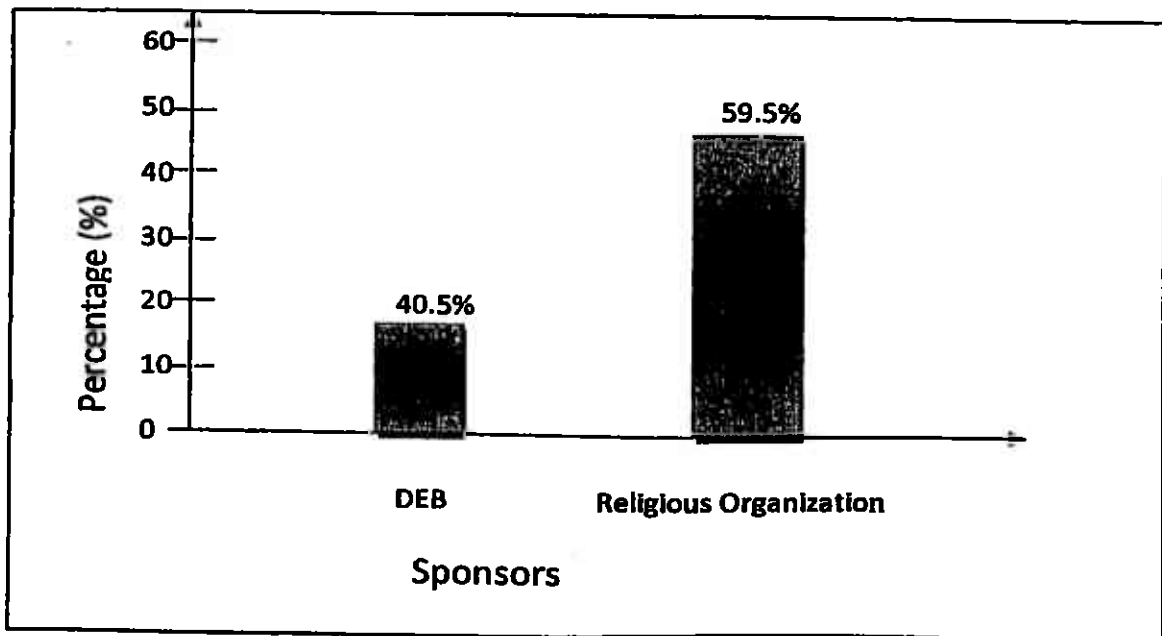
Figure 4.10: Location of ECD Centres



The findings on figure 4.10 show that majority of public ECD Centres in Manga district (97.6%) were established in rural areas compared to 2.4% ECD Centres established in urban areas. These findings are an indicator that majority of public ECD Centres are served by rural population.

The study also asked head teachers to indicate the sponsor of their ECD Centres. The findings are as presented on figure 4.11

Figure 4.11 Sponsorship of ECD Centres

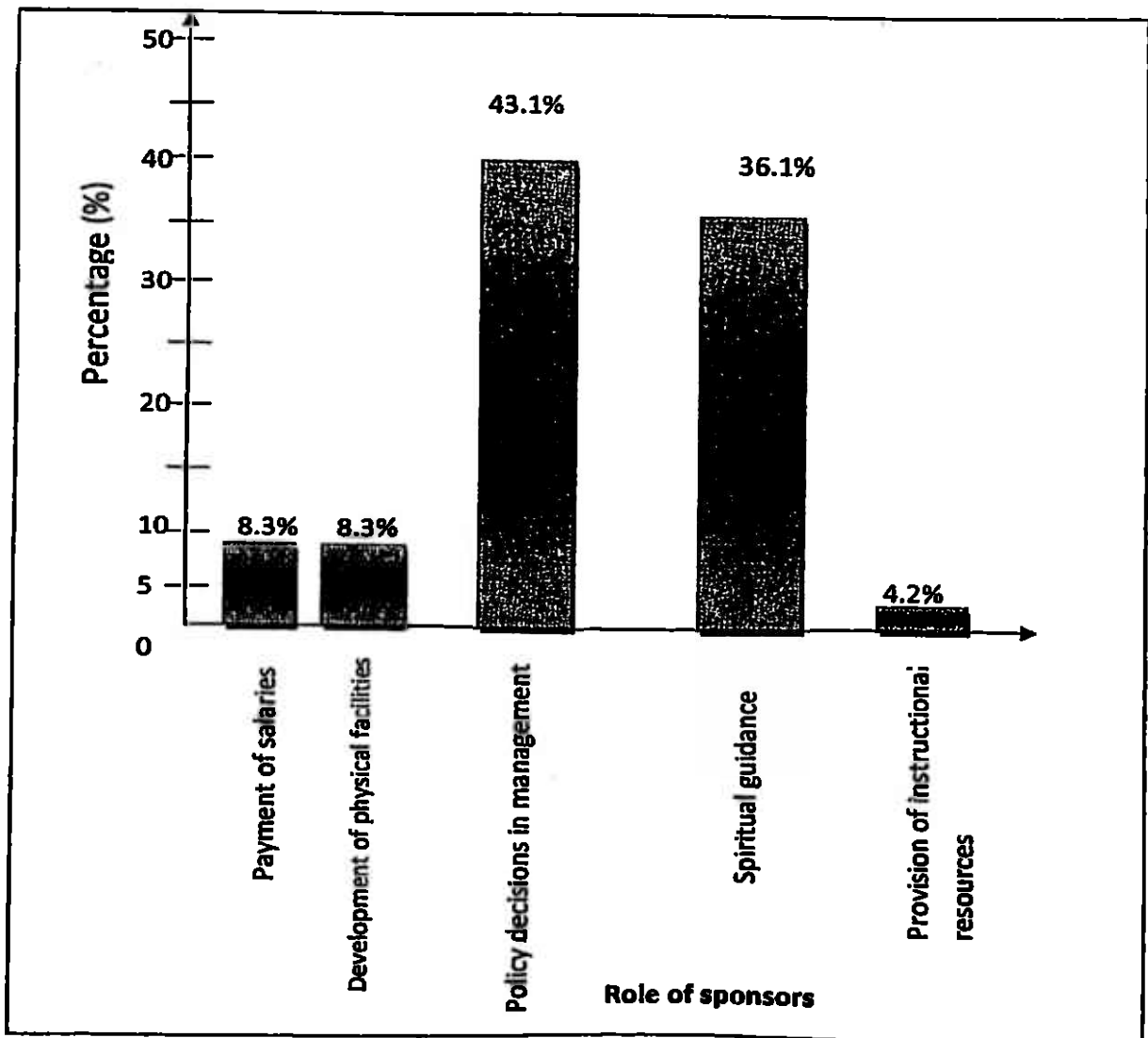


The findings on figure 4.11, show that majority of public ECD Centres in Manga district are sponsored by religious organizations (59.5), followed by 40.5% sponsored by DEB. The findings show that majority of ECD Centres are spiritually catered for so that complete holistic development of pupils can be enhanced.

The researcher asked the head teachers to state the role played by the sponsors in their ECD Centres. The responses are as shown on figure 4.12.

Figure 4.12: Role of Sponsor in ECD Centres

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The findings on figure 4.12 indicate that majority of public ECD Centres (43.1%) were assisted in policy making by the sponsor. This is followed by 36.1% in spiritual guidance, then 8.3% in payment of salaries and development of physical facilities and lastly 4.2% on provision of instructional

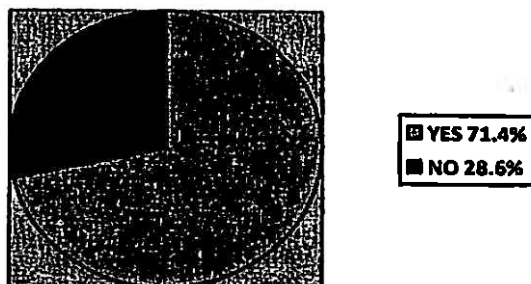
resources. The findings indicate that sponsors were not much concerned with curriculum resources but can take part in decision making and provide spiritual guidance which may hinder implementation of ECD programme.

4.4.2 The status of the teaching force.

The researcher asked head teachers to indicate the number of teachers currently teaching in public ECD Centres in Manga district. The results indicated that 76 teachers teach currently in public ECD centres in Manga district. This shows that an average of (1.8) one teacher in each ECD Centre.

The study further sought to establish from head teachers whether they have a shortage in their ECD Centres. The responses are shown on figure 4.13.

Figure 4.13 Head teachers responses on shortage of teachers in ECD centres.

