THE EFFECTS OF MANIPULATIVE MATERIALS ON ACADEMIC PERFORMANCE IN LANGUAGE ACTIVITIES AMONG PRE-SCHOOL CHILDREN IN RIRUTA ZONE, NAIROBI COUNTY

BY

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DECLARATION

This research project is my original work and has not been presented for the award of degree in any other university.

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This research project has been presented for examination with my approval as the University Supervisor.

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DEDICATION

I dedicate this research work to the Almighty God for the gift of life and for His continued favour and also for enabling me to accomplish this work. I also dedicate this work to my beloved husband Mr. Kamau for his continued support and encouragement.

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ABSTRACT

The study set out to establish whether manipulative materials influenced children's performance during their learning of language activities. The study targeted 20 preschools from both public and private school. The schools were identified through random sampling method. The research design used was quasi experimental. It had control and experimental groups, the pre- test and post- test were given to identify the difference in performance. Observation schedules checklists were used to determine how manipulative materials were being used in the lessons. Questionnaires were also used on teachers and head teachers. The 20 pre-school head teachers and 20 pre-schools teachers completed questionnaires which were analyzed using both qualitative and quantitative methods. Children in the experimental groups who used manipulative materials performed better than those who did not use. Their oral skills improved tremendously due to active involvement of activities that involved manipulative materials. The study recommended that teachers should have a positive attitude towards use of manipulative materials for a better performance and the concerned parties should ensure that pre-school classes are equipped with relevant manipulative materials. The study may be of benefit to curriculum developers, headteachers, teachers, parents and to all stakeholders in education sector. There is need for quality and standards assurance officers visit pre-school teachers more frequently and provide their guidance on the importance of using manipulative materials in teaching language activities.

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LIST OF ABBREVIATIONS AND ACRONYMS

ECD	Early Childhood Education
ECDE	Early Childhood Development an Education
DICECE	District Centre for Early Childhood Education
DISTAR	Directed Instructional System for teaching Arithmetic and Reading
KICD	Kenya Institute of Curriculum Development
LAD	Language Acquisition Design
MEO	Municipal Education Officer
MOE	Ministry of Education
NACECE	National Centre for Early Childhood Education
EFA	Education for All
GOK	Government of Kenya
TSC	Teacher's Service Commission
KNEC	Kenya National Examination Council

CHAPTER ONE

INTRODUCTION

This chapter is composed of the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, delimitations, limitations, assumptions of the study. The chapter concludes with definitions of operational terms.

1.1 Background of the Study

Piaget and his supporters argue that action of activities promotes initial language development. To acquire language, children need to manipulate objects and to have rich variety of concrete experiences (Piaget and Inhelder, 1977). This idea makes considerable sense to anyone who works with pre-school children, such children often learn concepts for example heavier and lighter than, more easily if they can have lots of actual experiences with lifting and observing objects of different weights. If young children are taught the definitions of these words without having such experiences, they often just learn the words by rote (Kamili and Devries ,1977). Therefore, children understand various concepts for example smaller and bigger than, shorter and taller than, more and lesser than, smooth and rough through playing with materials. Language is a means of communication and through language children are able to express themselves exchange ideas and speak out their hearts. Preschoolers begin acquiring skills of communication from how language is used by native and also competent communication requires practice of talking and listening to others. Children learn language through imitation.

In recent years early education has evolved a good deal, and several approaches that especially emphasize language development of children have been formulated. At one extreme are highly structured language training program like the one called DISTAR, (Engelmann, 1980). Other program has attempted to construct a curriculum out of Piaget's theory of cognitive development (Kamii and DeVries. 1977). Consistent with the development stages expected of pre-school children, Piaget's programs emphasize a mixture of sensori motor preoperational activities. For example, children spend a lot of time manipulating materials such as sand and water. Another approach organizes activities around highly structured materials developed by Maria Montessori (Montessori, 1964). The materials are made to illustrate some words rather than verbal interaction. According to Maria Montessori children learn through manipulation of materials.

In conclusion, when children are engaged in different approaches, they seem to stand better chances of succeeding during grade schools and beyond (Berreuta Clement et al., 1984). Manipulative materials which are educational inputs are of vital importance to the teaching of any subject in the school curriculum (Mysers. 1992) was of opinion that the use of instructional resources would make discovered facts glued firmly to the memory of students Stater (1991) also added that a well- planned and imaginative use of visual aids in lessons should do much to banish boredom. The guidelines for the pre-school education in Kenya, (KIE, 1984) issued by the Kenya Institute of Curriculum Development, designs curriculum, selects what is to be learned and taught, determines how the materials should be learned and taught, provides guidance on how to implement the curriculum in varying schools' contexts and providing for the types of

pupils, social situations and physical environments. Kenya government through curriculum development have underscored the importance of manipulative materials in the teaching and learning of language activities (KIE,2006)

Language activities are things which children do to enhance their language. Pre-school language activities play an important role in the development of child's vocabulary, listening skills and communication skills. Language performance depends on three language skills namely oral, reading and writing skills. Oral skills involve doing the following: News telling, discussion, play and pretence activities. Reading skills includes activities such as reading books, reading pictures and symbols describing objects, recognition, matching games. Writing skills include scribbling, drawing, printing, modelling, writing pattern, colouring, painting, tracing, cutting and sticking. Some of the manipulative materials required when teaching, reading readiness skills ,writing skills , oral skills are picture books, magazines , charts , puzzles ,computers ,projectors, cutouts and many others .

1.2 Statement of the Problem

There are many factors that affect the performance of pre-school children in language activities. These factors include teaching approaches, teacher and experience attitude, completion of the syllabus, class enrolment, the location of schools, parents' economic status and expectations and use of manipulative materials. Smith (2009) confirmed that most valuable learning occurs when the learners actively construct their own understanding, which is often accomplished through the use of manipulative resources. Therefore, this study

investigated the influence of the use of manipulative materials on children's performance in language activities in Riruta Division, Dagoretti Constituency.

