

**EFFECT OF ASSESSMENT STRATEGIES ON PRE-UNIT
CHILDREN'S ACHIEVEMENT IN NUMBERWORK IN
LIMURU ZONE, KIAMBU COUNTY, KENYA.**

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**A research project submitted in partial fulfillment of the requirements
for the award of the degree of master of Education in early childhood
Education, University of Nairobi.**

2016

DECLARATION

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

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E57/63741/2013

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This proposal has been submitted for examination with my approval as university supervisor.

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DEDICATION

This project is dedicated to my husband, Philip and our children Victor, Kelvin and Christine for their support. I left them unattended when I went to work on it.

ACKNOWLEDGEMENT

First and foremost I acknowledge God for being with me. I also acknowledge with sincere appreciation the support and input of my supervisor, Dr .Japheth Origa who has journeyed with me through this research work. I also acknowledge with love my family, UON lecturers, library staff and all those whose efforts have made this project a reality.

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ABSTRACT

The study sought to determine whether there is a relationship between teacher assessment strategies and pre unit children's achievement in number work in Limuru zone, Kiambu County. The specific objectives were to determine the effect of written tests on achievement in pre unit number work; to establish the effect of observation on achievement in pre unit number work; to determine the effect of manipulation of concrete objects on achievement in pre unit number work; to analyze assessment strategies on pre unit children's achievement in number work. The study adopted a quasi-experimental design and made use of qualitative approaches to achieve the research objectives. Data was collected through questionnaires that were distributed to the teachers their teaching experience, age, academic level and the type of assessment applied and collected; observation checklists and schedules were also used to collect data on various activities administered to children. Written tests were also administered to collect data from the children on sequencing, taking away and even putting together. Once primary data was collected, both qualitative and quantitative data method were used to analyze the data to answer the research questions. The study found out that teachers' assessment strategies affect pre unit achievement in that, when they are given hands on activities, children are able to achieve better. When teachers observe children performing various duties naturally they perform well. The study also found that written tests was the most used assessment strategy unlike observation and manipulation of concrete objects. It also found out that relying on one assessment strategy poses constraints such as fear, dislike and so on, on pre unit achievement. The study concludes that more observation and manipulation of concrete objects and less of written tests will ensure high achievement. The study recommends diverse assessment strategies to be adopted to help in achieving high pre unit performance. The study also suggests a research to be done on assessment strategies and primary school achievement.

CHAPTER ONE

INTRODUCTION

1.1 Background to study

The overall purpose of assessment, regardless of age, is to help teachers make appropriate instructional decisions about how to best teach children. The Principles and philosophy of assessment that we often apply to young children are part of a continuum that begins at birth and extends through Kindergarten to third grade. Measurement, both assessment and evaluation, of the skills learned by young children must rely upon practices that fit expected learning skills and behavior and then change, as appropriate, to support children as they grow and develop. For example, young children learn and exhibit their learning in different ways than older children. Young children learn by doing rather than just listening and may best exhibit what they know in actions rather than in speech or writing (Zaslow, 2000). During the learning process the extent to which learning takes place during instruction differ from one person to another.

According to Kimble (1961) learning is a relatively permanent change in behavior which occurs as a result of reinforced practice. Similarly, Dawn Quist (2000) defined assessment as a process of evaluation which can be used to identify the individual child's learning needs. He asserts that assessment sums up the child's knowledge or skill from a pre-determined list learning activities and the assessment activities form the means of acquiring the desired knowledge, skills and attitudes. Assessment is thus a powerful learning tool which can be used with great advantage in the teaching learning process. The contrary is also true that it can hamper the teaching – learning process.

Assessment activities also help in the determination of the degree to which the learning objectives are being or have been met. Assessment is therefore a gathering of information in order to make informed instructional decisions.

A study by Shiundu and Omulandi (1992) also defined assessment as that process which will show whether there has been a change in children's behavior. However Sutton (1991) defined the same as a human process conducted by and with human beings and subject inevitably to the frailties of human judgement. It covers activities with grading, examining and certifying. Assessment entails measurement and evaluation of the ongoing process of the preschool children. Therefore assessment is the overall process comprising the activities of evaluation and measurement. Accordingly, assessment is part of a learning process in preschool children's achievement. Assessment has been used in Limuru zone to check entry behavior of children into class one or to determine how much the child has acquired in the present grade. However the assessment has not given all that the child has learnt. This is because teachers are limited to what they test that is they only test what the child can do on paper whereas a child has other areas he or she excels in which are not tested. Assessment strategies used by the teacher play a great role to children achievement in number work. Among the many strategies used are, written tests which are mostly used in this zone, observation and manipulation of concrete objects by the child.

The study seeks to analyze how teachers use assessment strategies to improve and identify the needs of the children assessed with a view of laying a strong foundation for their future development including career choices as they grow up.

1.2 Statement of the problem

This research aims at establishing whether there is any relationship between teacher assessment strategies and achievement in pre unit number work and whether teachers make deliberate efforts to use the findings to encourage the children appreciate their strengths and how to overcome their shortcomings since the preschool children seem to fear or disregard assessment which is written. Many times preschool teaching concentrates on assessing what children can do on paper forgetting the other aspects for example in environmental, play and so on. Assessment is an ongoing process that includes collecting, synthesizing and interpreting information about children in the classroom and their instruction. In understanding the situation in Limuru zone, Kiambu County, Kenya it is very important to understand the pre-school program in supporting young children's development. It is essential to analyze and evaluate program effectiveness as well as offer recommendations on how to improve the process.

1.3 Purpose of the study

The purpose of this study is to determine whether there is a relationship between teacher assessment strategies and pre unit children's achievement in number work in Limuru zone, Kiambu County.

1.4 Objectives of the study

- i. To determine the effect of written tests on achievement in pre unit number work.
- ii. To establish the effect of observation on achievement in pre unit number work.

- iii. To determine the effect of manipulation of concrete objects on achievement in pre unit number work.
- iv. To compare the effect of assessment strategies on achievement on number work.

1.5 Research Questions

- i. What is the effect of written tests on achievement in pre unit number work?
- ii. How does observation influence achievement on pre unit number work?
- iii. What is the effect of manipulation of concrete objects on achievement in pre unit number work?
- iv. What is the relationship between assessment strategies and achievement of pre unit children in number work?

1.6 Significance of the study

The research is intended to benefit the child, the teacher, the community and the administrators, in improving the way assessment is done at preschool level. The study will also benefit policy makers in formulating better ways of assessing preschool children. It is expected that, the findings of the study will help Pre unit children appreciate assessment not as a task to be feared but as a friendly exercise to help and build them holistically. Similarly, it is hoped that the findings will assist the teachers improve on the strategies they employ in assessing pre unit number work on children. Teachers will appreciate the need to employ observation, manipulation of concrete objects in gauging the academic achievement on pre unit number work. This will help children appreciate learning and becoming better through deliberate focus of individual strengths and weaknesses of the child since all children have unique needs. This will

make it possible for pre unit children in Limuru zone to develop physically, emotionally, cognitively and change attitude in number work.

1.7 Limitations of the study:

The research was carried out in a school setting where there are teachers, children as well as administrators. The limitations envisaged are:

- i. The teachers may fail to give enough information for fear of victimization.
- ii. The children are innocent and may not understand what is required of them what is good or bad. This may limit the researcher from getting adequate information.
- iii. Lack of enough materials for the exercise.

1.8 Delimitations of the study

The research was carried out in Limuru Zone of Kiambu County of the central Kenya. The zone has thirteen public and ten private pre-schools which have about two thousand and one hundred preschool children and about one hundred and five preschool teachers. The research will be limited to the assessment strategies employed in assessing pre unit number work. Five pre units in the public schools and five private pre units will be used for the research.

1.9 Basic assumptions of the study:

The study assumed that preschool teachers in Limuru zone employ written tests as a strategy in assessing pre unit number work.

1.10 Definitions of terms

Achievement: How much a child has learnt or acquired in instruction in number work.

This is done by use of test scores in Limuru zone where the teacher gives written work to pre unit children to check whether he or she has anything in a given concept say in sorting and grouping or filling the gaps in a sequence among others learnt.

Assessment: A gathering of information in order to make informed instructional decisions. Children are assessed during learning as they play, perform various activities in number work, at the end of a given concept and even as they are promoted to the next level. To find out how much he or she has covered in a given concept in order to vary or continue with the same strategy. It is a continuous process during instruction.