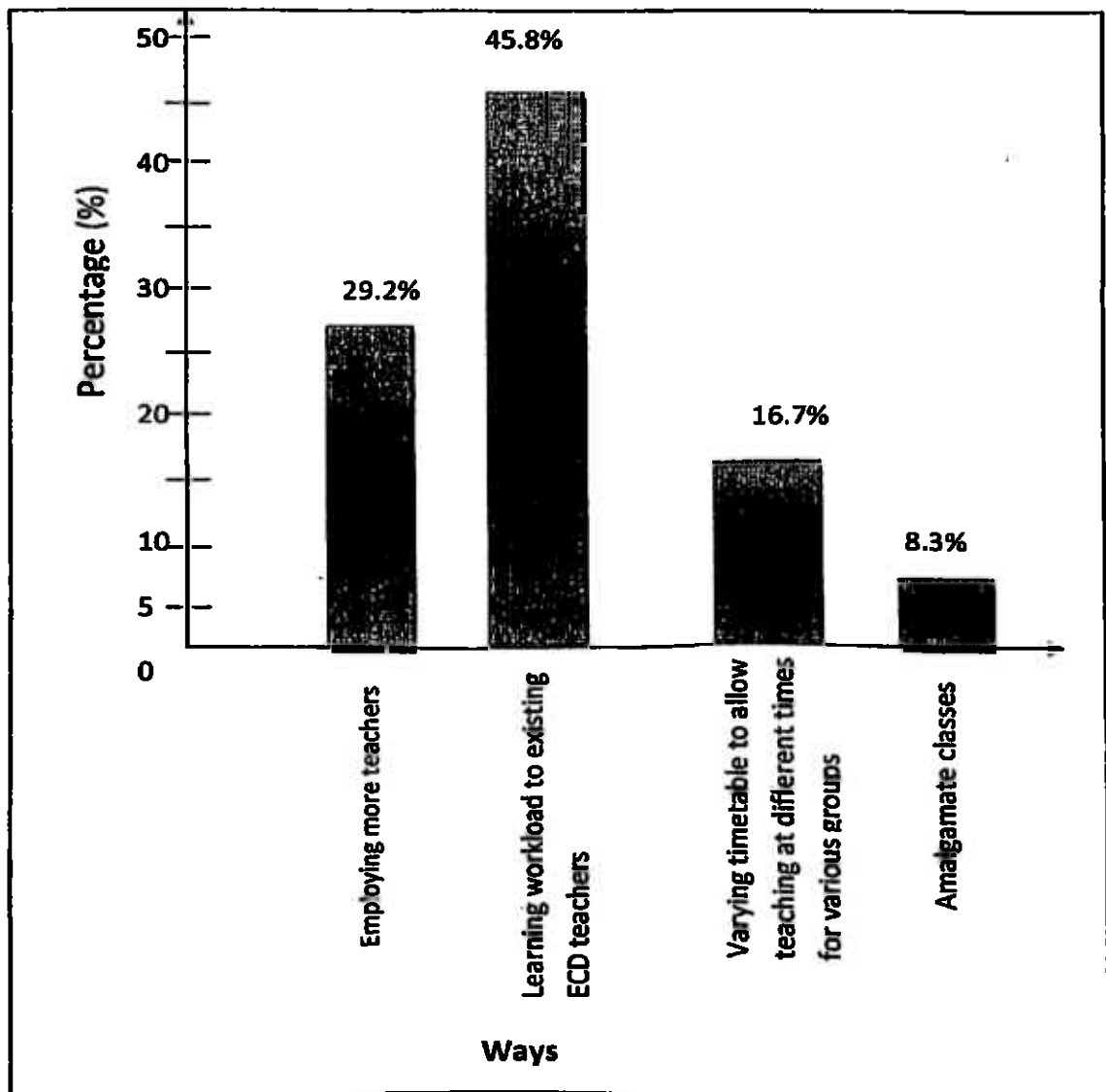


The findings on figure 4.13 show that majority of head teachers (71.4%) experience a shortage of ECD teachers in public ECD Centres in Manga district compared to 28.6% of head teachers who do not experience the shortage. The findings indicate that the shortage of ECD teachers exist in

Manga district. This shows that the curriculum implementation in the centres face a challenge as teachers face heavy workloads and more pupils to handle.

The researcher asked the head teachers to indicate ways in which they manage the shortage in their ECD Centres. The findings are presented as on figure 4.14.

Figure 4.14 Ways of Managing shortage of teachers



The findings on figure 4.14 indicate that majority of head teachers (45.8%) assign the extra workload to existing ECD teachers. This followed by requesting parents to employ more ECD teachers (29.2%), varying the timetable to suit different groups of pupils at different times (16.7%) and lastly by amalgamating the classes to accommodate the existing teachers (8.3%).

The findings show that ECD teachers are overloaded in ECD Centres. This can limit the assignments given in class and slow the feedback process.

4.5 Data interpretation and discussion.

This section presented the analysis of the data obtained from headteachers and teachers as well as observation of facilities in public ECD Centres in Manga district, based on research questions.

4.5.1 Training of Teachers

Research Question 1. What is the relationship between the teachers training and the quality of educational output?

The researcher sought from head teachers information on whether they have undertaken in service training on school administration. The results indicated that majority of head teachers (95.2%) had in service training as compared to 4.8% of head teachers without in service training. The findings indicate that majority of head teachers had training and therefore failure to sustain ECD programme cannot be attributed to lack of head teacher's training on school administration.

The researcher also sought to establish the extent to which head teachers training was useful in enhancing their performance in the management of ECD centres resources. The results indicated that all head teachers viewed training as useful in their management of ECD centres. The findings indicate that in service training helped head teachers in the custodian and use of resources in the ECD Centres.

The study established from head teachers that 67.1% of ECD teachers were trained as compared to 32.9% of teachers who were untrained. The findings further established that 88% of teachers had in service training while 12% of teachers had no in service training. These findings indicate that majority of ECD teachers have undergone in service training to facilitate efficient delivery of ECD programme in public ECD Centres and therefore failure or poor performance of ECD Programme cannot be attributed to lack of in service training of ECD teachers.

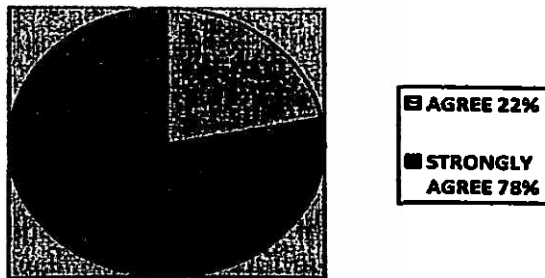
The study observed that in service training was useful to ECD teachers in their teaching in ECD Centres with 78.7% of teachers indicating that training was very useful while 21.3% of teachers indicating that it was useful. The findings show that majority of ECD teachers have taken courses in ECD and they are capable of providing efficient and effective teaching in ECD Centres. Therefore poor performance of pupils in ECD Centres cannot be attributed to lack of training of ECD teachers.

The study sought from head teachers whether the training of teachers improves the quality of educational output in public ECD Centres in Manga

district. The findings indicated that all headteachers (100%) agreed that teachers training improve the quality of educational output.

ECD Teachers were also asked by the researcher to indicate whether training of teachers increases quality of educational output. The results are presented as on figure 4.15

Figure 4.15 Teachers responses on training of teachers on educational output.



The results on figure 4.15 show that majority of ECD teachers (78%) strongly agrees that training of teachers increases the quality of educational output as compared to 22% of teachers who agrees that training of teachers increases the quality of educational output. These findings indicate that training of teachers is a pre-requisite to improvement of performance in ECD Centres leading to quality educational output.

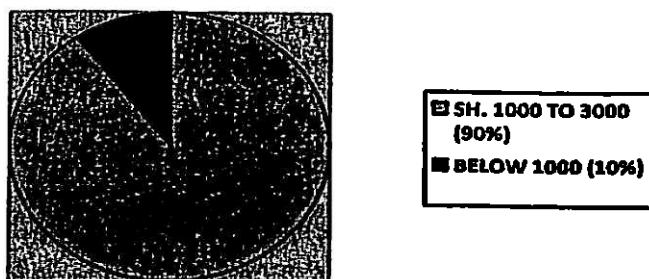
4.5.2 Salaries of ECD teachers

Research question 2. What is the relationship between the teacher's salaries and the quality of educational in ECD Centres?

The study asked the head teacher to indicate the earning bracket salary for ECD teachers per month. The findings show that majority of ECD teachers (95.2%) earned between sh. 500 to sh. 2900 in public ECD Centres in Manga district. This is followed by 4.8% of teachers who earned between sh. 3000 to sh. 6000. The findings indicated that ECD teachers are paid lowly in public ECD centres in Manga district. Their payments are just for survival and may not meet their basic needs.

The study further revealed the information on teacher's responses on their salary per month on figure 4.16.

Figure 4.16 Teachers responses on their earning bracket.



The results on figure 4.16, indicates that majority of ECD teachers (90%) earned between sh. 1000 to sh. 3000 as compared to 10% of teachers earned below sh. 1000.

These findings are indicators of poor working conditions for ECD teachers creating a demotivation among ECD teachers in public ECD Centres in Manga district. These earning brackets could make teachers to spend less time on ECD pupils and spend more time on private activities to support their families.

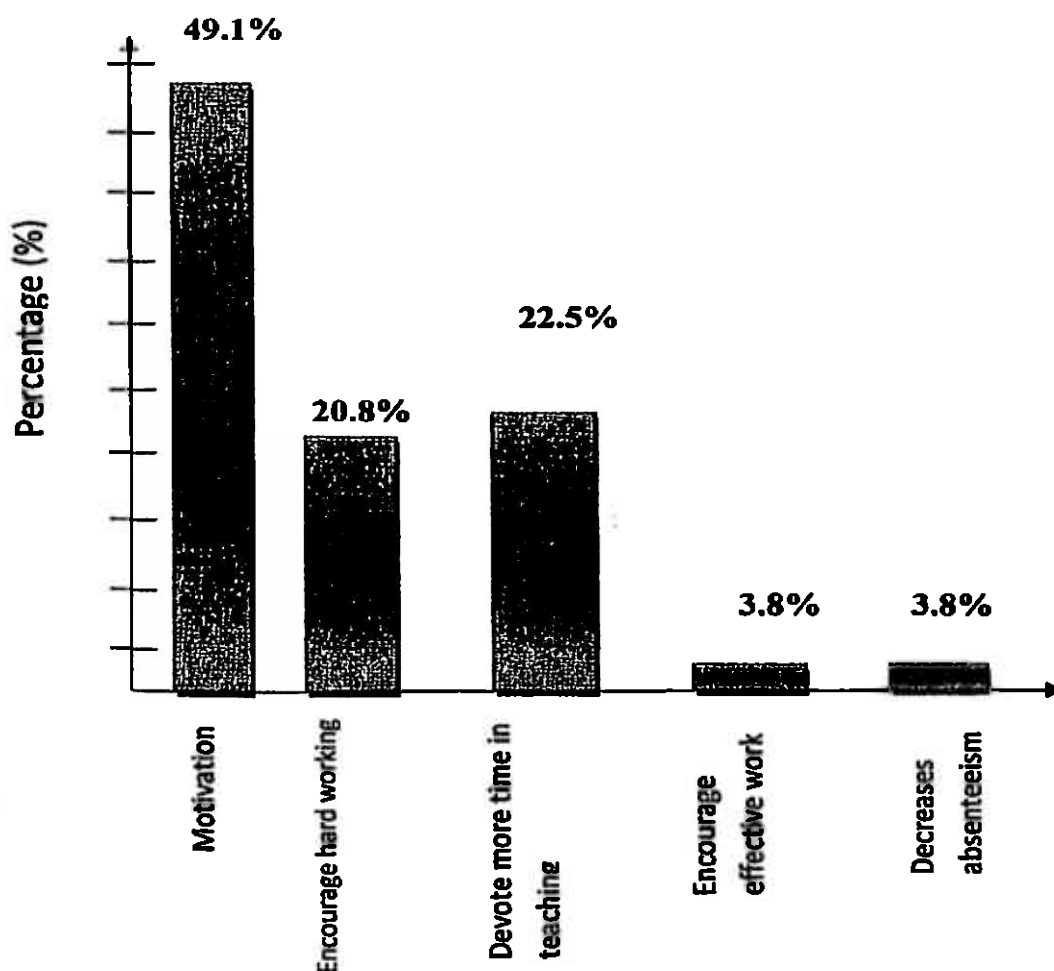
Therefore poor performance and failure of ECD programme may be attributed to earning capacities of ECD teachers in public ECD Centres.