1.3 Purpose of the Study

The purpose of the study was to determine how the use of manipulative materials affects children's performance in language activities in pre-school Children in Riruta zone, Dagoretti Constituency.

1.4 Objectives of the Study

The study sought to:

i. Determine the effect of use of manipulative materials on performance in oral activities among pre-school children.

ii. Determine the effect of use of manipulative materials on performance in reading readiness skills among pre-school children.

iii. Determine the effect of use of manipulative materials on performance in writing skills among pre-school children.

1.5 Research Questions

This study was guided by the following research questions:

i. What is the effect of using manipulative materials on performance in oral activities among preschool children in Riruta zone?

ii. What is the effect of using manipulative materials on performance in reading readiness skills among preschool children in Riruta zone?

iii. What is the effect of use of manipulative materials on performance in writing skills among pre-school children?

1.6 Significance of the Study

This study may be of benefit to curriculum developers; the teachers, the learners, the head teachers, the parents, the public and all the stakeholders in education industry. This may help them to adopt and emphasize more on the use of manipulative materials in the teaching process. Manipulative materials make learning captivating and fulfilling experiences. They make it easier for the learner to understand more easily, respond quickly and retain the concept for long, thus enhancing good memory.

1.7 Limitations of the Study

According to Best and Kahn (2003), limitations are conditions beyond the control of the researcher, that they may place restrictions on the conditions of the study and their applications to other situations. The study may be generalized or applied to areas that have similar characteristics like those of pre-schools in Riruta zone. The Headteachers and pre-school teachers may also be biased in giving out information thus affecting the research findings. Therefore, the researcher must reassure them of confidentiality.

1.8 Delimitation of the Study

The study confined itself to pre-school teachers, children and head teachers who were directly involved in pre-school language activities. The language activities were oral skills, reading readiness skills and writing skills. This was to include both private and public schools in Riruta zone, Dagoretti Constituency.

1.9 Assumptions of the Study

This study assumed that all ECD centers encouraged the use of manipulative materials in teaching language activities. It also assumed that respondents were honest in their responses.

1.10 Definition of Operational Terms

Language activity	The activities that learners participate in ECE.
Child	A young learner in pre-school aged between three to eight years.
Pre-school children	Are learners in Nursery Schools, Day Care Centres, Kindergartens, Pre-primary Units and ECD centres.
Manipulative materials	They are physical objects that are used as teaching aid including pictures, books, magazines, charts, writing materials
Learning	The process of acquiring knowledge, skills formally/ informally.
Language activities	A means of communication which is worth a language that people express themselves when communicate feelings.

1.11 Organization of the Study

The study is organized in five chapters. Chapter one introduction has the following areas: the background to the study, the statement of the problem, the purpose of the study, the objectives and research questions. In addition, the limitation of the study was highlighted. Chapter two reviewed the related literature while chapter three highlighted the designing methods of the study. Chapter four was organized according to discussions of the study and chapter five summarized the whole project by concluding and giving recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter reviews manipulative materials in language, language skills, teachers' attitude on manipulative materials and how they affect the children's performance in language activities. Language activities are activities that children participate in to enhance their language and they play an important role in the development of children's oral skills, writing skills and reading readiness skills. To acquire language, children needs to manipulate materials and to have a rich variety of concrete experiences (Piaget and Inhelder, 1997).

Early childhood Education can play an essential role in preparing young English language learners (Ells) for later success in school. Children who have an opportunity to develop basic foundational skills in language and literacy in pre-schools enter Kindergarten ready to learn to read and write (Ballentyne, Sanderman and Mclaughlin, 2008).

Children require multiple exposures to words in order to develop a rich understanding of their meaning and use. Teachers should make a point of introducing interesting new words for children to learn into each classroom activity (Tabors, 2008) presenting vocabulary thematically helps children make associations between words and scaffolds students learning (McGee & Richgels, 2003). Read aloud that include explanations of targeted vocabulary can support word learning (Brabham and Lynch Brown, 2002: Cayne, Simmons, Kame'enul and Stoolmiller, 2004), as can dramatic play organized around a carefully chosen theme (Barone & Xu, 2008; Tabors, 2008).

English language learners need lots of opportunities to engage in social interactions with other children, but they also need support from adults as they develop the language skills they need to negotiate those interactions (Ballentyne et al., 2008). To foster social interactions, one can pair English language learners with children who have strong English language skills, and make sure that all the children are not grouped together (Barone and Xu, 2008). Provide opportunities for self-directed activities so that children can choose activities that match both their interests and their language abilities (Bunce and Walkins, 1995). Encourage child talk by providing prompts when children need help in expressing themselves.

Use open questions or questions that can have multiple answers to help children expand their own utterances. Exposing children to rich language input whether through shared book reading or through teachers talk has been shown to enhance children's oral language development (Aukrust, 2007; National Early Literacy Panel, 2008). One effective strategy is for the teacher to provide an on-going commentary on activities that are taking place in the classroom in order to expose children to language associated with the immediate context (Bunce & Watkins 1995; Tabors, 2008). The teacher also needs to arrange the classroom in a way that support each type of instructional activity that will take place and then keep changes to the physical environment to a minimum. To physical environment will cure them as to what they are to do and how they are to behave in that area (Barone Xu, 2008). Predictable classrooms routines can also provide scaffolding for English language learners by allowing them to anticipate what will happen each day, including the type of language they will need for each activity (Bunce & Watkins, 1995; Taburs, 2008).