Strategy: This is a method or a way used by teachers in instructing or assessing pre unit children. Strategies are as many as are teachers and different teachers use different strategies. Teachers should vary their methodology as they instruct or assess pre unit children in number work. This is because number work requires a lot of practice hence children in pre unit should be allowed to interact physically with materials in order to get used and enjoy therefore cultivating interest in number work.

Pre unit children: These are children who are five years and who are being prepared to go to primary school class one. In this zone children who are five years and above are legible for class one. They are subjected to activities in order to find out whether they are ready for promotion to the next level.

1.11 Organization to the study

The study was organized into three chapters. chapter one contains the introduction, background to the study, statement of the problem ,purpose of the study, objectives of the study, research questions, significance of the study, limitations and delimitations of the study, basic assumptions of the study, definitions of terms and organization of the study. Chapter two covers review of related literature, theoretical framework and conceptual framework. Chapter three methodology entails; research design, target population, sample size and sampling procedure, research instruments, validity and reliability of instruments, procedure for data collection and data analysis.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter will cover the effect of assessment strategies on pre- school children's academic performance. It will broadly explain what assessment entails, tools for assessment of preschool children and how assessment of preschool children should be done in order to get proper development of an overall child. Children assessment is a vital and growing component of high quality of early childhood programmers. Not only is it an important tool in understanding and supporting young children's development but also an essential one to document and evaluate program effectiveness. For assessment to be widely used though it must employ methods that are feasible sustainable and reasonable with regards to demands on budgets, educators and children. Equally important it must meet the challenging demands of validity (accuracy and effectiveness). For young children it is the balance between efficiency and validity that demands the constant attention of policy makers and an approach grounded in a sound understanding of appropriate methodology.

According to Meisels (1995), assessment is a gathering of information in order to make informed instructional decisions; it is therefore an integral part of early childhood programme. It is an important tool for both efficiency and ability to measure prescribed bodies of knowledge (Coleman, Byyse and Neitzal, 2006). Briggs and Wager (1988) also defined assessment as a direct measure of what has been learnt as a result of instruction on specific objectives. Most preschools in Limuru have not embraced the practical part of children's assessment .This is because of lack of enough support by the

parents to provide resource materials. The preschools are in a big way sponsored by the parents even those in the public primary schools setting. The resources provided by the parents are not enough to pay teachers as well as purchase materials. Teachers are therefore left with no other option other than use what is at their disposal .Most of the times children are subjected to written tests which in my view do not measure to the standards that children should be assessed. Teachers should try and employ other strategies to ensure that children are holistically assessed. Practical work and observation are other strategies which should be put in place so as to realize effective evaluation.

Child assessment has value that goes beyond measuring progress in children to evaluating programs, identifying staff development needs and planning future instruction .However, materials as well as facilities limit what the teacher can do.

Young children are difficult to assess due to their activity level and distractibility, shorter attention span wariness of strangers and in consistent performance in unfamiliar environment (Benner, 1992). Assessment is usually a comprehensive process of gathering information about a child across developmental areas. Without enough support it is impossible to achieve this. The teacher will find him or herself repeating what they used many years ago and not improving according to current trends in education. When the government talks about going digital the three and five year olds are forgotten and you find them saying they will provide laptops for class one. The old methods of assessing preschools' achievement are never reviewed. Limuru zone teachers find themselves in this scenario which they have no control on. Refresher courses are never given to the preschool teachers, no seminars, no workshops, they are

never updated. It is a high time teachers in the preschool section be thought about and be given an audience.

2.2 Teachers' assessment strategies

Benner (1992) has it that there are several continuums a long which assessment may fall. For example norm referenced to criterion referenced, product oriented process to process oriented assessment formal or informal assessment, direct or indirect assessment, standardized tests to handicap accommodating tests, single discipline approach to team approach. Written tests are the most used in assessing children in Limuru zone .This is because they are easy to administer to children, easy to mark and rank as well as give results to the relevant persons.

Informal related settings where the child can be as much at ease as possible are recommended when doing assessment (Bagnato and Neilsworth, 1994).Assessing a child within a context of his or her community and interacting social systems, taking into account the family's needs that is sources and concerns affect both the evaluation and possible interventions. A child engages in play with a familiar person and a team observes the interactions of the child with adult (Linder, 1993). The assessment is constructed so that the team can communicate with the play facilitator concerning unobserved skills. The combination of informal play based assessment and more directed and structured activities provides greater opportunity for a high level of performance (Bagnato Neilsworth, 1994).This can only be called for if there are enough materials and parents are able to own their children's learning in all ways apart from the little money they pay and they leave everything else to the teacher. In most of the schools in Limuru zone there is not enough space where learning teaching materials can

be put in order for children to interact with them naturally. Something needs to be done to improve the condition of learning in preschools in this zone.

According to Linder (1993) the evaluation of the preschool child requires information gathering and a series of individually administered assessments and behavioral observations. She identifies the components of the individual evaluation to include social history (interpersonal familiar and environmental factors, which influence a child's general adaptation to the learning environment), physical exam, psychological evaluation and observation of a child in a natural setting. Bagnato and Neilsworth (1994) identified other appropriate assessments or evaluations as cognitive evaluation, language and communication, adaptive behavior, social emotional, gross motor, fine motor and functional behavior. This is only possible if the future generation is put in the minds of our government and all stakeholders in the education sector. With the current situation assessment holistically may not be achieved in the near future. Theorists have written and suggested what is good for our children. It is in the hands of the implementers to do what is deemed necessary to improve the standards of our preschools.

Creating a valid assessment for preschool children is a difficult task. It must be meaningful and authentic, evaluate a valid sample of information learnt, based on performance standards that are genuine benchmarks, avoid arbitrary cut off scores or norms and have authentic scoring (Epstein,1999).The context for the test should be rich, realistic and enticing (Wiggins,1992). It is therefore good to design instruments or tools that resemble natural performance, unlike artificial drills. Many are the times children get stressed when they see their teachers coming with an exam that is meant to compare

them with others. They get demoralized when they realize that they will be rated with others. This is what is done many times in most schools .The children see this as a monster which is brought to consume them other than a friend to support them. This is unlike in a natural setting where the child is assessed for strengths and weakness with an aim to help him or her. Authentic assessments engage preschool children in tasks that are personally meaningful, take place in real life contexts and are grounded in naturally occurring instructional activities (Wolf, Bixby, Glenn and Gardener, 1991). Authentic assessments do not rely on unrealistic or arbitrary time constraints, nor do they emphasize instant recall or depend on lucky guesses. Progress towards Mastery is the key content is mastered as a means not an end (Wiggins 1999). Observation, practical work, and written tests will be discussed below as part of assessment and evaluation in early childhood education setting.

2.3 Observation

In the early years most practitioners relied quite properly upon observational techniques to help them in the assessment of young children. The early pioneers made extensive longitudinal observations on the children in their care and it was as a result of the careful scrutiny made by Susan Isaacs on the children at Malting House School that she was able to develop an understanding of the psycho-sexual development of children. Assessment based on observations during the daily routine is the most powerful tool available to nursery and infant educators. However it does not happen in most cases in this zone due to work coverage by the teachers. They therefore find it a waste of time observing children perform during various activities .they therefore are unable to determine children's capability holistically.

Good observation is a skill which has to be learnt. It is taught not caught. (Audrey continues). Teachers cannot holily depend on observation only as a strategy as they have to use other strategies in assessment of young children. This is because when assessment is done it is important to be aware that they may be biased in reception of individual children. Teachers in this zone mostly depend on written tests for their assessment. They are not able to really determine the strengths of the children they assess Tassoni (1999) together with colleagues suggests that spending time formally observing children allows one to focus on and learn more about the children they work with. This allows one to consider how one might best meet the needs of individual or group children. This can also help to provide more information to other professionals or to parents. (She continues). Perry (2004) observes that the usefulness of observations becomes more apparent as one's experience in teaching increases. This is because one knows something about children's interests, particular areas of development or their dispositions and feelings. One is in a far better position to make appropriate curriculum decisions and develop teaching strategies.