4.5.2.1 Effects of teacher salary on quality of educational output

Head teachers were asked by the researcher to show whether salary of teachers affects the quality of educational output. The findings revealed that all head teachers (100%) responded that salary of teachers affects the quality of educational output. The researcher also asked ECD teachers to indicate whether the salary of teachers increases the quality of educational output. The findings indicated that 91.8% of teachers agreed that salary of teachers increases quality of educational output as compared to 8.2% of teachers who disagreed. These findings indicate that salary increases among teachers motivates them to work hard in their performance of service delivery on ECD Centres.

The researcher also sought from teachers why they support the statement that salary of teachers increases quality of educational output in public ECD Centres in Manga district. The findings are presented as on figure 4.17.

Figure 4.17 Reasons why salary increases quality of educational output.



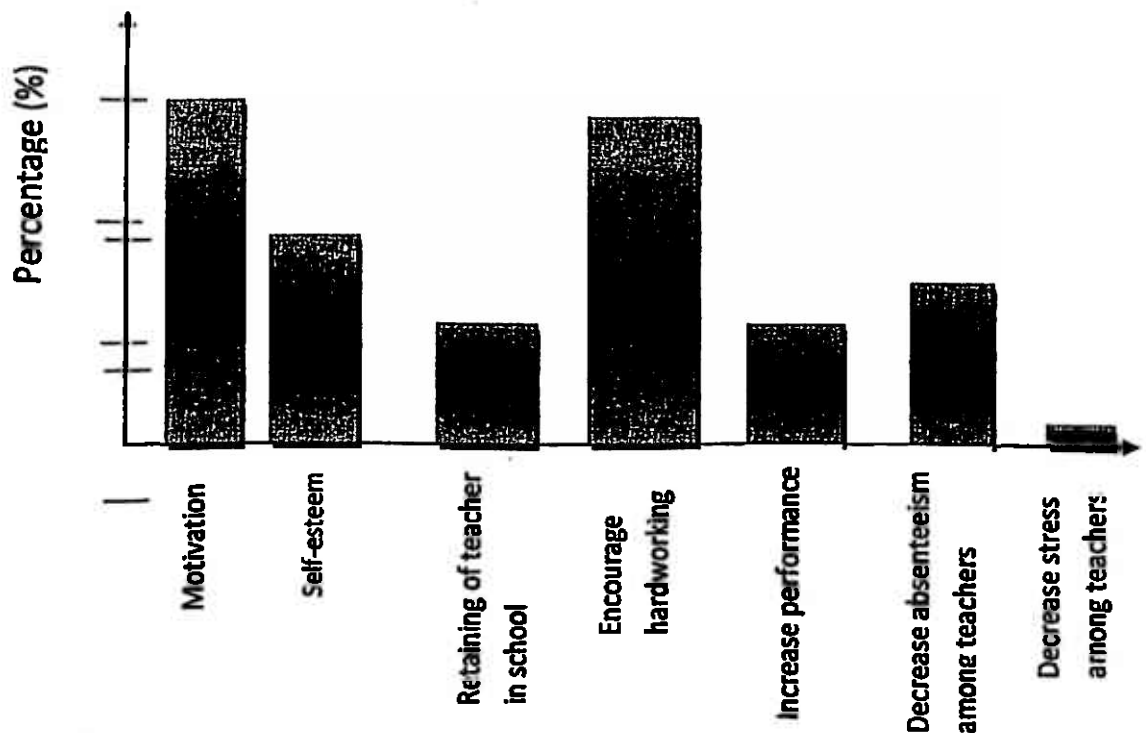
The responses in figure 4.17 indicates that majority of teachers (49.1%) believed that salary of teachers increases motivation of ECD teachers. This is followed by 22.5% of teachers response that salary of teachers enables them to work hard, 20.8% of teachers believed that the salary allows ECD teachers to devote more time in teaching and learning while 3.8% of teachers agreed that salary will reduce absenteeism and encourage effective work done. This findings show that majority of teachers agree that salary brings motivation

among teachers and therefore low salary could make teachers demotivated affecting implementation of ECD programme negatively.

4.5.2.2 Ways in which salary affect educational output

The researcher asked the head teachers of public ECD Centres in Manga district to indicate ways in which teachers' salary affects quality of educational output. The responses were presented as on figure 4.18.

Figure 4.18: Effects of salary on quality of educational output



The findings in figure 4.18 indicates that majority of head teachers (29.2%) attributed salary to the increase of motivation among ECD teachers. This is followed by 20.8% of head teachers indicating hardworking as a reason for

salary of teachers, 18.8% of head teachers on self esteem, 10.4% of head teacher on retaining teachers and discouraging absenteeism, 6.3% of head teachers on increase of performance and 4.1% of head teachers indicated decrease of stress among teachers as a reason for teacher's salary. This findings indicates that salary of teachers have a positive bearing on the performance of teachers in ECD Centres. A teacher who is motivated is able to dedicate more time in the teaching and learning process for the benefit of the pupils increasing their achievement in the ECD programme. Therefore failure of ECD programme may be attributed to salary paid to ECD teachers.

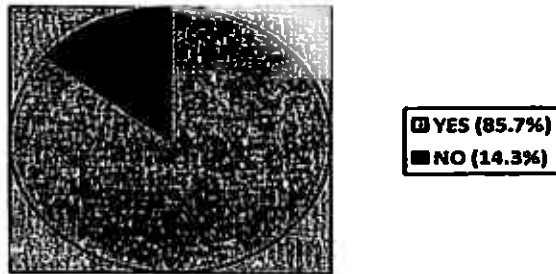
4.5.3 Class size

Research Question: How does class-size affect the quality of educational output in ECD Centres?

4.5.3.1 Teacher's attention to pupils

The study sought from head teachers of public ECD Centres in Manga district an information on whether class size affect the teachers' individual attention to pupils in their centres. The findings are shown as on figure 4.19.

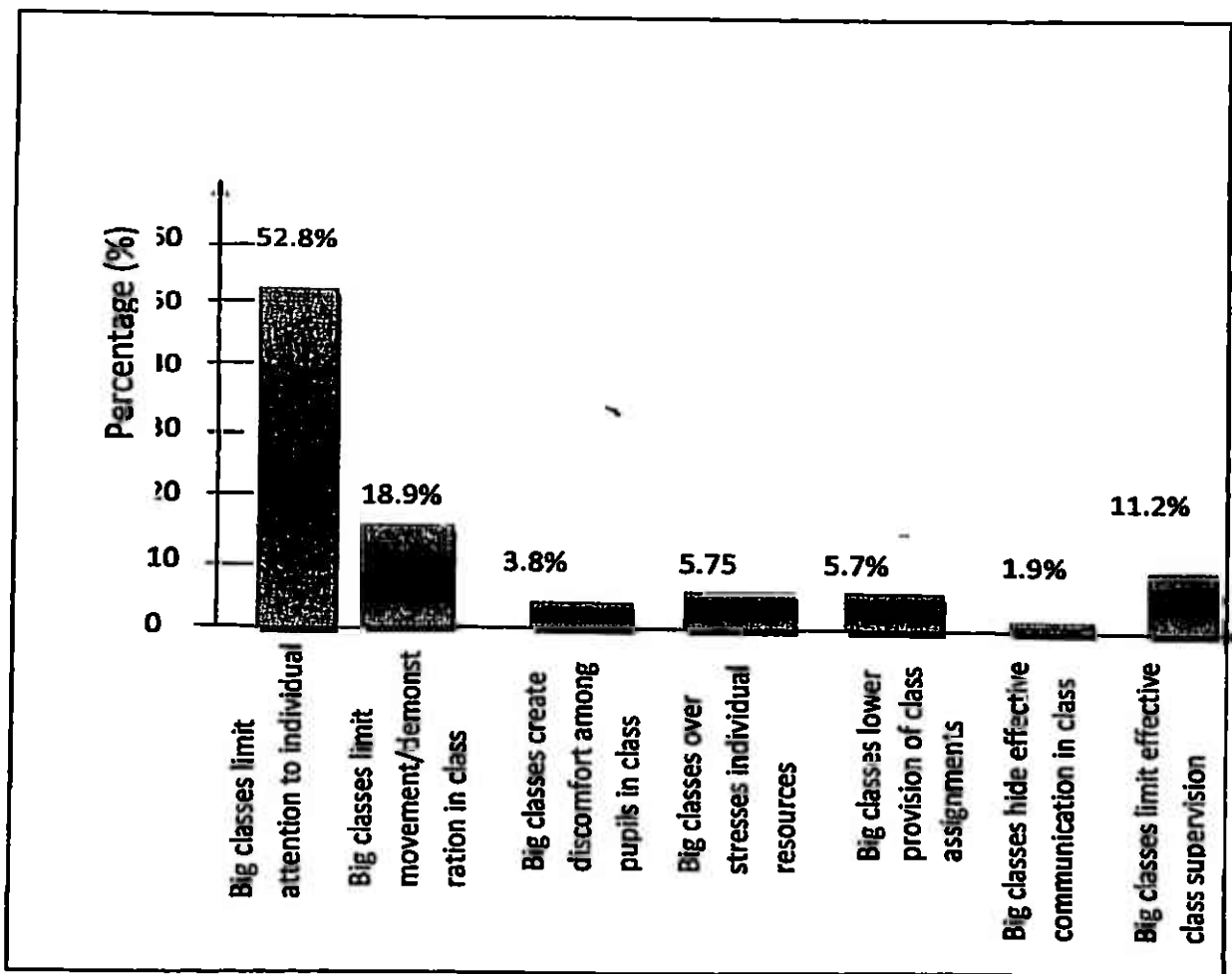
Figure 4:19: Head teacher's responses on class size and teacher's attention to pupils.