2.2 Manipulative Materials

Manipulative materials refer to the materials resource that support learning process. They can also be defined as those materials that aid the teacher in presentation of ideas or concepts to the learners in a learning environment. The materials can either be locally made or commercially obtained. Amis, (1997) states that manipulative materials facilitates learning process when properly used. He looked at manipulative materials as all information that can be used to promote and encourage effective teaching/ learning activities. Manipulative materials provide the opportunity for learners centered methods of education. They also arouse learner's interest, stimulate imagination and raise questions of discussion and a desire to find out more.

According to Ayost (1987) manipulative materials are categorized into three; the software, hardware and environment. Software in general includes textbooks, chart, pictures, photographs, flash cards, posters, realia, they acknowledge that the visual sensory skills are the most powerful of the senses the child can visualize, perceive and put interpretations levels to different meanings. Hardware learning includes projected materials that are demonstrated with the aid of machines such as projectors. The projection techniques are designed to enable children to see an illustration or image of the pictures being projected. These materials include avail materials for example record players, radio, television, films internet. The third category is the environment, these are things found in the world around us. They are the best manipulative materials required in the teaching process because they are real and readily available, they are also known as realia.

It is important to note that children in pre-school should be given many opportunities to play freely with manipulative materials in a learning lesson (Carbonneau & Marley, 2013) & Moyer (2001) pointed out that the learner needs to be familiar with the manipulative materials at hand to reduce the cognitive demand of its use. Many manipulative materials introduce to children a variety of words, symbols, models and images to represent the same concept or process of acquiring language concepts.

Therefore, teachers should ensure a variety of manipulative materials are available in class and enough for all the learners. (Allen and Hart 1996) observed that learning resources presented in early childhood setting should be chosen to provide many and varied opportunities for the children to practice and master familiar skills. Touching of different types of manipulative materials allows the learners to use their senses and making learning of language more interesting.

Children's character and behavior is that they want to see different things every time. A teacher that uses different types of manipulative materials each time or during the lessons achieve more positive results compared to one who uses the same manipulative materials every lesson (Clement & Battisa, 1990). The teacher should also provide manipulative materials of different colours because children at this level love the primary colours which are red, blue, green and yellow because of their brightness (Olie, 2001).

The manipulative materials should be easy for the learners to manipulate without getting frustrated (Weller, 1999). Different types of manipulative materials increase chances of greater perception understanding and retention

rate. Acquisition of new knowledge is largely attributed to the interaction between the learner and the learning environment since it is during the process of interaction that the learners existing structures are adjusted to accommodate new knowledge (Wendoh, 2012).

Flashcards are one of the fastest paced learning tools one can use. They allow learners to quickly revist information and test knowledge. Research findings show that using of flash cards to embed knowledge into the brain is based on psychological theories. Flash cards are a type of data- based instruction strategy that is usually associated with direct instruction (DI) procedures described by (Silber, Carnine and Stain (1981) for teaching.

Dienes (1971) Dennema (1992), Lesh (1919), Wilson (1991) & Askew (1997), Flash cards work and produce results in the following ways; they burn information into the brain of the learner meaning as they engage they actively recall. When a learner practices a flash card deck, their brain is given a clue on the front side and they attempt to actively recall information on the back, each time a student practices this process it means that they are forcing their brain to remember a concept. This makes using flash cards a compelling method of memorization. Psychology study carried out with students at the University of California, found that spacing using flash cards is more effective study technique than cramming before an exam with 90% of participants performing better using this method (Jason, 2012).

According to Phyllos (2011), manipulative materials possess some inherent advantages that make them unique in teaching. For one thing, they provide the teacher with interesting and compelling platforms for conveying information

since they motivate learners to want to learn more and more. Also by providing opportunities for private study and reference, the learners interest and curiosity are increasingly stimulated. Further, the teacher is assisted in overcoming physical difficulties that could have hindered his effective presentation of a given topic. They generally make teaching and learning easier and less stressful. They are equally indispensable catalysts of social and intellectual development of the learners.

Eva (2004) assert that, "teaching equipment and materials have changed over the years, not only to facilitate teaching learning situation but also to address the instructional needs of individuals and groups". Manipulative materials are made up of objects such as printed, audio, visual that aid in the successful delivery of lesson (Chuba, 2002). To this end manipulative materials are said to be objects or materials the teacher can use in the classroom while teaching in order to ease off his teaching activities.

Toof (2005) explained that, "the concept of teaching aids has gone through several evolutionary stages form the simple aids, instructional technology and media to communication and educational technology". This however tells us that manipulative materials are not just objects or equipments used during teaching learning process, but those objects improvised by the teacher to make conceptual abstraction more concrete and practical to the learners. Manipulative materials are relevant materials utilized by a teacher during instructional process for the purpose of making the concepts of the instructions more practical and less vague (Chuba, 2000).

Ajay (2006) opined that, “without the teacher who is knowledgeable, manipulative materials cannot create change and progress, the only time it begins to make impact is when the teacher begins to make use of it and allows it to take over its values”. This portrays the professional’s attributes of the teacher and general knowledge or his/ her creativity, develop and use of materials effectively (Esther, 2009). Teaching and learning materials design, production and their use facilitate the teaching and learning outcomes. However, the success of using manipulative materials to meet the teaching objectives demands, effective use and communication skills of the teacher to satisfy instructional delivery.

Therefore, the manipulative resources should fit the ability of the, learner or else it is useless (Clement, Hand & Battisa, 1990). Learners should make sense of the manipulative materials and use them to support their arguments. Therefore, manipulative materials should be in different types, different sizes, different colours, very attractive to the learners, adequate available and accessible to the learners when teaching language activity.

2.3 Language Activity

Language is a means of communication whether spoken, written or signed. Through language people express their desires, ideas, excitements, amusement and disappointments. Language enables children to express themselves and satisfy their needs. Through language they communicate their feelings to others as they interact with them. A lot of learning occurs in the process of interacting with environment.

Language is an important tool for thinking, it helps children develop ideas and concepts, for example when young children are doing an activity they talk about it, and this helps them improve about it, and this helps t h e m improve and express their thoughts. During the early of life, children develop oral, reading and writing skills which are important in language development.