Observation can provide supportive and responsive learning environments and help to understand specific behavior. It is often difficult for busy teachers to find time to systematically evaluate young children. Many also lack training to administer tests. Some teachers may even lack training in the use of systematic observation techniques. Their observations of children tend to be casual and informal .Assessment can be expanded to include observations of children's social, emotional and motor development, NAEYC (1991).Assessment in this case helps teachers to plan for instruction for individuals and groups and for communicating with parents .It may also

be used to identify children who may need specialized services or intervention or to evaluate how well the program is meeting its goals.

In most cases teachers use assessment to meet their needs and not the needs of the parents or the children they teach. Along standing tradition in early childhood education is the practice observing young children as they play and interact with one another during daily activities and routines virtually all early childhood professionals make use of their observations of behaviors ,skills, knowledge and attitudes of children in their programs to guide curriculum design, activity, planning, instructions. A current trend is the more structured and systematic use of observation as the primary to collect assessment data to complete assessment components of curriculum based assessment instruments.

In testing preschool children the principal alternative to testing is systematic observation of children's activities in their day to day curriculum in which give and take between teacher and child is norm (Epstein; et al 2004). Further, According to J.P. Oluoch (1982) in "Essentials of curriculum Development", assessment constitutes the third element of a school curriculum which can be used with great advantage in the teaching.

Testing usually involves a series of direct requests for children to perform within a set amount of time, specific tasks designed and administered by adults. These tasks have predetermined answers. Alternatively forms of assessment are more open ended and often look at performance over an extended period. Examples include structural observations portfolio analyses of individual and collaborative work and teacher and parent ratings of children's behavior. Assessment can provide the following four types of information for and about children and their parents, teachers and programs. Children

may be screened to see if they need intervention, particularly when parents and teachers suspect a problem. Assessment may also help to plan instruction for individuals and groups of children. It may also identify program improvement and staff development needs. Evaluation on how well program may meet goals and needs for children. Data in this case may be aggregated to determine whether desired outcomes are being achieved.

2.4 Manipulation of concrete objects

Practical are products of children's work. Teachers should involve children in activities that are practical to make strong their hands fine motors, make strong the fingers as they practice using plasticine to make items interacting with the environment. After items have been made teachers should collect and display children's work overtime .They should be allowed to view skills in drawing and writing. Listening to audio tapes of language samples and oral reading. Children's portfolios for example photos, interview excerpts. Practical gives the true picture of the child. Children from early childhood through primary grades and beyond need to be cognitively, physically, socially and artistically active. Teachers in this zone are reluctant in allowing children to manipulate objects and observation to assess preschool children. This is mainly because practical work and observation are cumbersome and consume a lot of time. Children learn by exploring, thinking about and inquiring about all sorts of phenomenal materials. These experiences help children investigate 'big ideas'.

2.5 Written tests

Assessment of pre-school children to check progress and attainment of the children between three to eight years of age requires understanding that they grow and change rapidly , particularly in their social and emotional development, that they can be easily

distracted by assessment procedures .They have little or no personal interest in being assessed. Abuses and misuses of tests for assessing children have been documented (Meisels, 1987, 1989, 1993; Shepad, 1991, 1994). Administrators should be careful how written tests are used on pre-school children assessment. Excessive written tests are especially in appropriate (National Association For the Education of young children, 1987). Teachers and administration should be engaged in determining those children who need supplements or alternatives necessary assessment information with regard to instructional planning and communicating with parents, identifying to program planned for typical children and determining the worth of the program which is not available through their current assessment procedures.

The early childhood programmes in Reggio Emilia Region of Northern Italy have deliberately attempted to incorporate community participation by including resident artists and crafts people. The documentation of learning in Reggio Emilia programmers provides an example of assessment that reflects a learning community (Dahlberg, Moss and Pence, 1999). Parents in Reggio Emilia provide for their children's learning materials. Children learn what they want because it is their learning. Teachers supervise the learning and direct children. In Limuru zone the teacher is left to do everything .The parent is not concerned about what their children learn. They therefore don't care not because they don't have but because they are never sensitized on the education of their children. Parents should be involved in the learning of their young children. They may be asked to provide play materials for their children. Parents are the first teachers to their children. The home is the first school. Children do not come to school empty or with nothing. They come to build on what they come with from home where there are

parents and siblings. Many times teachers assume that children know nothing and therefore introduce new concepts which end up confusing the children .Preschool Children learn a lot on their way to school. The community therefore has an input in the children's learning. According to Reggio Emilia and the parents are the first teachers, school teachers the second and the community the third. Parents should be given a place in their children's learning as well as assessing.

2.6 Summary of reviewed literature

The quality of assessment depends in part on decisions made before any measure is administered to assess children. Project designers should be able to explain why specific measures are used and what they hope to learn from the results. Assessment strategies can be formal (written tests) or informal (observation, portfolios, teacher and parent ratings).Most evaluation methods of assessment tools focus upon the child and cover one or more development areas such as language development, social maturity, intelligence, and so on.

All these methods involve either informally observing children and samples of their work or using specific rating scales or checklists to test, observe or interview children more formally. Data are obtained from live observations or use of technology including video or audio cassette recordings of behavior of young children .Child assessment may also include reports from parents and from the child's psychologist. Social worker, nurse or pediatrician .However it should be noted that parents have a right to see and make a copy of everything on file pertaining to their child and they may seek removal of misleading or inaccurate records.

The selection of strategy is guided by the purposes and goals of the assessment and is also affected by the available resources in terms of time, money and staff. Formal and informal assessment strategies each have their strengths and weaknesses. A comprehensive assessment requires a multi method approach in order to encompass the many dimensions of children's skills and abilities. Strategies should therefore be diverse. One may not rely on only one strategy. Standardized testing is the most rigid of assessment strategies. It places the greatest constraints on children's behavior. It is the most considered because it is suitable for making quantitative comparisons or aggregated data across groups.

Pre scholar's performance is highly influenced by children's emotional status and experiences sometimes causing unstable scores overtime. Most individual tests of cognitive ability must be administered in a controlled relatively quiet area. Observations minimally intrude into children's life. This is why they should be preferred .This research aims to recommend more of the .manipulation of concrete objects and observation than the written tests.

2.7 Theoretical framework

This study employed constructivism theory founded on the premise that by reflecting on our experiences, we construct our own understanding of the world we live in. Each of us generates our own rules and mental models which we use to make sense of our experiences. Learning according to the works of Brunner and Piaget; is simply the process of adjusting our mental models to accommodate new experiences .Constructivism emphasizes the importance of the active involvement of learners in constructing knowledge for themselves and building new ideas or concepts based upon

current knowledge and past experience .The theory asks why children do not learn actively by listening to their teachers or reading from a text book. It believes one needs a good understanding of what children already know when they come into the classroom .This requires an understanding of children's cognitive development and constructivism draws heavily on psychological studies of cognitive development.

The learning of John Dewey ,Maria Montessori and David Kolb , Lev vygotsky serve as the foundation of constructivist theory which has many varieties: Active learning, discovery learning and knowledge building are three, but all versions promote a child's free exploration within a given framework or structure. The theory asserts that the teacher acts s a facilitator who encourages children to discover principles for themselves and to construct knowledge by working to solve realistic problems.

Teachers in this zone work very hard to make sure that children acquire the skills needed in education but most of what is learnt in the preschools is in the theory .Practical work in most cases is avoided due to pressure from within or without Practical is felt as cumbersome ,involving as well as time wasting Practical makes learning real. Children are able to identify with the real world and their environment .Children become confident when they interact with the real world. They are not afraid of what they deal with because it becomes part of their lives. They are able to see, do, improve and in this way enjoy the activities given. When teachers fail to offer practical to the children they participate in their destruction. This brings about children forgetting what they learnt in the previous grade which affects children's learning as they advance because they are unable to connect with what they learnt earlier. Lev Vygotsky also argues that teachers should be there for the children to help where they are stuck that is

the zone of proximal development. As they assess they should allow them to explore and discover their potential (Vygotsky, 1978). He came up with the idea of scaffolding that is helping children at their point of difficulty.

This study is therefore designed to help teachers, administrators, community and all stakeholders in Limuru Zone. It should help them to lay down strategies to ensure that children are trained to become holistic persons. They should be assessed in the written tests, observation as well as in the manipulation of concrete objects in order to develop the three domains according to Bloom's taxonomy which are; the cognitive which deals with the mind, the affective dealing with attitude and the psychomotor which is concerned with physical skills.