The findings in figure 4.19 indicate that majority of head teachers' (85.7%) agreed that class-size affects teacher's attention to pupils in public ECD Centres as compared to 14.3% of head teachers who didn't agree. The study further observed that 98% of ECD teachers agreed that class size affects teacher's individual attention to pupils while 2% of teachers disagreed.

These findings indicate that individual attention to pupils can be influenced by class size. The study observed that 36% of the head teachers indicated that large classes lowers personal attention to pupils , 19.5% of head teachers noted that large classes makes it difficult to identify pupil's the needs, 12.1% of head teachers indicated that large classes limits class control while 9.8 % of head teachers showed that large classes limits class assignments and overstretches instructional resources. The study further indicated the responses from ECD teachers as on figure 4.20

Figure 4.20 Ways class-size affects teacher's attention to pupils (teacher's responses)

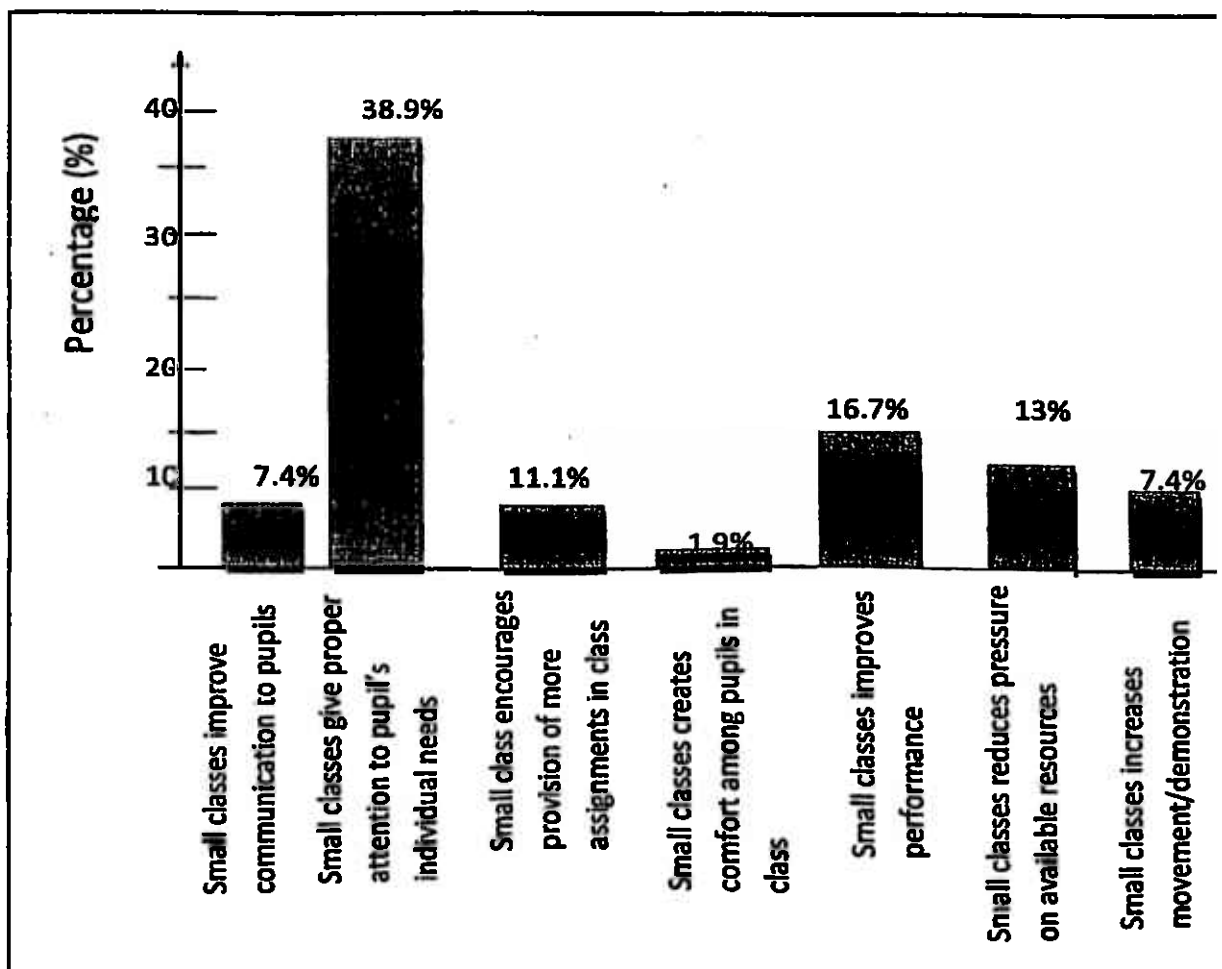


The findings on figure 4.20, indicate that majority of teachers (52.8%), indicated that big classes limit teachers' individual attention to pupils' needs. This is followed by 18.9% of teachers who noted that big classes limit movement/demonstration in class, 11.2% of teachers indicated that big classes limit effective class supervision among other ways., The findings indicates that though large classes lowers unit costs, it can affect ECD curriculum implementation in classes lowering performance of pupils and therefore class-size can be attributed to the failure of ECD programme.

4.5.3.2 Effects of class-size on quality of educational output

The researcher asked teachers to indicate whether class size affect the quality of educational output. The findings indicated that majority of teachers (94%) agree that class-size have effects on educational output compared to 6% of the teachers who didn't agree. The study observed the following ways in which class size affects educational output as on figure 4.21

Figure 4.21 Teachers responses on ways class size affects quality of educational output.



The findings on figure 4.21, indicate that majority of teachers (38.9%) believes that small classes gives proper attention to pupils individual needs. This is followed by 16.7% of teachers who believes that small classes improves performance in ECD Centres, 13% of teachers believes that small classes reduces pressure on available instructional resources, 11.1% of teachers believes that small classes encourage provision of assignments in classes, 7.4% of teachers believes that small classes increases movement/demonstration in classes and improves communication, 3.6% of teachers indicate that small classes affect ECD enrolment and lastly 1.9% of teachers noted that small classes creates comfort among pupils in class. The findings show that class size may affect communication, content coverage, performance and identification of pupil's needs and therefore can affect quality of educational output negatively.

4.5.4: Unit Costs

Research question: What is the relationship between enrolment and unit costs of providing education in public ECD Centres?

4.5.4.1: Relationship between unit costs and enrolment in the provision of goods and services in ECD Centres

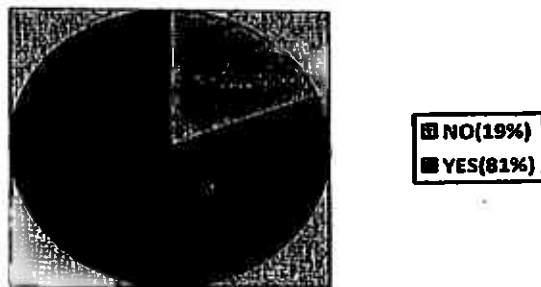
The study sought opinions of head teachers of public ECD centres in Manga district on whether, as enrolment of pupils increases up to a maximum point, unit costs of providing goods and services in ECD Centres decreases and vice versa. The findings revealed that 52.4% of head teachers strongly agreed, 23.8% of head teachers agreed, 14.3% of head teachers were uncertain, 7.1%

of head teachers disagreed and 2.4% of head teachers disagreed. The study further revealed that 33.4% of teachers strongly agreed, 45.8% of teachers agreed, 10.4% of teachers were uncertain while the same percentage of teachers disagreed. These findings indicate that there is a strong negative relationship between enrolment and unit costs up to a maximum point after which the relationship starts to take a positive route.

4.5.4.2: Influence of unit costs on the quality of educational output

The researcher asked head teachers of public ECD Centres in Manga district to indicate whether unit costs influence the quality of educational output in ECD Centres. The findings are as shown on figure 4.22.