2.4 Oral Skills

Oral skills include listening and speaking skills, which are essential for reading and writing readiness skills. Development of skills involves helping children to speak clearly and fluently, listening with understanding and differentiating sounds. In oral works, pre-scholars can do the following activities: singing, listening dramatization, role play, discussions, reciting poems, storytelling, tongue twisters, riddles, rhyming.

Oral language provides children with a sense of words and sentences and builds sensitivity to the sound system so the children can acquire phonological awareness and phonics. Through their own speech children demonstrate their understanding of the meaning of words and written materials (Gigioli, 1973).

Oral language develops concurrently with literacy development and it includes listening comprehension, verbal expression and vocabulary development. Oral language development is facilitated when children have many opportunities to sue language in interactions with adults and each other when they listen and respond to stories. Young children build vocabulary when they engage in activities that are cognitively and linguistically stimulating by encouraging them to describe events and build background knowledge.

Children reared in families where parents provide rich language and literacy support do better in school than those who do not. Language in poor families is likely to use fewer different words in their everyday conversations and the language environment is more likely to be controlling and punitive. Early language and communication skills are crucial for children's success in school and beyond. Language and communication skills include the ability to understand others and express oneself using words, gestures, or facial expressions. Children who develop strong language and communication skills are more likely to arrive at school ready to learn.

2.5 Reading Readiness Skills

Reading readiness skills involves training children to observe and interpret details in picture, objects or symbols. It also entails classification of objects by colour, kind, shape, size and texture. Children should be encouraged to discuss the objects or pictures in front of them into details. They can also be given pictures of animals to cut out and stick them on paper or to draw pictures of objects they see. Children should be given many varied activities to help them develop their abilities and create interest and enjoyment. Teachers should create a free and relaxed atmosphere in class so that children are able to explore exploit and realize their abilities. The following are the activities that enhance reading readiness skills observing and description of objects, picture reading games and recognition of colours, pictures, letters and words memory games, matching games.

Some of the reading skills expected for every kindergarten students are:

Able to read his/ her name, recite the letters of Alphabet, recognize some or all of the letters in the alphabet, correspond the letters with their correct sound, make rhymes, hold a book right side up with the spine on the left, front cover showing, recognize that the progression of text is left to right, top to bottom, echo simple text that is read to them, recognize that text holds meaning, re-tell favorite stories.

Not all children who are quite steady in all of these areas and therefore parents should not panic because every child enters kindergarten at a different level and teachers expect a huge variation in the skills each student brings. They are trained individually no matter what. According to Lesley M. Morrow, PhD and distinguished professor of literacy at Rutgers university in New Jersey, one of the main reasons why kindergarten reading is taught in small groups is so that teachers can easily cater for different levels of reading readiness. More advanced readers can be taught in a way that limits boredom, and more beginning readers at a pace that minimizes frustration. Reading skills should be taught in a systematic way that allows skills to build upon one another. The kindergarten year will start out strong with an intense teaching of letter recognition and sounds. This lends itself to beginning phonemic awareness skills, like sounding out words.

Once a child can sound out words, teachers more on to showing them how to recognize patterns in words, such as rhyming, vowel consonant patterns and word families. If a kindergartener can recognize letters and sounds, use phonetic skills to sound out words and sue word patterns to figure out unknown words, she is ready to ready sentences and simple books. For children to acquire

reading skills, parents and teachers are advised to encourage them to keep on practicing and keep lots of books around and offer plenty of encouragement. Skill building in preparation for your child's first year of formal schooling is important, but it's even more important to foster a love for reading. By all means play rhyming games with your child. Ask him/ her to re-tell a story after you read it together. Practice reading words around the neighbourhood, like stop signs or logos. But if your little one's experiences frustration take a break or rework your plan in order to get her buy in.

Most of all, keep in mind that kindergarten age kids are going through huge developmental changes. While some reading skills may seem impossible for your child to grasp one day, he may have them down put the next. Therein lays the beauty of Kindergarten. Therefore, keep the pressure low ad have confidence that your little reader will progress steadily as he builds his skills, one on top of the other.

2.6 Writing Skills

Writing skills is an important skill for communication. At pre-school level children should be given writing readiness activities to prepare them for actual writing. They will need activities which prepare them physically for the activity of writing but also mentally so that they will have ideas and concepts to write about. They w i l l also need vocabulary and should have enough language so that they can be able to express themselves adequately. Examples of activities that children do in pre-school to enhance writing are scribbling drawing printing colouring. Tracing, writing patterns etc. these activities strengthen and develop control of finger muscles used in writing activity.

Early writing is one of the best predictors of children's later reading success (National Early Literacy Panel (NELP, 2008). Specifically, early writing is part of a set of important foundational literacy skills that serve as necessary precursors to conventional reading (White burst & Lonigan, 1998) including developing understandings of both print (i.e. print concepts and alphabet knowledge) and sound (i.e. phonological awareness).

Print knowledge includes general understandings of how print works e.g. left t right directionality and the names of the sounds of the alphabet. Children can grow in their understanding of how print and sound work together through experimenting with writing. Writing serves as a type of laboratory, in which even very young children are actively creating and testing hypothesis about how writing works (Bissex, 1980).

Children notice print in their environment and use their experiences to invent and revise ideas about the rules that govern writing. "Cracking the code" of literacy one piece at a time. For example, a child might believe based on his experience with print and knowledge of the world that really big animals have really big written representations. So, he might represent the word elephant with a very big and wide scribble and might represent the word bee with a short, tiny scribble, as he begins to grasp the alphabetic principle his hypothesis change.

To help children develop as writers' teachers need to understand typical writing development and use this knowledge to identify what children already know and what children already know and what they are ready to learn next. Specifically, each child's writing provides teachers with a window into what that child knows about print and sound. The following are the four levels of

early writing development that are designed to provide teachers with a straight forward framework with which to evaluate children's written efforts.