2.8 Conceptual framework

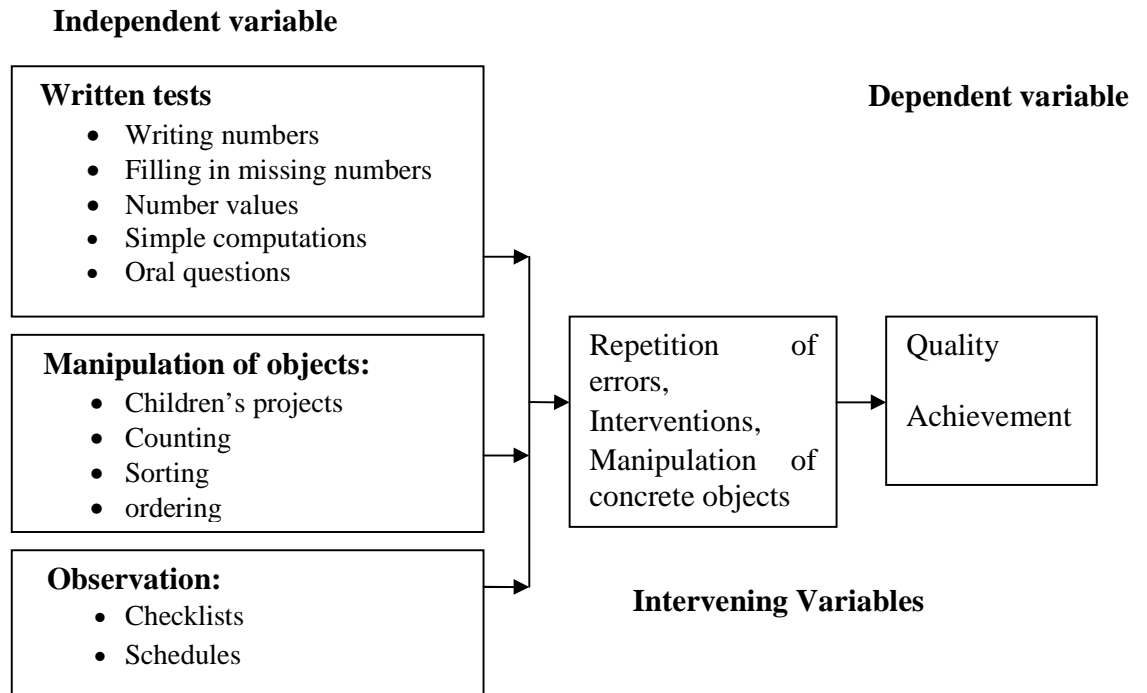


Figure 2.1: Conceptual Framework

For purposes of this study the manipulation of any of the independent variables is expected to affect pre unit children's achievement in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The main focus of this study was to describe the research design, target population, sample size and sampling procedure, research instruments, validity of the instruments, reliability of the instruments, data collection procedures and data analysis techniques.

3.2 Research Design

The research utilized quasi experimental design and makes use of qualitative approaches. Quasi experimental design deals with pre-assembled groups. The researcher used already set groups in their local setting without sampling them. The children were assessed in their classrooms. The researcher framed experimental and control groups. The pre-assembled groups were selected and tests were administered. Pre-test were used to check what the children had covered in number work concepts that is sequencing ,putting together, taking away, as well as matching numbers with the items .Scores were analyzed to show the means and standard deviations of the two groups. After a week a post test was administered where concrete objects were used as well as observation. The difference between the pre and the post test scores was compared with the help of Comparisons and correlations to analyze the data. The design was appropriate for gathering information on assessment strategies teachers employ in assessing pre unit children as well as gathering information from teachers and children. Written tests were used as control for the investigation since the research assumed that most of the pre unit teachers employ them when assessing pre unit children.

3.3 Target population

The research was carried out in Limuru Zone of Kiambu County which has a total of thirteen public pre units and ten private pre units, where the research was confined to five public pre units and five private pre units. A total number of seven hundred children and forty teachers. The main respondents were the pre-school teachers and children of the identified pre-schools who were selected during the sampling.

3.4 Sampling techniques and sample size

The researcher used random sampling technique to select the primary and private schools. Sampling is a process in which the researcher identifies those individuals to take part in the investigation. A sample is a small group of research participants selected to participate in a research. The group from which the sample is selected is known as a population. Mugenda and Mugenda (2003) defines sampling as the process of selecting the subject or cases to be included in the study as representative of the target population. The sample for the study was thirty-eight teachers and three hundred and seven pre-unit children of Limuru zone. Random samples were used where the researcher gave a number to each school, put them in a container where they were picked at random (Mugenda and Mugenda ,2003).This ensured that each group or school got an equal opportunity of participating in the research.

3.5 Research Instruments

This research employed questionnaires, observation schedule, check lists and written tests. A questionnaire is an instrument prepared and administered to the target group with an aim of getting answers to disturbing questions in the area the researcher has

identified. Open ended questions were set. According to Gale, (2006) open ended questions give respondents freedom to express themselves and give their opinions as well as make suggestions to a given issue. Questionnaires are easy to administer and analyze since they are in immediate usable form (Mugenda and Mugenda, 1999). The likert scale was used where the respondents indicated whether very good, good, fairly good, average and so on. The questionnaires for teachers were designed to collect the gender, marital status of the teachers, level of education, years of experience in the teaching of pre-unit children in number work, frequency of assessment, preparation for teaching and assessment and the bodies responsible for financing materials for number work assessment. On the other hand observation schedules for children, checklists as well as the written tests were made to check achievement of pre unit children in number work, activities performed for the same and the contribution of each to the achievement in number work.

The researcher distributed the questionnaires to the respective schools in the zone .Since it was not possible to obtain information from children by questionnaires the researcher made use of observation and practical work where she observed the children as they performed activities. Check lists and observation schedules were used to record performance of preschoolers. This is a method by which the researcher goes to the scene of behavior where the action takes place and collects data pertaining to what is happening.

Through observation the researcher was able to interact with the situation of concern in order to understand it. Children were observed as they did number work activities from

a concept covered in learning. The researcher also administered written tests on what the children had covered in a period of time in a given concept. Written tests are normally set by the teachers on what they had taught or what children had learnt to test coverage of content. Tests are sometimes purchased which do not focus on what the teacher has covered. This was treated as control for the research. Teachers filled in questionnaires with detailed information about the focus of the study. The researcher was able to obtain information on their experience in assessing children in number work activities.

3.6 validity of the instrument

Validity is the degree to which an instrument may be valid (Orodho. J. A, 2005). It is the accuracy and meaningfulness of inferences which are based on research results (Mugenda and Mugenda, 1999). It enables the researcher to estimate error and make corrections if any. The research instruments were tested in order to test their validity. Validity was ensured by using experts in the field. The instrument was scrutinized and approved by an expert. The researcher administered the instrument on observation on the activities such as taking away, modeling; putting together among others performed by children of given sampled schools. After a week the same was repeated by a colleague to confirm the validity of the instrument.

3.7 Reliability of the research instruments

Reliability is the measure of degree to which a research instrument gives constant results or data after it is repeated. According to Wiersma (1985), reliability is the consistency of the instrument in measuring data given. A test-re-test technique was employed to estimate the degree. The researcher prepared a research instrument paying

attention that it focused on the issue of concern. After a week the researcher administered the same sample in a pilot form. The data was analyzed again and then findings of the first were compared to the second. A correlation test was undertaken.

Observation schedule was subjected to preschool children where children were given activities such as modeling numbers ,items found in their environment ,building blocks and the teachers observed how each child fared and recorded .With practice this was repeated after two weeks to test its reliability. The response was scored and frequencies and percentages calculated.

3.8 Data collection procedure

This is a step at which the researcher obtains data about the independent variable and the dependent variable. The researcher employed observation check lists used for children's activities as well as written tests while questionnaires were for teachers and. A permit was sought from The National Commission for Science, Technology and innovation. This enabled the researcher to book appointments with respective schools. On the d-day the researcher paid a courtesy call to the Head teacher's office seeking to do the research in the institution and together planned on the appropriate dates and the relevant time for the same.

3.9 Data analysis

The data was collected, coded and edited after the research. It was put in SPSS software for processing. Primary data obtained through the use of questionnaires, observation and written tests was analyzed manually and frequencies and percentages were used to describe the profile of the respondents.