Figure 4.22 Head teacher's opinions on influence of unit costs on educational output

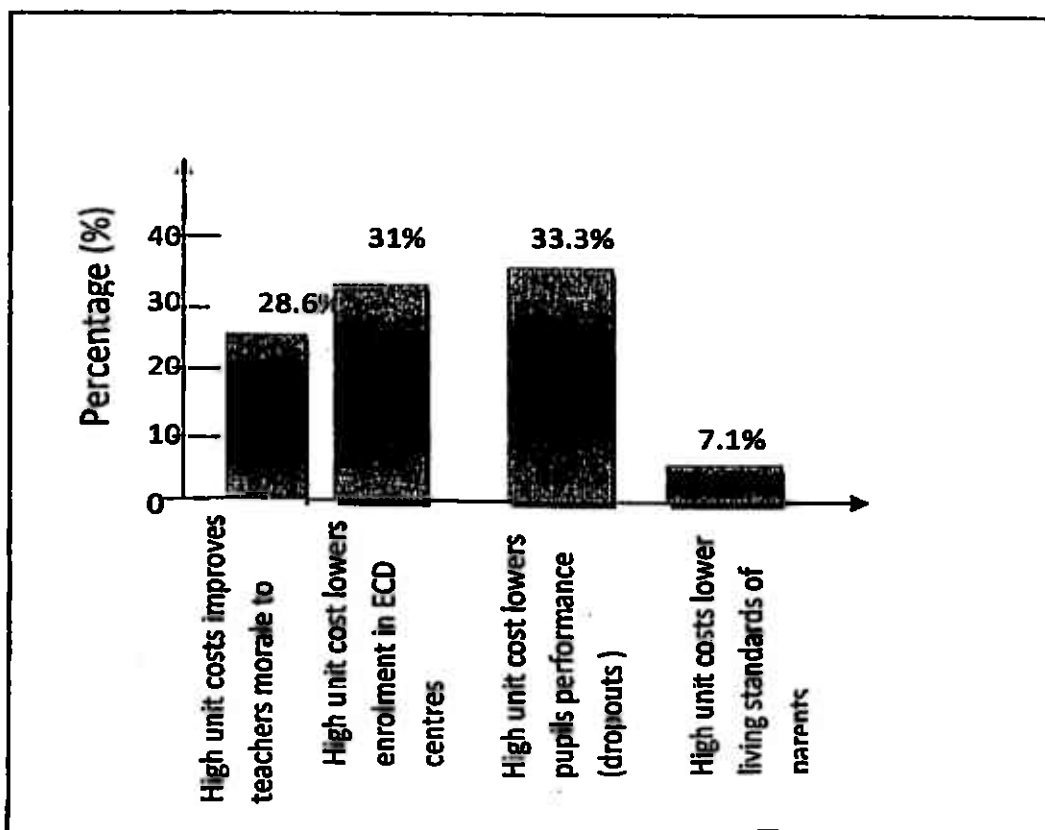


The findings on figure 4.22 show that majority (81%) of head teachers responded that unit costs influences the quality of educational output, as compared to 19% of head teachers who indicated that unit costs does not affect the quality of educational output.

4.5.4.3: Reasons why unit costs influences quality of educational output

The researcher asked head teachers to indicate reasons why unit costs have an influence on the quality of educational output in public ECD Centres in Manga district. Their results are presented as on figure 4.23.

Figure 4.23 Reasons why unit costs influence quality of educational output.



The findings on figure 4.23 indicates that majority of head teachers (33.3%) expressed their view that high unit costs lowers pupil's performance in ECD Centres because most pupils will be absent or drop out. This is followed by 31% of head teachers who noted that high unit costs lowers enrolment in ECD

Centres, then followed by 28.6% of teachers who indicated that high unit costs may improve performance of teachers through increment of salaries and provision of necessary resources required in teaching and learning. Lastly, 7.1% of head teachers noted that high unit costs lower the living standards of parents affecting the home environment pupils.

The findings indicate that increase of unit costs could affect negatively the provision of goods and services in ECD Centres by lowering enrollment, performance of pupils and lowering the living standards of the community that provides pupils to ECD centres. These effects result from the increase of costs of resources that provide efficient ECD programme in the centres. However increased salaries can be a motivation to teachers working in the ECD centres. Unit costs can affect the provision of instructional resources and the funds that support the teaching force in the centres hindering efficient delivery of services in ECD centres. Poor payment and inadequate resources are barriers to internal efficiency in the centres.

4.5.5: Teaching and Learning Resources

Research question: What is the state of teaching and learning resources in public ECD Centres?

4.5.5.1: Adequacy of Teaching and Learning Facilities.

The study asked head teachers to provide information on the availability of teacher's and learning resources in public ECD Centres in Manga district. Their responses are presented as on table 4.3.

Table 4.2: Adequacy of Teaching/Learning Resources

Resource	Response	Frequency	Percentage
Desks	Adequate	10	23.8
	Inadequate	32	76.2
	Total	42	100.0
Chairs	Adequate	15	35.7
	Inadequate	24	57.1
	Not available	3	7.2
	Total	42	100.0
Textbooks	Adequate	3	7.2
	Inadequate	31	73.8
	Not available	8	19.0
	Total	42	100.0
Teaching Aids	Adequate	6	14.3
	Inadequate	33	78.6
	Not available	3	7.1
	Total	42	100.0
Exercise books	Adequate	17	40.5
	Inadequate	24	57.1
	Not available	1	2.4
	Total	42	100.0
Science kit	Adequate	2	4.8
	Inadequate	2	4.8
	Not available	38	90.4
	Total	42	100.0

According to the findings presented on Table 4.2, majority of ECD Centres had inadequate desks (76.2%), inadequate textbooks (73.8%), inadequate teaching aids (78.6%), inadequate exercise books (57.1%) and absence of science kits (90.4%). The study observed that pupils are congested on each

desk which could limit their capacity of participating in class activities. ECD teachers find it hard to control the class where some pupils sit at the floor while others are congested. The study further show that ECD teachers are not comfortable in their working places because of inadequacy of chairs. It becomes difficult to mark pupils' assignments without sufficient chairs in the ECD centres.

Inadequacy of the teaching aids is an indication that a pupil finds it hard to grasp what has been taught in class properly. Teaching aids assists pupils to get a clear image of the content being taught and their inadequacy indicates that curriculum content is not being delivered properly to the pupils. Therefore poor performance in ECD centres could be attributed to inadequate teaching aids. Science kits are important for aids during emergencies. ECD children are fond of harming each other and it is important to have the kits. However their absence in ECD centres could accelerate absenteeism of pupils and eventually lead to dropouts and repetitions, hindering internal efficiency in ECD centres.

4.5.5.2: Adequacy of physical facilities

The study asked the head teachers of public ECD Centres in Manga district to indicate the current information on the availability and adequacy of ECD Centres facilities. Their responses are presented as on Table 4.4.

Table 4.3: Availability and adequacy of ECD facilities

Resource	Response	Frequency	Percentage
Classrooms	Adequate	18	42.9
	Inadequate	23	54.8
	Not available	01	2.3
	Total	42	100.0
Playground	Adequate	34	81
	Inadequate	8	19
	Not available	0	0
	Total	42	100.0
Library/book box	Adequate	5	12.0
	Inadequate	15	33.3
	Not available	23	54.7
	Total	42	100.0
Toilets/latrines	Adequate	4	9.5
	Inadequate	21	50.0
	Not available	17	40.5
	Total	42	100.0
Urinals	Adequate	2	4.8
	Inadequate	18	42.9
	Not available	22	52.3
	Total	42	100.0
Kitchen	Adequate	0	0
	Inadequate	2	4.8
	Not available	40	95.2
	Total	42	100.0

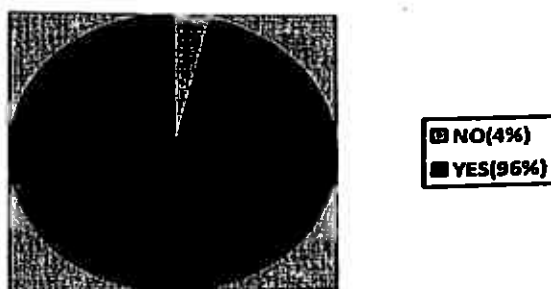
The findings on Table 4.3 indicate that majority of head teachers (54.8%) had inadequate classrooms, 81% of the head teachers had adequate playground, majority of the head teachers (54.7%) had no library or book box, majority of the head teachers (50%) had inadequate latrines, majority of the head teachers

(52.3%) of the head teachers had inadequate urinals and majority of head teachers (95.2%) had no kitchen facility for the ECD Programme.

The study indicates that ECD facilities are inadequate for the implementation of ECD programme. ECD facilities such as classrooms, libraries, toilets, kitchen and water among others have a direct bearing on good performance. These resources encourage learners to participate in the learning process, motivate them, cater for their individual differences and enable them to gain experience by using their senses. Therefore resources are instrumental for internal efficiency of ECD centres.

The researcher sought from ECD teachers in public ECD Centres in Manga district whether teaching and learning resources affects educational output. The results are shown on figure 4.24.

Figure 4.24 Teachers' responses on whether teaching and learning resources affect educational output.



The findings on figure 4.24 indicates that 96% of the teachers agreed that teaching and learning resources affect the quality of educational output as

compared to 4% of the teachers who disagreed. The findings indicate that teaching and learning resources creates motivation in learning by supporting the learning process. They enable learners to participate in assignments, support teaching as visual aids and increases teachers' attention to pupils.

4.5.5.3 Average Textbook – pupil ratios.

The study asked the ECD teachers of public ECD centres in Manga district to indicate the average textbook – pupil ratio in their centres. The findings are presented as in Table 4.4.

Table 4.4 Textbook-pupil ratio.

Class	Responses	frequency	percentage
Baby class	1:1 – 1:5	1	11.1
	1:6 – 1:10	3	33.4
	1:11 – 1:15	2	22.2
	1:16 – 1:20	2	22.2
	Above 1:20	1	11.1
	Total	9	100.0
Nursery	1:1-1:10	14	50.0
	1:11-1:20	9	32.1
	1:21-1:30	2	7.1
	Above 1:30	3	10.8
	Total	28	100.0
Pre unit	1:1-1;10	2	13.3
	1:11-1;20	3	20.0
	1;21-1:30	6	40.0
	Above 1:30	4	26.7
	Total	15	100.0

The findings on Table 4.4 show that majority ECD centres had between 1:6 to 1:10 (33.3%) textbook-pupils ratio in baby classes, 1:1 to 1;10 (50%) in nursery and 1:21-1:30 (40%) in pre units. The study observed that textbooks are a major problem in ECD centres. The findings indicate that 88.9% of teachers noted a ratio of above 1:5 in baby class, 50% of teachers noted a ratio of above 1:10 and 86.7% indicated ratios above 1:10. The findings are an indication that textbooks are scarce in the ECD centres. Inadequacy of textbooks can affect internal efficiency because of limited use of textbooks by teachers and limited reading activities in the ECD centres. Textbooks enhance pupil-pupil interactions and teacher –pupil contacts in order to improve performance of pupils. Centres run with a high number of pupils who may not grasp properly what teachers teach in class because they have no textbooks to refer.