2.6.1 Drawing and Scribbling

Early development, children's drawings are their writings and children make no distinction, between the two when asked to write. Children then begins to make separate marks representing "writing" apart from their drawings, a key developmental event indicating that children have begun to grasp the functionality of writing as separate from illustration. These early marks are often directionless scribbles. These scribbles then begin to take on features of written text children see in their environment, the scribbles eventually evolve into separate distinct characters (e.g. Lieberman, 1985).

2.6.2 Letters and Letter Like Forms

Next children begin to write with letter- like forms and a few letter shapes, although these early forms mimoc letter shapes, they are at first not conventional letters. When children do begin writing conventional letters, they often produce what may appear to be random strings of letters because they do not yet connect letters to the sounds in spoken language. Children typically begin by reproducing letters found in their names. The first letter of their names along with other name letters are usually seen repeatedly in children's early writing (Treiman, Kessler & Bourassa, 2001). Children at this level may mix symbols and numbers with random letter like forms and conventional letters.

2.6.3 Salient and Beginning Sounds

Children reach a critical point in writing development when they start to represent the sounds that they hear in spoken language. Relying on their growing knowledge of both print and sound, children begin to invent spellings, which means they create logical phonetic spellings based on their knowledge. They often represent salient sounds, or the sounds that are the most prominent because of the way they feel in the child's mouth (Bear et al, 2008) for example a child may write the 'b' for the word baby, because her lips come together twice when saying the word. She might logically substitute 'f' for 'v' because the sounds feel similar on the lips. When writing a sentence, children may represent a letter for each salient sound they hear for each word for example, "I like juice' a child may write 'ikj' without any space.

2.6.4 Beginning and Ending Sounds

As children's phonemic awareness grows to the point at which they can attend to individual sounds in words, they begin to represent beginning and ending sounds of words in their writing. They also consistently write with spaces between words, indicating that they understand where word boundaries occur. When writing the simple consonant- vowel-consonant pattern word "map" children at this level will write "mp".

Children also use a letter name strategy when beginning to spell, using their knowledge of letter names to create spellings for example "eight" might be spelled as "At" Children who are writing with beginning and ending sounds generally do not consistently represent the riddle sounds in words, especially vowel sounds, until the next phase in their development (Bear et al, 2008).

2.7 Conclusion

Teachers should determine each child's current level of development through observing children's writing. A thoughtful ongoing examination of children's early writing can provide teachers with a window into children's knowledge of print and sound that can inform productive instruction. Although writing progresses in a developmental order, it is not necessarily the case that children master one level before moving to the next. Many children move back and forth between levels of difficult, particularly across writing tasks for example name writing vs story writing.

Effectively incorporating support for children's varying writing skills provides a gateway to developing other critical literacy skills and significantly contributes to later reading achievement (National Early Literacy Panel, 2008). The knowledge teachers gain from assessing children's writing samples can be used to select appropriate individualized strategies for scaffolding and expanding children's writing efforts. Individualizing writing instructions provides meaningful and approachable writing experiences for all children, setting the stage for reading and writing success for years to come.

2.8 Teachers Knowledge on Manipulative Materials

According to Harbert and Frankel, (1999) if teachers have insufficient subject knowledge or inadequate level training the quality of output will be impaired, could be serious depending on the extent of insufficiency. Lack of adherence to a minimum nationwide standard of employment of teachers, they add, is not good for quality as the degeneration of a teacher competence is psychology,

subject methods and practical training adversely impacts on the quality of educational experiences on learners.

According to Maier (1976) the academic and professional qualifications of teachers were crucial factor in influencing performance. The difference in teaching affects the performance and those schools with best qualified teachers tendered to be the most successful in examinations. (Spokek, 1989) adds that language does merely involve the learning of facts but learning communication skills and use of language that improves performance. These are oral, reading and writing skills.

2.9 The Role of a Teacher in Language Activity

The role of the teacher through universal at all levels of learning, has a more pronounced impact at pre-school, because of the developmental stages the children are undergoing. The kind of a relationship a teacher establishes with the children will influence how and what they learn and the type of group adjustment they make. (Lillies, 1975). Therefore, the teacher should:

Identify teaching materials and methods of use when teaching language activity, organize the space and the materials in it, has to provide a good environment and opportunities for exploration, provide guidance on how to use the materials. The teacher should give opportunities for self- expression, competency in expressing thoughts and feelings. This is done based on the abilities of the child, and the overall aims and objectives of pre-school language activity. Given that children have a short a attention span, the teacher should know and apply techniques to motivation to get them actively involved in learning. This calls for both extrinsic and intrinsic motivation. He/ she should

give opportunities for storytelling, news telling, discussion, reciting poems, riddles etc.

The teacher should know how to manage time and plan his/her activities very well. A teacher needs to be sensitive to the time when activities should be terminated because fatigue, lack of interest or impending trouble may result due to prolonged time, as children prefer short activities. The teacher should allow the children to express themselves freely to enhance confidence, memory speaking clearly a n d fluently. Teachers are advised to set up a book corner in the class a n d provide as many interesting and simple picture books or magazines for the children. This will enhance interest in book, eye coordination, reading simple words, reasoning and thinking logically. Teachers are also advised to provide opportunities for children to speak out their observation, and especially through discussion.

The teacher listens to children who have problems with pronunciation and articulation. She helps by saying the incorrectly pronounced words for the child to hear, and correct him/her. The teacher should encourage singing, reciting poems, tongue twisters, riddles, drama, discussion. She is also supposed to collect some from the community and teach them to the pre-scholars. These activities enhance good memory, self-expression, confidence, speaking fluently.