3.10 Ethical considerations

The researcher used the information collected from respondents for research purpose only. It was not intended to victimize the respondents or the preschool. The information given was confidential. The consent of the parents was sought through the head teachers of the schools concerned .This is because these are children under eighteen years.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results of the analysis. From the 41 questionnaires distributed, 38 were collected and used in the study. This shows that the response rate was 93%. The findings are based on these responses as presented in this chapter. First, the sample characteristics are shown. This is followed by a presentation of the results based on the study objectives.

4.2 Demographic Information

4.2.1 Respondents Gender

All the respondents were female. This is an indication that pre-school teaching in Limuru zone is dominated by women. It's important to note that the gender ratio as per government regulations has been overlooked. This should be evident in the quality of decisions made to support the growth and sustainability of pre-schools in Limuru. Women are in a better position in handling preschool children. Most children fear the male. They are comfortable with female. This is because even at home most caregivers are female in this zone. The father figure is missing in action. Men are in most cases unable to handle young children. They find it a bother. That is why most preschool teachers are women.

4.2.2 Respondents Age

Below thirty years of age forty two percent respondents were registered. Another 42% of the respondents were between 31years to 40 years. Only 15% of the respondents were between 41 years to 50 years .According to the study those who were older were patient

with the children and composed .They were able to get results as required unlike the younger who did not understand what assessment really entails and the purpose for the same. The older teachers are more conversant with what is required of the pre unit children. They are aware of what should be assessed and why children are assessed. Number work being one of the activities pre unit children are instructed in is a very important crucial activity in the cognitive development of pre unit children and requires a lot of patience from the person handling the pre unit children that why it requires one who is mature enough, one who is not easily provoked among other attributes to be able to handle these age. The table 4.1 shows that most of the teachers who handle preschool children are between the ages thirty and forty. This is the child bearing age and children are more comfortable with this age.

Table 4.1 Frequency distribution by respondents' age

Range of age	N	Percentage
Below 30yrs	16	42.10526316
31yrs- 40yrs	16	42.10526316
41yrs- 50yrs	6	15.78947368
Total	38	100

Source: Field data (2015)

4.2.3 Respondents marital status.

Sixty percent of the respondents were married while the remaining thirty-nine percent of the respondents were Single. Those married and had children were better able to handle and interact with them unlike the singles who were neither married nor had children The

married for seen to be more supportive and caring to the children. They accorded them a lot of attention and seemed to have a cordial attachment with the children. This aspect made children relax while doing activities given. Evidence of what happens at home was seen at school where the married brought about. Table 4.2 shows that twenty three out of the thirty eight respondents were married depicting that the married are more attached to the children and have interest in relating with them. Fifteen however are not married. Some have just graduated from college and are trying to come to come to terms with handling young children.

Table 4.2 Frequency distribution by respondents' marital status

Marital status	N	Percentage
Married	23	60.52632
Single	15	39.47368
Total	38	100

Source: Field data (2015)

4.2.4 Respondents level of Education

The biggest number of the respondents had only attained a college certificate. This was 66% While 29% had a college diploma the other 5% of the respondents had a bachelors' degree. None of the them had a masters' degree .From the study those that had higher level in education had a lot of knowledge of dealing with pre unit children and understood their development better and were able to help them in scaffolding which is a big milestone in their development. Those with a higher level of education were seen to be aware of what they did and this was seen in how they assessed the pre unit children in number work. They did not harass the children or intimidate them insisting that they should do or perform certain activities by force. They did not

label them as non performers or good for nothing .This made the children have confidence in their teacher which is a great contribution to achievement in number work. Those who were certificate holders and had lesser experience were trying though there were some who did not care even to ask from the more experienced and advanced in education. This contributed negatively to achievement in number work. They became telling teachers and did not allow the children to participate in their learning as well as their assessment. This kills the morale of the children in achieving in number work.

Table 4.3 Frequency distribution by respondents' level of education.

Level of education	N	Percentage
Masters' degree	0	0
Bachelors	2	5
Diploma	11	29
Certificate	25	66
Total	38	100

Source: Field data (2015)

4.2.5 Respondents teaching Experience

Seventy-one percent of all the respondents have worked as pre-school teachers for over five years while twenty-six percent of the respondents had teaching experience of between two and five years. Three percent had worked for below one year. Those with a greater experience were composed and handled the pre unit children with ease .they are conversant with what they do and answered questions asked knowledgeably evident of great achievement in number work expected. The field data collected reflected what was on the ground. Those with more experience did not shy off from registering their

challenges in the preschool sector and more so in assessment and achievement in number work. They gave in detail what they did with the children and how they were able to assess their children in number work. Results were seen as evidence of the same.

Table 4.4 Frequency distribution by teaching experience

Teaching experience	N	Percentage
Over 5 years	27	71
Between 2-5 years	10	26
Below 1 year	1	3
Total	38	100

Source: Field data (2015)

4.3 Strategies on achievement in pre unit number work

Sixty-five percent of the respondents agreed to written tests as their only method of assessing their students. Another fifteen percent employed observation as their method of assessment while nine percent employed none of the listed methods of assessment. Five percent used all the three methods of assessment. Three percent recorded that they used manipulation of concrete objects as their method of assessment. The remaining three percent used both observation and written tests as the methods of assessment .It is there for evident that written tests is the most used method in assessing pre unit children in number work activities. Manipulation of concrete objects as well as observation is rarely used.

4.3.1 Written tests

Written tests are meant to inform or guide teachers instruction. pre unit children are at this age able to write numbers, fill in blanks that is sequencing, count ,takeaway, put together numbers among other activities. Teachers in this zone find it easy to administer written tests and that is why they prefer the same to other assessment strategies. Written tests save on time, easy to analyze and give results unlike observation where there is the issue of individual attention and giving the child a lot of time. In the absence of the teacher in charge another can be appointed to assess the children whereas in observation not every person has patience to assess the children in number work. Teachers see the written tests as the formal way to assess children. Other methods according to the teacher are informal and therefore cannot give the information required.

Effect of written tests on achievement in pre unit number work

Table 4.5 Frequency distribution of assessment strategy.

Assessment strategy	N	Percentage
Observation	6	15
Written tests	25	65
Practical work	1	3
Others	6	15
Total	38	100

Source: Field data (2015)

From Table 4.5 it is clear that written tests are the most used as an assessment strategy with a high of 65%.

To analyze the effect of written tests on pre unit achievement in number work, the researcher used already set groups and administered tests. Pre-test were used and scores were analyzed to show the means and standard deviations of the groups. After a week a post test was administered. The difference between the pre and the post test scores was compared with the help of Comparisons and correlations to analyze the data. Table 4.6 shows the mean of the groups. This is a method which most teachers go for because it is easy to administer and mark as well as compile results. A lot of time is saved when they are used. Written tests are not involving according to the teachers report but do not give enough information but since they have no alternative due to lack of materials to facilitate use of other assessment strategies like manipulation of concrete materials or observation. The teachers are for now comfortable with the strategy until they get finance to venture into other strategies. They do not get to do much and the method does not favor children since children enjoy learning when they participate in their activities as well as their assessment.

Table 4.6 Written test results

Pupils	pre-test mean	post-test mean
45	2.55263158	3.07894737
40	2.76315789	3.23684211
40	2.07894737	3.13157895
32	1.97368421	2.89473684
35	1.92105263	3.10526316
40	2.73684211	3.10526316
35	2.26315789	2.86842105
40	2.47368421	2.78947368

Source: Field data (2015)

4.3.2 Observation

In order to investigate the effect of observation in pre unit number work Limuru zone, the study used a likert scale in which 4, 3, 2, and 1 represented continuum scores for *very good, good, fairly good and fair respectively*. These enabled the tabulation and interpretation of the responses from the research instrument. The main statistics derived are mean, standard deviation and the variance. The mean illustrated the extent to which the respondents agreed or disagreed with the statements put forth on the effect of observation in pre unit number work in the zone. This is well elaborated in the table and narratives below which show the respondents and the statistics. Observation is an informal way of assessing pre unit children but gives the best results. This is because teachers are able to determine what the child is able to perform with without problems and which activities he or she can do with the help of the teacher or his or her peers or where the child cannot completely do. This enables the teacher to come in and encourage the child and build on the weak areas as well as encourage them on what they are able to do with out the help of the teacher. However this method is time consuming according to the teachers report. It calls for individual attention which requires a lot of patience from the teacher. The teacher does not only assess the activities by the pre unit children but also their emotional as well as their leadership skills. This is because the child does not work in isolation but with others who are able to correct or build their confidence. High achievements are realized and the teachers work is made easier.