4.5.6 Wastage

Research question: How does educational wastage affect internal efficiency in public ECD centres?

4.5.6.1 Repetition in ECD centres

The researcher asked the head teachers of public ECD centres in Manga district on whether they experience repetition of pupils in their centres. The findings are presented as shown on figure 4.25.

Figure 4.25 Head teachers' responses on repetition in ECD centres

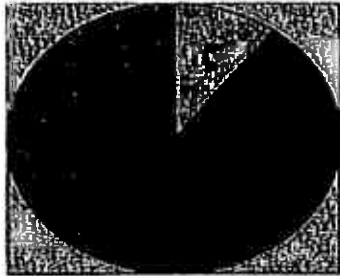


The responses on figure 4.25 indicate that majority of head teachers (83.3%) experience repetition in their ECD centres as compared to 16.7% of the head teachers who didn't experience repetition in their ECD centres.

The findings indicate that repetition is experienced in ECD centres. The study observed that 28.1% of teachers noted absenteeism as the main cause of repetitions. 18.2% of teachers mentioned poor performance, 14.9% of teachers noted diseases and 13.2% noted poverty among other reasons for repetitions in ECD centres. The findings indicate that unless strict measures are taken to reduce absenteeism, diseases and poverty in ECD centres such as provision of meals in the centres, provision of free ECD programme to all children and provision of free medical services for the ECD children, repetitions could be a threat to the success of ECD programme in the region.

The researcher requested teachers of public ECD centres in Manga district to indicate whether repetition in any grade is necessary in their ECD centres. Their responses are presented as on figure 4.26.

Figure 4.26 Teachers responses on necessity of repetitions



□ NO(10.2%)
■ YES(89.8%)

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The findings on figure 4.26 indicate that majority of teachers (89.8%) favoured repetition as compared to 10.2% of the teachers who were not in favour.

The results show that teachers viewed repetition of any grade useful in their centres. The findings further found that 37.5% of teachers had coverage of the syllabus for pupils who missed were absent the previous year as the necessity for repetitions. This is followed by 25% of teachers indicating improvement of performance for those who performed poorly in the previous year, 23.2% of teachers noted the mastery of content for those who failed to master it in the previous year while 14% of teachers indicated children's maturity to the right age in the programme. The result further indicate that though repetition is regarded as a waste of resources invested in the previous year, it might turn out to be a gain for some children in future who may improve their performance and take advantages of future benefits in subsequent years of learning. Therefore repetition is necessary for holistic development of those

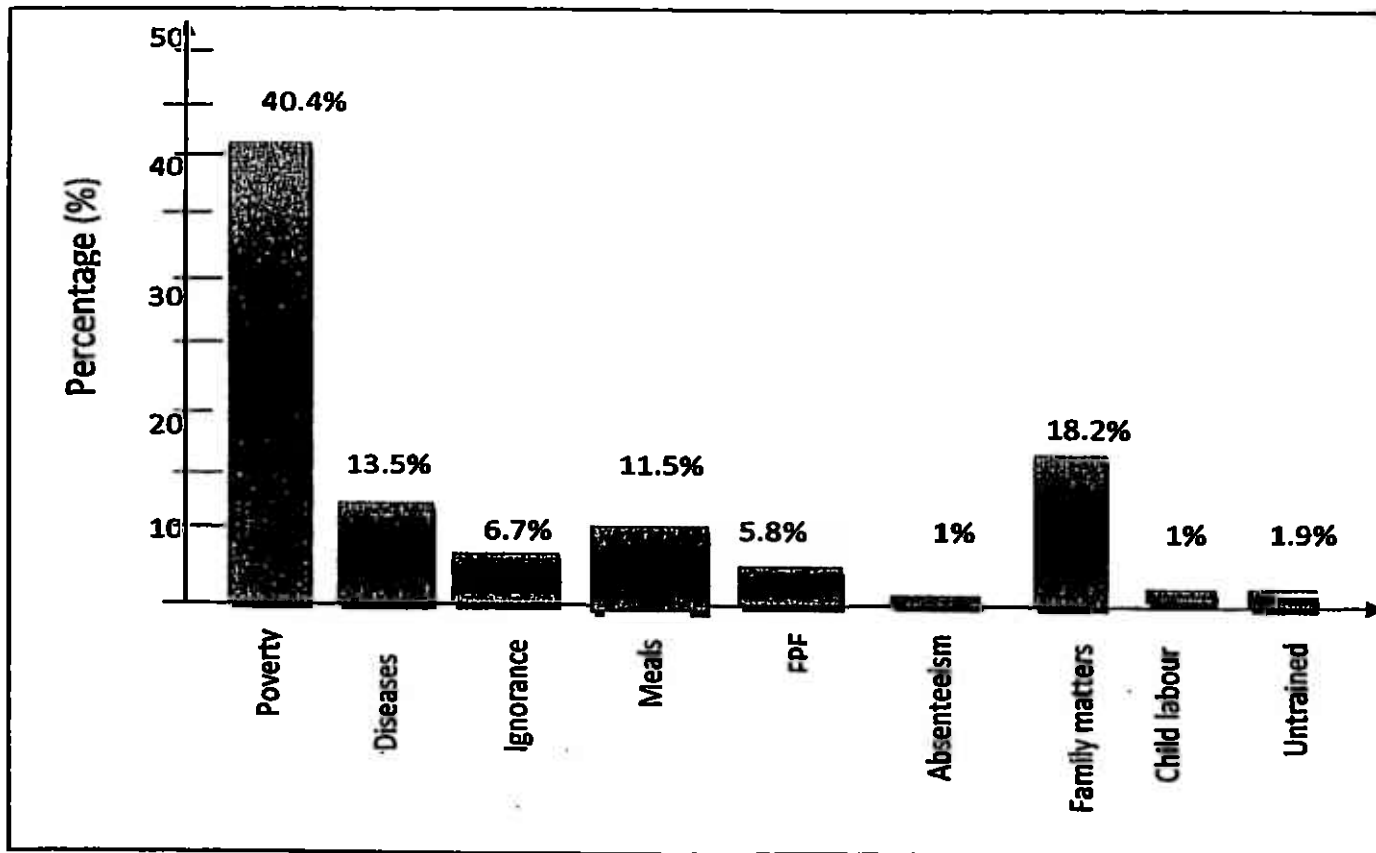
pupils who are slow learners and absent from school for reasons beyond their control.

4.5.6.2 Drop outs

The researcher asked the head teachers of public ECD centres in Manga district to indicate whether they experience ECD dropouts in their centres. Majority of the head teachers (90.5%) indicated that dropouts exist in their centres while 9.5% of head teachers did not experience dropouts. The findings show that despite importance of ECD in Manga district, some pupils do not wait to reap the benefits associated with the programme. The pupils do not complete the programme resulting to high opportunity costs and other direct costs which might have been used on the dropouts.

The study further requested the head teachers and ECD teachers to indicate the reasons for the dropouts in their centres. The study revealed that 49.1% of head teachers noted poverty as the main cause of dropouts, followed by diseases (14.8%), ignorance (11.1%), absenteeism (7.4%) and divorce (7.4%), child labour (4.9%) while 2.5% of head teachers indicated orphanage as the cause. the findings showed that poverty and diseases hinder participation of pupils in ECD centres. Since most of the centres are rural based, most parents are unable to offer basic needs to their children. This has made pupils to be malnutralised. The centres do not have feeding programmes and clean water as payment of fees is very poor due to poverty. Therefore poverty and diseases can make pupils not to concentrate in class and finally dropout due to poor performance. The result from teachers is presented as on figure 4.27.

Figure 4.27 Teachers reasons for ECD dropouts



The findings on figure 4.27 indicate that majority of ECD teachers (40.4%) attributed poverty as the main cause. This is followed by 18.2% of teachers who indicated divorce/family matters, 13.5% of teachers noted diseases, 11.5% of teachers indicated insufficient meals, 6.7% of teachers indicated ignorance, 5.8% of teachers noted free primary education, 1.9% of teachers noted untrained teachers while 1% of teachers indicated absenteeism and child labour. These findings are an indicator that majority of teachers believe poverty as the main cause of ECD dropouts. This concurs with Achoka et al (2007) who indicated that poverty is the main cause of ECD dropouts. Poor

payments has made ECD centres to pay teachers lowly and look for cheaper teachers ending up with form four leavers. This drop outs affects participation rates which eventually makes the system inefficient.

4.5.6.3 ECD Enrolments, Dropouts and Repetitions

The study sought from head teachers and ECD teachers of public ECD centres in Manga district information on enrolments, repetitions and dropouts in their centres. Their responses are as shown on table 4.5.

Table 4.5 ECD Enrollments, repetitions and dropouts

Year	Enrollments	Repeaters	Dropouts
2007	2190	236	434
2008	2817	289	368
2009	3009	212	283

The findings on Table 4.5 indicate that enrolment increased from 2190 pupils in the year 2007 to 2817 pupils in 2008. The enrolment further increased from 2817 pupils in 2008 to 3009 pupils in 2009. The findings indicate that public awareness is being felt in the district despite the region being a rural area. The findings further show that ECD programme is gaining ground as a better start for children from three and above years.

The findings further indicate that the number of repeaters increased from 236 pupils in 2007 to 289 pupils in 2008. However, the number decreased from 289 pupils in 2008 to 212 pupils in 2009. The findings indicate an existence of repetition in the district despite introduction of free primary education. Repetition could be attributed to the existence of poverty, diseases among other things. Repeaters increase unit costs leading to internal inefficiency.