As past research shows, when teacher provide children with higher levels of language stimulation during the first years of life, children have better language skills. When teachers ask children questions, respond to their vocalizations and engage in other positive talk, children learn and use more words. A study found

that one third of the language interactions between teachers and children were the type that support children's language development while the other two thirds included less complex language such as directions general praise and rhetorical questions.

Ten practices a teacher can use to promote language and communication skills to children are: Engaging in conversations with children, giving descriptions of objects, activities or events, using different types of words and grammar, providing children with the names of objects or actions, engaging in activities or objects that interest children, using books to engage children's participation, reading books multiple times, introducing objects that sparks conversations, engaging in musical activities and using gestures or simple signs with words.

2.10 Theoretical Framework

This study will be anchored in the constructivist theory which says that learners actively construct new knowledge for themselves. Constructivism is the synthesis or multiple theories diffused in one form just -s cognitive learning psychology began replacing the predominant cognitive approach. According to constructivist, learning may be defined as a process that begins with relevant experience, background knowledge and proceeds through experimentation, is simple words from known to unknown.

Education according to constructivist should be viewed as learners actively constructing their own knowledge with teachers being coaches, facilitators or even partners with learners in the leading process. Constructivist learning theory maintains that knowledge is not received from outside, but that we construct

knowledge in our head. The teacher should create educational environment that facilitate the construction of knowledge.

Dewey (1859-1952) believes that people actively learn from their environment by reflecting on experiences around them. Active learning requires the learners continually assimilate and accommodate new information to construct knowledge. He believed in social learning to solve problems using democratic process or the scientific method of enquiry. Dewey f e l t that the pupil was an active learner that should achieve learning using the teacher as a guide as cited in (Sowel, 2009).

According to Rebecca and Moncreft (2007), children make concept on their own by manipulating concrete objects through hands on activities by playing with realms and having concrete relationship with their environment. Cognitive social learning theory by Bandura explains how children learn new behaviour through imitation and observation.

Piaget's cognitive theory (1964) emphasize that instructional media translates a distract concept thus enhancing performance. Piaget also emphasized that children, especially during their early years learn through the use of their senses; tactile, gustatory, olfactory, visual and audio. They do this as they play, manipulate, explore, experiment and observe whatever is in their environment concept and skills. Piaget's theory implies that, the teacher should be a facilitator of the children's learning. The teacher can do this by doing the following providing an environment that stimulates children to construct knowledge and find about things on their own as they play asking them open -ended and challenging questions which stimulates them to think and to solve problems,

providing guidance for children as they interact with their environment and providing opportunities to recognize that other people have different points of views. The teacher should also be listening to children as this encourages them to explore and ask more questions.

The ease and speed that the children show in acquiring language have made some linguistic and psychologists conclude that children have an innate predisposition or built in tendency, to learn language (Chomskv. 1976; Slobin, 1973). For convenience, the tendency is sometimes called the language acquisition device or LAD for short. According to this viewpoint, LAD functions like a kind of inborn road m a p to language. It guides the child to choose appropriate syntactic categories as he tries to figure out the comparatively confusing examples of real speech that he ordinarily hears.