Table 4.7: Observation

Activity	N	Mean	standard deviation	Variance
Counting and writing	45	3.13157895	0.30465886	0.092817021
Ordering and Sequencing	40	2.89473684	0.29806127	0.088840522
Matching and Pairing	40	3.10526316	0.31677998	0.100349558
Putting Together	35	3.10526316	0.30004616	0.090027701
Taking away	40	2.86842105	0.24361656	0.05934903
Play	35	2.78947368	0.22161062	0.049111265
Interaction with the teachers	40	2.60526316	0.17256417	0.029778393
Collaborative learning	32	2.26315789	0.14886459	0.022160665
Cooperation	35	2.47368421	0.41928931	0.175803528

Source: Field data (2015)

Table 4.7 illustrates the activities observed in the pre-units in Limuru zone. Majority of the respondents felt that counting and writing numbers affect performance the most with a mean of 3.132. This was followed by matching and pairing and putting together with a mean of 3.105 then ordering and sequencing then taking away then play then interaction with teachers with means of 2.894, 2.868, 2.789 and 2.605 respectively. Collaborative learning and cooperation had the lowest means of 2.263 and 2.473 respectively. The table further illustrates standard deviation (S.D) and variance of the findings. This received varied responses with collaborative learning having the lowest SD at 0.149 followed by interaction with teachers at 0.172. This indicates that there was somewhat agreement amongst respondents on these two as main observed activities affecting pre-

unit number work in Limuru zone. Matching and pairing and counting and writing had the highest SD at 0.316 and 0.304 respectively.

The general finding is that observation affects achievement pre unit number work in Limuru zone. Those that employed this strategy were able to realize better results than their counter parts that used written tests. Children performed better, were relaxed and well composed even as they performed these activities unaware that nobody was watching them. This is in consistency with Tassoni (1999) together with colleagues who suggested that spending time formally observing children allows one to focus on and learn more about the children they work with which helps to provide more information to other professionals or to parents.

4.3.3 Manipulation of Concrete Objects

In order to investigate the effect of practical in pre unit number work in Limuru zone, the study used a likert scale in which 4,3,2, and 1 represented continuum scores for *very good, good, fairly good and fair respectively*. These enabled the tabulation and interpretation of the responses from the research instrument. The main statistics derived are mean, standard deviation and the variance. The mean illustrated the extent to which the respondents agreed or disagreed with the statements put forth on the effect of practical work in preschool science in the zone. This is well elaborated in the table and narratives below which show the respondents and the statistics.

Table 4.8 Manipulation of concrete objects

Manipulation	N	Mean	SD	Variance
Drawing	45	2.552631579	0.467380078	0.218444137
Measurement	40	1.973684211	0.524621333	0.275227543
Emptying and filling	40	2.763157895	0.449867706	0.202380953
Sorting and grouping numbers	32	3.236842105	0.318168427	0.101231148
Construction	35	1.92105263	0.39217002	0.153797322
Ordering and Sequencing	40	2.894736842	0.298061273	0.088840522

Source: Field data (2015)

Table 4.8 illustrates the practical activities practiced in the pre-schools in Limuru zone. Majority of the respondents felt that sorting and grouping numbers affects pre-school performance the most with a mean of 3.237. This was followed by ordering and sequencing with a mean of 2.895. This was followed by emptying and filling, drawing with means of 2.736 and 2.552 respectively. Measurement and construction had the lowest means of 1.973 and 1.921 respectively. The table further illustrates standard deviations and variance of the findings. This received varied responses with ordering and sequencing having the lowest SD at 0.298 followed by sorting and grouping numbers at 0.318. This indicates that there was somewhat agreement amongst respondents on these two. The respondents through the SD also highlighted measurement with 0.524. The general finding is that manipulation of concrete objects affects achievement in pre unit number work in Limuru zone. This strategy is not

popular in this zone. Reasons are that there is a challenge in financing this strategy. Parents are entrusted to do everything in preschools; that is pay teachers, facilitate feeding program as well as materials for assessment. This becomes quite expensive for the parents. The strategy may be helpful but the cost is overwhelming. The teachers also argued that the strategy is cumbersome and expensive.

4.3.4 Assessment strategies and achievement in number work

The above assessment strategies have been discussed at length. Each of them has contributed greatly to the achievement in number work on pre unit children. Teachers were able to give their views and contribution towards why they employ different strategies to assess pre unit children in number work. Written tests, observation and manipulation of concrete objects have been analyzed in this research. Written tests were seen to have the biggest take followed by observation while manipulation of concrete objects was unpopular and therefore not embraced in this zone. Children who were subjected to observation performed better than their counter parts whose teachers used written tests. Manipulation of concrete objects was a new phenomenon in assessing children in number work. The table below gives how assessment strategies are employed by the various teachers and their percentage. Teachers argue that written tests give ready answers about their children's achievement. Written tests are formal assessments which are developed by professionals so that they are valid and reliable. Observation is helpful to plan what one will observe at a given period. The teacher can gain insight into a child's attitude and disposition towards number work.

Table 4.9 Frequency distribution by assessment employed

Assessment employed	N	Percentage
Observation	6	15
Written tests	25	65
Manipulation of concrete objects	1	3
Observations and written tests	1	3
All	2	5
None	3	9
Total	38	100

Source: Field data (2015)

4.4 .Frequency of assessment, preparation and financing.

Seventy-one percent of the respondents did not respond to the question. Twenty-four percent assess children monthly while five percent assess children termly. None of the respondents. Assess pre unit children weekly. This field data shows that either the respondents did not understand the question or they do not assess pre unit children at all or may be they feared to be victimized or exposed which was not the intention of the research. Assessment as well as preparation for teaching is subject to provision of finance. Teachers reported that their provision or financing for the materials is to a large extent by the parents. Most of the pre units in this zone are in rural areas where most parents are unable to put food on the table leave alone financing for the assessment of their children. Parents are therefore not able to provide enough materials for assessment.

The field data 4.10 clearly shows that pre unit children to a large extent are never assessed. Seventy- one percent did not respond for reasons better known by them or because they did not find it important to assess their pre unit children. Only twenty-four percent claimed to assess monthly, 5% however assessed termly while none of them assessed weekly. This shows most of the teachers in the other grades complain that their children do not perform in number work activities. Failure to assess children at every stage of instruction leads to low achievement.

Table 4.10 Frequency distribution assessment

Period	N	Percentage
Weekly	0	0
Monthly	9	24
Termly	2	5
No response	27	71
Total	38	100

Source Field data (2015)

Table 4.11 Frequency distribution by rank

Norm referencing	8	21
Criterion referencing	26	68
No response	4	11
Total	38	100

Source: Field data (2015)

4.4.1 Teaching preparation

Fifty-eight percent of the respondents prepare termly, eighteen percent prepare monthly, while another eighteen percent prepare daily. Only three percent of the respondents prepare weekly. Preparation helps the teacher to be well armed and ready to teach and correct or vary teaching methods to suit the children in their learning. Those teachers that prepared daily were able to walk with the children at every stage. This leads to quality achievement because the teacher is able to correct herself or give more time to the children for concepts that need more time. Preparing once a month either makes the teacher to rush through in order to complete the syllabus which has a negative effect on the children's quality achievement. The greatest number according to accordance with their overseers. Sometimes teachers who prepare termly are not able to follow the progress of their pre unit children. This could hamper or affect pre unit number work greatly. It means that there is no room for amendment in the course of the learning. Achieve in this case may not be realized in a great deal. This being the greatest percentage as the table shows the it means there is no turning back to check on the methodology or vary the strategies. The teacher may end up teaching nothing and therefore assessing nothing .Only eighteen percent are able to give to the children what is rightfully theirs because they are able to walk with them. Prior proper preparation leads to proper teaching and hence quality achievement to the children. The table below (4.12) properly shows how the teachers in Limuru zone prepare to teach as well as assess pre unit children. Instruction and assessment go together. Assessment is done at every stage in the instruction process.