The findings also indicate that the number of dropouts decreased from 434 pupils in 2007 to 368 pupils in 2008. The number of dropouts continued to decrease from 368 pupils in 2008 to 283 pupils in 2009. The findings indicate that ECD dropout continues to decrease, thanks to the CDF kitty that has provided some remedy to the problems parents experience in the district. The kitty has provided water to most ECD schools attached to public primary schools and has initiated food programmes for the children in some schools.

Internal efficiency was evaluated using the following grades;

Grade survival rates: It tries to establish how many pupils survived in a subsequent grade in a subsequent year. Its aim is to assess the extent to which pupils move between successive grades in the ECD system. Though data was scarce from the subsector, grade survival rates for 2008 and 2009 are as follows;

2008=2817-289

2190

= 1.15

$$2009 = \frac{3009 - 212}{2817} = 0.99$$

This findings show that grade survival rates decreased from 1.15 in the year 2008 to 0.99 in the year 2009. The findings indicate slow movement of ECD children from one grade to another therefore pointing to a lot of wastage in the subsector.

Grade wastage rate: It indicates the problems of repeating and dropouts in the ECD system. It shows those pupils who fail to be promoted to a subsequent grade by the original enrolment in the previous grade.

$$2008 = \frac{2190 - (2817 - 289)}{2190} = -0.15$$

$$2009 = \frac{2817 - (3009 - 212)}{2817} = 0.007$$

Grade wastage rate increased from -0.15 to 0.007. The findings indicated that wastage in ECD centres is on the increase.

Repeaters rates: It the rate at which pupils repeats as they move along the grades.

$$2008 = \frac{289}{2190}$$

$$= 0.132$$

$$2009 = \frac{212}{2817} = 0.075$$

The findings indicate that repeaters rate decreased from 0.132 in 2008 to 0.075 in 2009. The number of pupils who were repeating in classes decreased as they moved to the year 2009 showing an improvement in the internal efficiency in the ECD system.

Dropout rates: It indicates the figure of pupils we cannot account for after the promotion of pupils and those who have repeated have been deducted from the original enrolment in the subsequent year.

$$2008 = \frac{2190 - (2817 - 289) + 236}{219} = -0.262$$

$$2009 = \frac{2817 - (3009 - 212) + 289}{2817} = -0.095$$

The findings indicate that dropout rates dropped from -0.262 in 2008 to -0.095 in 2009. This shows an improvement of the system in reducing waste.

These findings indicate that though repetition and dropouts exists in public ECD centres in Manga district, the subsector slowly is gaining ground to improve its internal efficiency. However the improvement is so slow to be seen by the stakeholders.

CHAPTER FIVE

SUMMARY OF THE STUDY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter looks at the summary of the findings as obtained from respondents who included head teachers and teachers of public ECD centres in Manga district. It also contains the conclusion of the study, recommendations and suggestions for further research.

5.2 Summary of the Findings

The purpose of the study was to examine factors influencing internal efficiency in public ECD centres in Manga district, Kenya. To achieve this, research questions of the study on teacher's training, teacher's salaries, class-size, unit costs, teaching and learning resources and educational wastage were formulated.

The study adopted a descriptive survey designed to establish the factors influencing internal efficiency in public ECD centres in Manga district. The study targeted a population of 56 public ECD centres, 56 head teachers and 60 ECD teachers in Manga district out of which a sample of 48 public ECD centres, 48 head teachers and 56 teachers was selected for the study.

Data was collected using questionnaires and an observation schedule, coded and classified into major themes from which a summary report was made. Quantitative data was analyzed using descriptive statistics supported by

Tables, graphs, frequency distributions and percentages. Data analyzed formed the basis for the research findings, conclusions and recommendations for the study.

The results obtained from teachers and head teachers as well as from the observation carried out by the researcher revealed that gender parity has not been observed in the posting and promotion of head teachers in public ECD centres in Manga district as seen by a higher number of male head teachers than female head teachers. The study also revealed that more females unlike males are training to be ECD teachers.

The findings on the age bracket of head teachers revealed that young teachers are disadvantaged in promotions as seen by a higher number of head teachers at the age of over 41 years. The study also indicated that young ECD teachers were more in the public ECD centres in Manga district than their old counterparts.

The findings on the highest academic qualifications revealed that head teachers had low academic qualifications to head ECD centres and therefore could affect the implementation of ECD programme. The findings also revealed that ECD teachers had minimum academic to teach in public ECD centres and therefore could not affect the implementation of ECD programme.

The findings on the highest professional qualifications revealed that head teachers had minimum professional qualifications to head ECD centres and therefore failure of the ECD programme could not be very much attributed to their professional qualifications. The study also revealed that ECD teachers

had minimum professional qualifications to teach in public ECD centres and therefore failure of ECD programme may not be attributed to their professional qualifications.

The findings on the administrative experience revealed that head teachers had enough administrative experience to manage public ECD centres and this could positively affect the administration of the centres. The findings on ECD teacher's experience in teaching revealed that teachers had sufficient experience that could lead to the success in the implementation of ECD programme.

The findings on the location of ECD centres revealed that most of the ECD centres in Manga district were located in rural areas where poverty prevails, limiting movement of ECD resources to and out of the ECD centres.

The result on the sponsorship of ECD centres revealed that most ECD centres were sponsored by religious organizations who give spiritual guidance and takes part in decision making.

Findings on teachers training revealed that most of the head teachers had in service training and therefore failure of ECD programme cannot be attributed to their lack of training. The result also revealed that training was highly useful to head teachers in enhancing their performance in management of ECD centres. Findings on the training of ECD teachers revealed that majority of them had training sufficient for teaching in ECD centres. The study further indicated that in- service training was useful to teachers in teaching and therefore increased the quality of educational output.

Findings on teacher's salaries showed that ECD teachers were paid lowly affecting their performance in ECD programme. The study further revealed that teacher's salary increases the quality of educational output by creating motivation, decreasing absenteeism and making teachers to devote more time in ECD programme.

On class size, the study revealed that teacher's individual attention to pupils was affected by class size. The result indicated that an increase in class size negatively affected teacher's individual attention to pupils. The respondents further revealed that large class sizes affected the quality of educational output negatively by limiting effective communication, creating discomfort, overstretching the available resources, lowering provision of class work and limiting class control/supervision among other things.

The findings obtained from teachers and head teachers concerning unit costs revealed that there is a negative relationship between unit costs and enrolment in ECD centres until a maximum point is reached after which the relationship becomes positive. The result further revealed that unit costs influence the quality of educational output by affecting pupil's performance, teacher's morale, lowering the parent's standard of living among other things.

The findings obtained from head teachers, teachers and an observation schedule indicated that teaching and learning resources were inadequate in most ECD centres in Manga district. The study revealed that desks, textbooks, chairs, science kits, classrooms, libraries toilets, urinals, kitchen among other facilities were inadequate in the centres. The result further indicated that the

availability of teaching and learning resources affected the quality of educational output positively.

The findings on wastage in ECD centres revealed that wastage exist in the centres in form of repetitions and drop outs. The study revealed that absenteeism, underage, poor performance, diseases, poverty, ignorance, lack of proper nutrition and family divorce were among other reasons that caused repetitions in ECD centres. The result further indicated that poverty, diseases, free primary education, absenteeism, child labour, ignorance, orphanage and family divorce were reasons for ECD drop outs. The study revealed that repetitions and dropouts wasted resources and increased unit costs in ECD centres leading to internal inefficiency.

5.3 Conclusion of the study

The introduction of ECD programme in Manga district was seen as a positive move towards improving educational standards in the district. The programme was seen as a move to lay a strong foundation on children so that they can have a strong start. The community has become aware of the programme and increased their enrolment in public ECD centres in order to give their children holistic development.

However, this noble idea has been overshadowed by a number of challenges facing the implementation of the ECD programme. Some of the factors as addressed in this study included low payment of ECD teachers, insufficient training on ECD teachers, increase in unit costs, inadequacy of teaching and learning facilities, large class sizes and wastage in form of repetitions and drop

out rates. These factors are barriers to the realization of internal efficiency in ECD centres. It is therefore necessary to address these challenges so that this noble idea of providing ECD programme retains its intended purpose which is to ensure holistic development of human resources.

5.4 Recommendations of the study

In view of the findings discussed, this study makes the following recommendations:

- 1. New physical facilities should be build and renovations of the old ones be done in public ECD centres to fit pupil's individual needs.**
- 2. More ECD teachers should be hired to fill the gaps where shortages exists and balancing of staffing should be done to ensure that gender parity is maintained and reduce teacher pupil ratio to the recommended level.**
- 3. Funding of ECD centres by the government should be increased to ensure adequacy of teaching and learning resources and prompt payment of ECD teacher's salaries.**
- 4. The government should provide free ECD programme so as to ensure a compulsory programme to all pupils in Kenya. The government should also put ECD teachers on TSC payroll to earn better salaries as their counterparts in the primary level.**

5. **Headteachers and other members of staff should be sponsored to attend ECD in-service training programmes so that they can improve their administrative and teaching skills.**
6. **Teaching and learning resources should be improved in public ECD centres in order to improve teaching and learning in the ECD centres.**
7. **Intensive mobilization of resources and the continued sensitization of the community on the importance of ECD programme should be carried out to increase enrollment in the centres so as to benefit from large scale economies.**
8. **Proper and uniform structures should be put by the government to coordinate and control ECD programme so as to avoid fragmentation of the programme for homogeneity purposes.**

5.5 Suggestions for further Research.

In view of the delimitations of the study, the researcher suggested that:

1. **The study did not involve other stakeholders such as parents, pupils and ministry of education officials and therefore a similar study should be done with these people as respondents.**
2. **Since the study targeted Manga district leaving other districts, similar study should be carried out in other districts, provinces or the whole count**

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APPENDIX 1
LETTER TO RESPONDENTS

**THOMAS ONDIEKI GWACHI,
P.O BOX 3863,
KISII.
16TH JAN 2009**

Dear Sir/Madam

I am a post graduate student registered at the department of Educational Administration and Planning, University of Nairobi. I am currently carrying out a research on “The factors influencing internal efficiency in pre-primary schools attached to public primary schools in Manga district.