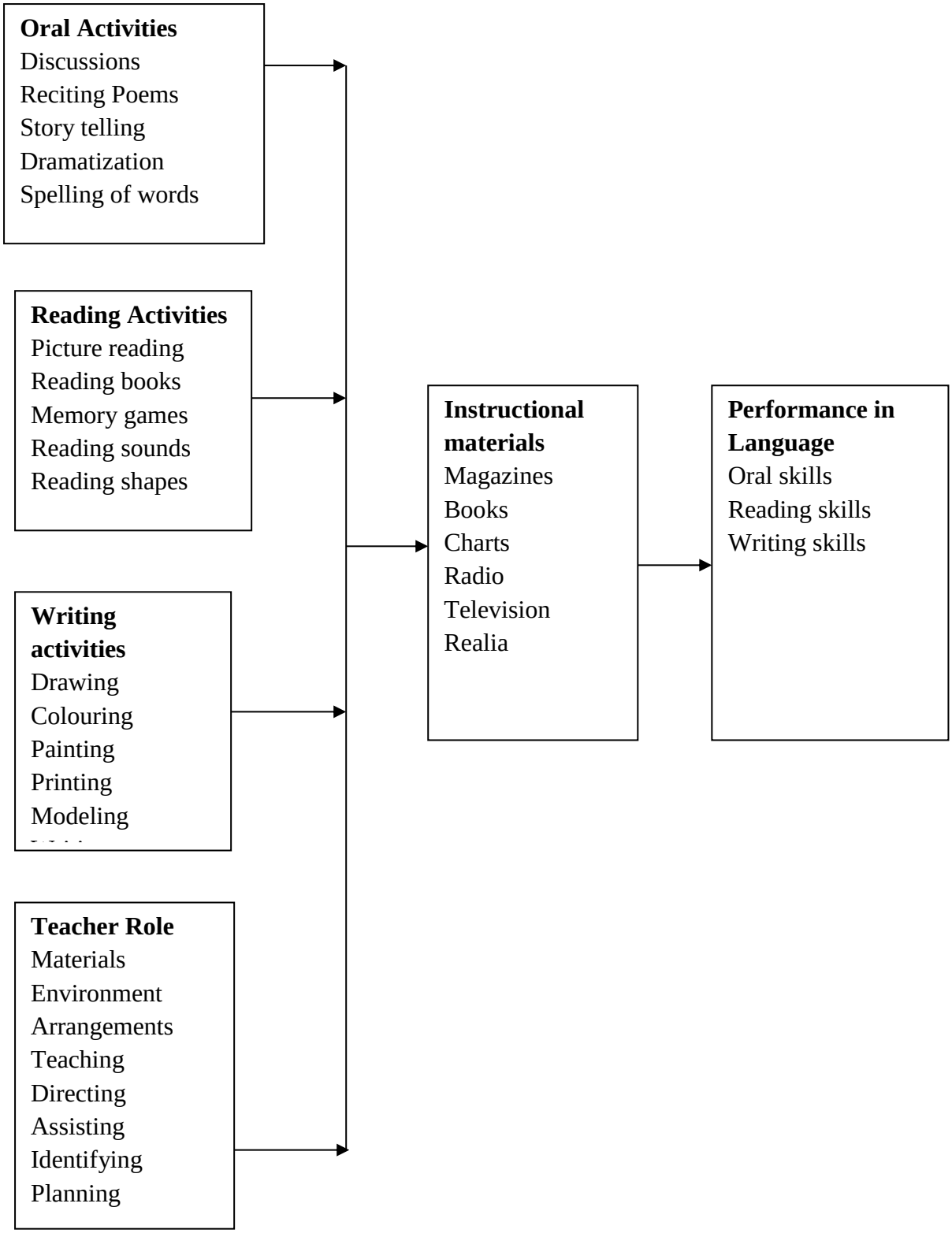


Figure 2.1: Conceptual Framework

2.11 Summary of the Reviewed Literature

From the studies conducted by different scholars above (Stater, 1991) viewed that language is reinforced by rewards. He proposed that the language of the pre-school child is generally characterized by under extension one extension, ignorance or supposition and egocentricity.

Instructional media according to scholars help to bring out the hidden talents of the pupils as they learn many good things through media. At the same time media plays a powerful role in providing entertainment information and also has potential to support a child's development and improve performance in language activity. On the other hand, some programmes have a negative effect on the child's performance and at the same time causing health problems as well as making them adopt more aggression which may spoil their future.

Children not only can use multimedia to learn but they can use it to communicate their understanding of the subject to those around them. They can create what they learn by using an authorizing tool such as hyper card. Peer teaching can also be sued as children work together in making their projects. Children become active participants instead of passive sponges and their teacher truly plays the role of a facilitator as she/ he gives them guidance in their creation (Owen, 2002).

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

The purpose of this chapter was to present the design and methodology used in the study. It highlighted the research design, target population, sample size and sampling procedure, data collection, research instruments, validity of the instruments, reliability of the instruments, Pre-test and Post-test, data collection and data analysis. The researcher targeted all pre-schools in Riruta Zone, Dagoretti constituency.

3.1 Research Design

The research study used a Quasi- experimental design. It had control groups and experimental groups. According to (Kothari & Gaurav, 2014) in an experimental hypothesis-testing research when a group is exposed to usual conditions, it is termed as (control group), but when the group is exposed to some special conditions, it is termed as (experimental group). In this illustration, (Group A) can be called control group while (Group B) can be called experimental group. The control group (Group A) was taught without using manipulative materials, while the experimental group (Group B) was taught using manipulative materials following the preferred method by the researcher. The materials were provided by the researcher to the experimental group.

Therefore, both Group A and Group B were taught at the same length of time. The manipulative materials were locally available while others were made by the researcher. Therefore, the teachers used the manipulative materials in teaching language activity. A Pre-test and Post –test were administered to children to identify the difference in performance. A Pre-test was given to both

control group and experimental groups at the beginning of the testing while a Post –test was given to both groups after the duration of testing.

3.2 Target Population

Borg (1996) defines target population as all members of a real or hypothetical set of subjects /events or people to whom a researcher wishes to generalize the results of the study. Summer (1986) define target population as the entire group of people in a category. In this study, the researcher targeted all pre-schools children, teachers and head teachers. The respondents were drawn from both public and private schools in Riruta zone, Dagoretti Constituency. The targeted population gave the required information that was used to generalize the conclusion.

3.3 Sample Size and Sampling

According to Mugenda and Mugenda (2003), a sample size of 30% is considered adequate for experimental design. The pre-schools were identified through random sampling method whereby the names of the public and private schools were written on pieces of papers which were then folded and placed in a container. Twenty pieces of papers were randomly picked and the pre-schools whose names appeared in the papers constituted part of the sample. Therefore 30% of the researchers' population size was divided into two groups. These were controlled groups and experimental groups. The control group consisted of ten schools and experimental group consisted of ten schools. The target population also included twenty teachers and twenty head teachers, from those sampled schools, who were also involved in helping to collect the data.

3.4 Research Instruments

In this research design, Quasi-experiment design was used to collect data. A quasi-experimental is an empirical study used to estimate the causal impact of an intervention without random assignment. The first part of creating a quasi-experimental design is to identify the variables. Quasi experimental design are also effective because they use the Pre-post testing, this are tests done before any data is collected to see if there were any persons confounds or if any participants have certain tendencies. Then the actual experiment is done with Post- test results recorded.

This data can be compared as part of the study or the Pre-test data can be included in an explanation for the actual experimental data. In this case three instruments were used to collect data. These were Pre-test and Post-test in language activities for pre-school children. The tests were given before and after the experiment, to both control group and experimental group. Observational schedule was used during observation time while recording how often and when manipulative materials were being used. The observational schedule consists of language activities such as Reading Readiness skills, writing skills, oral skills. The activities for every skill were also shown such as picture reading, singing, reciting poems, colouring, storytelling and many others. The last instrument used was questionnaire for both head teachers and pre-school teachers. This assisted in data collection.

3.4.1 Validity of the Research Instruments

According to Mugenda and Mugenda (1999) a research is said to be valid if it measures what is supposed to be measured. The Pre-test of children in experimental group was done and recorded. Pre-school children in the experimental group used manipulative materials in learning language activity. They did various language activities in reading readiness skills, writing skills and oral skills that were tested. The results for both Pre-test and Post-test were analysed, recorded and conclusion made.