Table 4.12 Frequency distribution by teaching preparation

Teaching preparation	N	Percentage
Daily	7	18
Weekly	2	6
Monthly	7	18
Termly	22	58
Total	38	100

Source: Field data2015

4.4.2 Finances for the assessment.

Eighty-nine percent recorded that parents were the financiers of their assessments materials. Eight percent were financed by sponsors. Only three percent recorded that their schools financed the assessments materials. None of the respondents recorded being financed by faith-based organizations. From the data collected parents financed their pre unit children's number work assessment materials. The table 4.13 shows clearly that parents are their children's assessment financiers whether in the public or in the private pre units. It therefore dictates that if they do not finance because of one reason or the other then no assessments will be done. In the private pre unit the parents carry their cross. They have no donors. It is in their minds and their budget that if they do not provide anybody will. They do not wait for any organization to fund their children's learning. They sit and agree with the teacher or the school where their children learn on how to finance their children, assessment. They are able to support their children. On the other hand parents in public pre units find it hard to finance their children's assessment. This is because most of them are below the poverty line or they

do not consider pre unit assessment as important. With the onset of free primary education parents have taken off the burden of their children .They argue that the government should fund pre schools so that they relief them of the financial strains. This is in connection to the fact that free maternal health care is provided for expectant mothers and the beyond zero campaign by the First lady Margaret Kenyatta. It is therefore a big challenge to the rural areas parents to finance their children’s assessment. This negatively affects achievement in pre unit number work.

Table 4.13 Frequency distribution of financers

Financer	N	Percentage
Parents	34	89
School	1	3
Faith-based Organizations	0	0
Sponsor	3	8
Total	38	100

Source: Field data (2015)

Table 4.14 Correlation results

<i>Mean</i>	<i>pre-test mean</i>	<i>post-test mean</i>
pre-test mean	1	
post-test mean	0.274132	1

Source: Field data (2015)

Table 4.14 illustrates the correlation results two administered written tests during the research period. A 0.274 correlation coefficient indicates that both the means move to the same direction. That is to mean that continuous tests will either have a continuous positive effect on preschool achievement. The general finding of the study is that written tests affect pre-unit number work achievement. This is in line with Linder (1993) who found that the evaluation of the preschool child requires information gathering and a series of individually administered assessments and behavioral observations.

4.5 Feedback.

Sixty-eight percent used criterion referencing as the method of ranking the children while twenty-one percent employed norm referencing. Eleven percent however did not answer this question. Criterion referencing is a method used to assess children individually to find out how much the child has acquired, register strengths and spot weak areas in order to help them in their weak areas. This method is advocated for since it deals with individual children. Children whose teachers used criterion referencing had very good time because children were relaxed and happy. This is because the teach dealt with each individually without comparing them with others. Each child was given activities and marks awarded according to what he or she was able to do. Strengths were appreciated while weak areas were corrected. Zones of proximal development were scaffolded accordingly. The best of each child was displayed and children appreciated their efforts. Teachers who employed criterion referencing enjoy their work. Teachers who employed norm referencing were seen to be stressed since they had to explain the reason for under achievement as expected by their employer. Children are also stressed because they do not understand why they have to be compared and they are not the same

in making. The morale of these children is low and they are afraid to compete because they do not understand what competition entails. The table 4.11 shows that sixty-eight percent employ criterion referencing against twenty-one percent who employ norm referencing. The findings indicate that individual attention is given a chance. Children are not compared with others in most pre units. The pre unit teacher has time to help each child. Comparing children with their peers who are not of the same cognitive strength makes them become discouraged and see themselves as failures. It should be avoided in assessing number work in pre unit children in

Table 4.11 Frequency distribution of feed back

Feedback	N	Percentage
Norm referencing	8	21
Criterion referencing	26	68
No response	4	11
Total	38	100

Source: Field data (2015)

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of research findings, discussion of key findings, conclusions made from the study and the recommendations for policy and practice. The chapter also presents suggestions for further research.

5.2 Summary of Findings

The purpose of this study was to determine whether there is a relationship between teacher assessment strategies and pre unit achievement in number work in Limuru zone, Kiambu County .The dependent variable was quality achievement while independent variables were strategies employed in assessing pre unit children in number work activities. The study employed quasi experimental design which deals with already assembled groups and data collected was analyzed using SSPS software. The instruments used for collection were observation schedule for children and questionnaires for teachers. The researcher framed experimental and control groups. The pre-assembled groups were selected and tests administered. The study established that there is a great relationship between the strategies employed in assessing pre unit number work and children's achievement. The study sought to determine the effect of written tests on pre unit number work. The findings of this study showed that written tests are the ones mostly used in assessing pre unit children in number work. The results showed that written tests do not give enough information about the child. This strategy therefore cannot holily be depended upon for the assessment of pre unit children in

assessing number work. The teachers in this zone should employ other strategies to realize maximum quality achievement.

The study sought to establish the effect of observation on achievement of pre unit number work. The findings indicated that only fifteen percent of the pre unit teachers employed observation as a strategy to assess pre unit children in number work against sixty- five percent who employed written tests. This shows that even though observation is a good method as teachers confirmed through the conversation they had no enough time to use this method. Others argued that those in charge of providing materials did not have enough resources to support the program .This in a great way affected their assessment since children at this age require a lot of interactive materials.

The study also sought to determine the effect of manipulation of concrete objects on achievement in number work. Only three percent responded towards employing this strategy as a method of assessing pre unit children in number work. Most of them said that they had no materials to support this strategy. The findings indicated that teachers in this zone are not aware of this strategy or if they are aware they do not employ the same. From their verbal sentiments they claimed that the method was cumbersome and could not be employed in assessing large numbers.

5.2.1 Background Information

Forty-one questionnaires were distributed; thirty-eight were collected and used in the study. Forty-two percent of the respondents were below thirty years. Another forty –two percent were between thirty-one and forty years. Fifteen percent of the respondents were between forty-one to fifty years. Sixty-one percent of the respondents were married

while the remaining thirty-nine percent of the respondents were Single. Sixty-five of the respondents had only attained a college certificate. Twenty-nine percent had attained a college diploma while only five percent had attained a bachelors' degree. None of the respondents had attained a masters' degree. Seventy-one percent have worked as pre-school teachers for over five years while Twenty-six of the respondents had teaching experience of between two and five years. Only three percent of all the respondents had worked for less than one year.

5.2.2 Effect of written tests on achievement in pre unit number work

The study found out that written tests are the most commonly used as a method of assessment in this zone. They are the most considered because they are suitable for making quantitative comparisons or aggregated data across groups and are easy to administer to children, easy to mark and rank as well as give results to the relevant persons. They however place the greatest constraints on children's behavior thus are not the best assessment strategy. This is in line with Shepad (1994) who sees excessive written tests as in-appropriate for this level of children. Shepad argued that administrators should be careful how written tests are used on preschool children assessment.

5.2.3 Effect of observation on achievement in pre unit number work

The study found that Teachers in Limuru zone are reluctant in using observation to assess preschool children on number work. This is mainly because observation is cumbersome and consumes a lot of time. Perry (2004) observes that the usefulness of observations becomes more apparent as one's experience in teaching increases. This is

because one is able to determine children's interests, particular areas of development or their dispositions and feelings. With the knowledge the teacher may be able to help the child in different areas of development. Assessment in this case helps teachers to plan for instruction for individuals and groups and for communicating with parents. According to Tassoni (1999) spending time formally observing children allows one to focus on and learn more about the children they work with.

5.2.4 Effect of manipulation of concrete objects on achievement in pre unit number work.

The studies found that majority of the respondents have not embraced the practical part of children's assessment. This was attributed to the lack of enough support by the parents to provide resource materials. The preschools are in a big way sponsored by the parents even those in the public primary schools setting. The resources provided by the parents are not enough to pay teachers as well as purchase materials.

Manipulation of concrete objects however according to other scholars like Gardener (1991) helps Children learn by exploring, thinking about and inquiring about all sorts of phenomena materials. These experiences help children investigate 'big ideas'. The learning of John Dewey, Maria Montessori and David Kolb as well as Lev Vygotsky serve as the foundation of constructivist theory which support active learning, discovery and knowledge building. All these promote a child's free exploration within a given framework. They argued that manipulation of concrete objects makes learning real. Children become confident when they interact with the real world. Denying children this hampers their development. It is therefore very important to involve children in

their learning as well as their assessment. This will make them grow to be confident people. This will build their confidence.