Since you are directly involved in the subject of this study, your completion of the attached questionnaire is important, all responses will be confidentially treated. All responses will be reported only in terms of entire population.

Thank you in advance for your anticipated cooperation.

Yours faithfully,

**Thomas Ondieki Gwachi
M.ED STUDENT**

APPENDIX 2

QUESTIONNAIRE FOR HEADTEACHERS

General instruction

This questionnaire is designed to collect information regarding head teachers demographic data, and the school data. The information you provide will be used to improve internal efficiency in Early Childhood Development centres and other educational institutions where applicable. Please, provide accurate information; your responses will be treated confidential.

This questionnaire should be completed by the head teacher or his/her assistant or senior teacher on his/her absence.

PART A: Demographic information

1. What is your gender? (tick)

Male [] Female []

2. What is your age bracket? (tick)

21-30 years [] 31-40 years []

41-50 years [] Over 50 years []

3. What is your highest Academic qualification?

i. Degree []

ii. EACE/KCE/KCSE or its equivalent []

iii. KAPE/CPE/KCPE or its equivalent []

iv. Any other (specify).....

4. What is your highest professional qualification?

i. B.Ed []

ii. S1/Diploma []

iii. P1 []

iv. P2 []

v. P3 []

vi. Any other (specify)

5. Have you ever undertaken in service training in school administration / management? (tick)

Yes [] No []

6. If yes to Q5 above, to what extent has the in service training enhanced your performance in the management of school resources? (tick)

High [] Moderate []

None []

7. How long have you been a head teacher? (tick)

Less than 1 year [] 1-5 years []

6-10 years [] Over 10 years []

8. How long have you been a head teacher in your present school? (tick)

Less than 1 year [] 1-5 years []

6-10 years [] Over 10 years []

PART B: Information concerning the pre-school (fill as appropriate)

9. Where is your school located? (tick)

Urban [] Rural []

10. Who is the sponsor of your school?

DEB [] NGO []

Religious organization []

Any other (specify).....

11. What is the role of the sponsor in promoting learning in the ECD centre?

Payment of staff salaries []

Development of physical facilities []

Policy decisions in management []

Spiritual guidance []

Provision of instructional resources []

Others (specify).....

.....

12. How many teachers do you have currently teaching in the ECD centre? []

13. Do you have any shortage of teachers in the ECD centre?

Yes [] No []

14. If yes to Q13, how do you manage the shortage.....?

.....
.....

15. Please indicate the number of teachers in the ECD centre who are currently trained and untrained in the table below;

Categories of teachers	Trained	Untrained	Total

15. In your own opinion, does the teachers' training improve the quality of educational output?

Yes [] No []

16. Which is the earning bracket salary for ECD teachers per month?

Ksh.500-2900 [] Ksh.3000-6000 []

Ksh.6001-10000 [] Above Ksh.10000 []

17. In your own opinion, does the salary of ECD teachers affect the quality of educational output?

Yes [] No []

18. If yes to Q17, in what ways.....

.....

19. In your own opinion, does class-size affect the teacher's attention to pupils?

Yes [] No []

20. If your answer is yes to Q 19 above, in what ways...

.....
.....

21. Please, provide information on enrolment in of pupils for the years 2007, 2008 and 2009 in the ECD centre.

Class Year	Baby class			Nursery			Pre Unit		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
2007									
2008									
2009									

22. As enrolment of pupils increases up to an optimum point, unit costs of providing goods and services in ECD centres decreases and vice versa (tick)

- i. Strongly agree []
- ii. Agree []
- iii. Uncertain []
- iv. Disagree []
- v. Strongly disagree []

23. Unit costs have an influence on the quality of educational output in the ECD centre? (Tick)

Yes [] No []

24. If yes to Q23 above, explain.....

.....
.....

25. Do you experience repetition in the ECD centre? (tick).

Yes [] No []

26. If yes to Q25 above, indicate the number of repeaters in the following classes in the years 2007, 2008 and 2009.

Class/year	Baby class	Nursery class	Pre unit class
2007			
2008			
2009			

27. Do you experience drop outs in your ECD centre?

Yes [] No []

28. If yes to Q27 above, what are the reasons.....

.....

29. Indicate in the table below the current information on the availability and adequacy of ECD centre's facilities.

category	Adequate	Inadequate	Not available
classrooms			
playground			
Library/book box			
Toilets/latrines			
Urinals			
Kitchen			
water			
Others(specify)			

30. Indicate in the table below the availability and adequacy of learning/teaching materials in the ECD centre.

category	Adequate	Inadequate	Not available
Desks			
Chairs			
Textbooks			
Teaching aids			
Exercise books			
Science kit			
Others(specify)			

31 Please make any comment if necessary on your ECD centre.....

.....

Thank you for your cooperation

APPENDIX 3

QUESTIONNAIRE FOR TEACHERS

General instructions;

This questionnaire seeks to collect information on the teacher's demographic data and his/her opinions on teacher's training and salaries, wastage and teaching /learning resources in the ECD centre.

Your responses to the questions will be used to improve the internal efficiency in ECD centres. All your responses will be treated confidential. Please, answer all items in the questionnaire and tick each item appropriately or write your answer in the space provided.

PART A: Demographic Information

1. What is your gender?

Female [] Male []

2. What is your age bracket?

16-25 Years [] 26-35 years []

36-45 years [] Over 45 years []

3. What is your highest academic qualification?

i. Degree []

ii. EACE/KCE/KCSE or its equivalent []

iii. KAPE/CPE/KCPE or its equivalent []

iv. Any other (specify)

4. What is your highest professional qualification? (tick)

i. Graduate []

ii Diploma []

iii P1 []

iv P2 []

v. P3 []

vi. Any other (specify)

5. How long have you been a teacher?

1-5 years [] 6-10 years []

Over 10 years []

6. Have you ever undertaken in service training?

Yes [] No []

7. If yes to Q6, to what extent was it useful in your teaching in the school?

Very useful [] Useful []

Not useful []

8. Training of teachers increases the quality of educational output.

Strongly agree [] Agree []

Uncertain [] Disagree []

Strongly disagree []

PART B: Information concerning the pre-school.

9. Indicate the number of ECD drop outs if any, in the following table;

Class/year	Baby class	Nursery	Pre unit
2007			
2008			
2009			

10. If there were dropouts in Q9, What were the reasons.....

.....
.....

11. State the number of pupils who repeated the class in the year 2009

Baby class [] Nursery []

Pre Unit []

12. What are some of the reasons that cause pupils to repeat classes?

.....
.....

13. In your opinion is repetition of any grade necessary? (Tick)

Yes [] No []

14. If the answer is yes to Q13, Give reasons.....

.....
.....
.....

15. In your opinion, does class size affect the teacher's individual attention to the students? (Tick)

Yes [] No []

16. If yes to Q15, in what ways.....

.....
.....
.....

17. Does class size affect the quality of educational output of pre-schools? (Tick)

Yes [] No []

18. If yes to Q17, in what ways ...

.....
.....
.....

19. Using the given criteria below, tick the description that best fits the teaching resources in the school.

- i. Very adequate []
- ii. Adequate []
- iii. Inadequate []
- iv. Very inadequate []

20. Doe Teaching/learning resources affect the quality of educational output? (tick)

Yes [] No []

21. If yes to Q20, in what ways?.....

.....
.....
.....

22. How many pupils were enrolled in your class at the beginning of the year?

Baby class [] Nursery []

Pre Unit []

23. As enrollment increases to a maximum point, unit costs of providing ECDE decreases and vice versa. (tick)

Strongly agree [] Agree []

Uncertain [] Disagree []

Strongly disagree []

24. What is the average textbook – student ratio in your class?

Baby class [] Nursery [] Pre Unit []

25. How will you rate the following ECD facilities in your centre?

category	adequate	inadequate	Not available
classrooms			
toilets			
kitchen			
water			
urinals			
playground			
Library/book box			
Others(specify)			

26. How much do you earn per month in your ECD centre?

Ksh.1000-3000 [] Ksh.3001-6000 []

Ksh.6000-10000 [] Ksh.10000 and above []

27. Does salary of teachers increase the quality of educational output?

Yes [] No []

28. Give your reasons to your answer on Q27.....

.....

Thank you for your cooperation

APPENDIX 4
OBSERVATION SCHEDULE

Location

Number of pupils

Number of teachers

(a) Condition and use of school facilities

Facility	Number	Condition	Use
Classroom			
Playgrounds			
Chairs			
Tables			
Desks			
Textbooks			
Toilets			
Charts			
Models			
Pictures			
Toilets			
Kitchen			
Meals			
Others			

(b) Teachers

Number of teachers	Trained	Untrained

REPUBLIC OF KENYA



NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

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Website: www.ncst.go.ke

Ref: **NCST/5/002/R/540/4**

Date: **29th June 2009**

Mr. Thomas Ondieki Gwachi
University of Nairobi
P.O. Box 30197
NAIROBI

Re: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *Factors Influencing Internal Efficiency in Public Early Childhood Centres in Manga District, Kenya*

I am pleased to inform you that you have been authorized to undertake your research in Manga District for a period ending 30th July 2009.

You are advised to report to the District Commissioner and the District Education Officer Manga District before embarking on your research project.

Upon completion of your research project, you are expected to submit two copies of your research report/thesis to our office.

A handwritten signature in black ink, appearing to read 'Shaikat A. Abdulrazak', written over a printed name and title.

PROF. SHAIKAT A. ABDULRAZAK Ph.D, MBS
SECRETARY

Copy to:

The District Commissioner
Manga District

The District Education Officer
Manga District