5.2.5 Comparison of assessment strategies on achievement in pre unit number work.

Sixty-five percent used written tests as their only method of assessing pre unit children in number work. Another fifteen percent used observation as their method of assessment. Five percent used all the three methods of assessment. Three percent employed manipulation of concrete objects in assessment. The remaining three percent used both observation and written tests as the methods of assessment.

Most of the respondents used written tests as their main method of assessment. Relying on one assessment strategy can pose constraints on achievement. According to Epstein (1999) a valid assessment strategy must be meaningful and authentic, evaluate a valid sample of information learnt, based on performance standards that are genuine benchmarks, avoid arbitrary cut off scores or norms and have authentic scoring. The finding shows that there is a relationship between assessment strategies employed and children's quality achievement in number work.

5.3 Conclusion

As the study shows, written tests, observation and manipulation of concrete objects are assessment strategies used by preschool teachers in assessing pre unit number work. Written tests are widely used unlike observation and manipulation of concrete objects. All the three assessment strategies affect quality achievement on pre unit number work. The study also shows that using one assessment strategy is a shortcoming to

achievement due to presence of strengths and weaknesses. Use of the three assessment strategies however would help improve achievement in number work in the pre units in Limuru zone. Therefore use of a mix of the three strategies should be considered. Teachers should be advised to blend the three methods in order to realize quality achievement.

5.4 Recommendations

The study recommends more manipulation and observation than written tests. This is because the children fear written tests and that pre unit number work achievement is highly influenced by children's emotional status and experiences sometimes causing unstable scores overtime. Most individual tests of cognitive ability must be administered in a controlled relatively quiet area. Observations minimally intrude into children's life.

The study also suggests that the strategies be diverse that be varied and children be given more time to discover and explore as well as interact with real world. This is because relying on only one strategy can be shortcoming to achievement. Each strategy has strengths and short comings. Assessment requires a multi method approach in order to encompass the many dimensions of children's skills and abilities. The government should attach value to early childhood Education whereby assessment should be given preference. The early childhood department should come up with strategies to ensure that these early years' education and assessment in number work is monitored to see that what the policy has recommended is followed. Teachers in other levels could be blamed which was committed early and cannot be corrected later in life. Some be done if our children are to realize their dreams.

5.5 Suggestions for further studies

The study confined itself to the pre-units in Limuru zone and achievement in number work only. The findings may not be applicable to other sectors due to uniqueness of the zone. It is therefore recommended that the study be replicated to other areas to establish the relationship between teacher assessment strategies and pre unit children's achievement in number work and other activities. The study further suggests that research be done in a wider area or scope to check to determine whether there are others pre unit children subjected to the same strategies in assessment. The study also recommends that an empirical study to be conducted to test relationship between teacher assessment strategies and primary school children's academic achievement.

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APPENDICES

APPENDIX A: Questionnaire for Teachers

This research is meant to check strategies for assessment of achievement in number work in pre unit children. You are kindly urged to provide answers to the questions frankly and be precise .Give short answers. Please tick where appropriate. ()

Section A: Demographic information

1. Gender: Male () Female ()
2. Age: Below thirty () Between31-40() 41-50()
- 3 .Marital status: Married () single ()
4. Level of education: Master's degree () Bachelors () Diploma () Certificate ()
5. Teaching experience :()
Above 5 years () 2-5years () Below1year ()

Section B: Assessment strategies you employ in assessing preschool children

- 1 .Observation () written tests () practical work ()
- 2 .How often do you assess preschool children?
Weekly () Monthly () Termly ()
3. How do you rank preschool children?
Norm referencing () Criterion referencing ()
4. How often do you prepare before you teach?
Daily () weekly () monthly () Termly ()
5. Who finances your materials for assessment?
Parents () The school () Faith based organizations () Sponsor ()

APPENDIX B1: Observation schedule for Children - Class: pp1

Indicate: Very good, Good, Fairly good, Fair, in the spaces provided:

Teacher x:

Child A:

Activity:

Modeling: -----

Very good () Good () Fairly good () Fair ()

Drawing: -----

Very good () Good () Fairly good () Fair ()

Play: -----

Very good () Good () Fairly good () Fair ()

Interaction with the teacher: -----

Very good () Good () Fairly good () Fair ()

Collaborative learning: -----

Very good () Good () Fairly good () Fair ()

Cooperation: -----

Very good () Good () Fairly good () Fair ()

Child's work: -----

Very good () Good () Fairly good () Fair ()

Strengths identified: ----- Date: -----

Signed: -----

APPENDIX B2: Observation Schedule for Children - Class: pp2

Indicate: Very good, Good, Fairly good, Fair, in the spaces provided:

Teacher x:

Child A:

Activity:

Modeling: -----

Very good () Good () Fairly good () Fair ()

Drawing: -----

Very good () Good () Fairly good () Fair ()

Play: -----

Very good () Good () Fairly good () Fair ()

Interaction with the teacher: -----

Very good () Good () Fairly good () Fair ()

Collaborative learning: -----

Very good () Good () Fairly good () Fair ()

Cooperation: -----

Very good () Good () Fairly good () Fair ()

Child's work: -----

Very good () Good () Fairly good () Fair ()

Strengths identified: ----- Date: -----

Signed: -----

APPENDIX B3: Observation Schedule for Children - Class: pp3

Indicate: Very good, Good, Fairly good, Fair, in the spaces provided:

Teacher x:

Child A:

Activity:

Modeling: -----

Very good () Good () Fairly good () Fair ()

Drawing: -----

Very good () Good () Fairly good () Fair ()

Play: -----

Very good () Good () Fairly good () Fair ()

Interaction with the teacher: -----

Very good () Good () Fairly good () Fair ()

Collaborative learning: -----

Very good () Good () Fairly good () Fair ()

Cooperation: -----

Very good () Good () Fairly good () Fair ()

Child's work: -----

Very good () Good () Fairly good () Fair ()

Strengths identified: ----- Date: -----

Signed: -----

APPENDIX C: Written Tests for Children

Assembled groups	Number work activities			
	Sorting/grouping	Matching/pairing	Putting together	Taking away
45				
40				
40				
32				
35				
40				
35				

Thanks for your cooperation

APPENDIX D: Research Authorization (UON)



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9th June 2015

RE: KARONJO MERCY MUGURE REG No: – E57/63741/2013

This is to certify that Karonjo Mercy Mugure Reg No: – E57/63741/2013 is a student of the University of Nairobi, Department of Educational Communication and Technology. She pursued Master of Early Childhood Education. Her project Title is "~~EFFECT OF ASSESSMENT STRATEGIES ON PRE-SCHOOL CHILDREN'S ACHIEVEMENT IN NUMBER WORK IN LIMURU ZONE, RIAMBU COUNTY, KENYA~~".

Any assistance accorded to her will be highly appreciated.


Yours faithfully,



Chairman
Prof. Paul A. Odunjo
CHAIRMAN, DEPARTMENT OF EDUCATIONAL COMMUNICATION AND TECHNOLOGY
P.O. Box 92
Kikuyu
University of Nairobi


APPENDIX F: Research Clearance Permit

THIS IS TO CERTIFY THAT:
MS. MERCY MUGURE KARONJO
of UNIVERSITY OF NAIROBI, 1550-217
LIMURU, has been permitted to conduct
research in Kiambu County
on the topic: EFFECT OF ASSESSMENT
STRATEGIES ON PRE-SCHOOL
ACHIEVEMENT IN NUMBER WORK
ACTIVITIES IN LIMURU ZONE, KIAMBU
COUNTY, KENYA.
for the period ending:
25th February, 2017.

Permit No : NACOSTI/P/16/52958/9098
Date Of Issue : 26th February, 2016
Fee Received :Ksh 1000




Applicant's Signature 

Director General National Commission for Science, Technology & Innovation 

CONDITIONS

- 1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.**
- 2. Government Officers will not be interviewed without prior appointment.**
- 3. No questionnaire will be used unless it has been approved.**
- 4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.**
- 5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.**
- 6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.**

REPUBLIC OF KENYA

NACOSTI
National Commission for Science, Technology and Innovation
RESEARCH CLEARANCE PERMIT
Serial No. A 16/52958/9098
CONDITIONS: see back page