3.4.2 Reliability of the Instruments

According to Mugenda and Mugenda (1999) defined reliability as a measure of the degree to which a research instrument yields consistent results or data after repeated trials. An instrument is reliable when it can measure a variable accurately and obtain the same results over a period of time. Mugenda (2008) also noted that Pre-testing is essential. The researcher conducted a pilot test of the instruments before using them in the study. The pilot was done in two pre-schools centres that were not in the study sample but with similar characteristics to those selected in the study sample. Therefore, by Pre-testing the instruments enabled the researcher to estimate the time needed to administer the instrument.

3.4.3 Pre-test and Post- Test

These instruments were used on children to determine the difference in performance. A Pre-test was done before engaging the children into an experiment and their results were analyzed. A Post- test was given to them after experimenting the use of manipulative materials in learning language. The Pre-test and the Post-test were administered as shown in appendix III and IV. The

questions tested all the language skills and these are oral skills, reading readiness skills and writing skills.

3.4.4 Observation Schedule

The observation schedule helped the researcher to find out how often teachers used manipulative materials in classroom when teaching language activity. the researcher observed the teaching process during language activity lesson. The observation schedule presented language skills such as oral skills, reading readiness skills, writing skills. It had activities for language such as storytelling, picture reading, colouring, Materials for language activities were also presented such as plastine, picture books, flash cards, charts.

3.4.5 Teachers Questionnaire

A questionnaire was carried out by the researcher to find out the teachers' attitude towards manipulative materials when teaching pre-schools in Riruta Zone. The questionnaires was divided into two section that is section A and section B, section A consisted of questions about the biography of the teacher, while section B consisted of questions about the use of manipulative materials and his/her attitude towards them. This gave a lot of information about the attitudes of the teachers.

3.4.6 Head teachers Questionnaires

The questionnaire for the head teachers was also divided into two sections. Section A had questions concerning the head teachers' biography while section B had questions about classroom performance of the teachers and how they oftenly use manipulative materials.

3.5 Data Collection Procedure

Before the commencement of the study, the researcher visited the selected Pre-school centres. This was meant to introduce herself and seeking for permission from the heads of schools, to carry out her study. By doing this, the researcher created a good relationship with the school heads, teachers and children. The researcher organized a two days' workshop whereby all the teachers from the sampled schools were invited. They were trained on how to teach language activity using manipulative materials. This was done to enable them familiarize with the researcher expectation during the research period.

A two weeks scheme of work was prepared with a theme of the week, sub-topic, activities to be taught and materials used for each and every topic and objectives of the lesson. A lesson plan for two days was derived from the scheme of work. It showed clearly the time for the lesson, objectives of the lesson, activities and conclusion. The researcher used the scheme of work and the lesson plan to train the teachers on how to use manipulative materials. They were also trained on how to make locally available materials. The researcher then issued the questionnaires to the head teachers and others to the teachers. The questionnaires were to be filled by both parties and be collected after two weeks. The questionnaires constituted of their qualification, age, experience, use of manipulative materials in classroom and who provides the materials. In the case of experimental group using manipulative materials, the researcher provided most of the materials while teachers and head teachers provided the rest. This enabled the teachers to have enough materials to work with. Various materials were used for different activities.

The researcher used observation schedule checklist to observe the use of manipulative materials in teaching language activity and how they influenced children's participation in language activity. This showed how children manipulate and interact with resources in classroom. The researcher instructed the teachers to administer the pre-test before engaging children into an experiment and their results were analysed. A post-test was given to them after experimenting the use of manipulative materials in learning language.

3.6 Data Analysis

Data analysis is the process of evaluating data using analytical and logical reasoning to examine each component of the data provided. Data is gathered, reviewed and then analyzed to form some sort of findings or conclusion. The researcher used the ANOVA method to analyze data. This method was chosen because it was convenient procedure that is used to test the degree to which two or more groups vary or differ in an experiment. In this case the control group and experimental group were to be analyzed. The control group consisted of ten children while the experimental group contained ten children.

3.7 Ethical Concerns

The research strictly adhered to the professional guidelines. The data collected was confidential and only meant for the purpose to this research study. To hid the names of the respondents identity and those of pre-schoolers, the researcher applied code letters instead of names. To identify the names of the school, the researcher used capital letters thus avoiding real names of the schools. The researcher ensured that the information collected did not encroach on private life of respondents.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.0 Introduction

This chapter presented a discussion and presentation of the section answers the research questions and objectives. It is accompanied with a detailed discussion and inference from the literature review. The objectives of the study was to determine the effect of manipulative materials on different language activity skills such as oral skills, reading readiness skills and writing skills. In addition the study also looked at effects of teachers' knowledge on manipulative instructional materials and teachers attitude towards use of manipulative materials.

4.1 Oral Activity Skills

Table 4.1: Performance in Oral Activity Skills

Activities	No of pupils	No of pupils able to perform	No of pupils not able to perform	Mean score obtained	Maximum mean score
Sounding letters in sequence	150	143	7	92%	100
Singing	150	127	23	85%	100
Reciting poems	150	103	47	69%	100
Story telling	150	96	54	64%	100
Spelling of simple words	150	49	101	33%	100

Table 4.1 above showed the performance of language in oral activity skills after some tests were given to 150 pupils in various activity areas. In sounding the letters of alphabets, a-z, 143 children (92%) were able to perform while 22 children were not able. It was noted that some children who were not able to sound were confusing sounds like “c “and “k” “ a” and “u”, “w” and “y” that sounds almost the same. The problems above were brought about by lack of exposure to manipulating materials such as flash cards, cut outs, charts and lack of practice in naming the sounds. Children are used to rote learning of alphabets whereby they just sing the letters sounds and the teacher doesn’t give individual attention.

Therefore, the teacher should give a chance to each and every child to sound letters of alphabets “a-z” so that she/ he may be able to identify the one with a problem. She can also group them into small number and give them a chance to compete. The teacher also needs to teach sounds one by one every day. From the table above children were also tested in singing activity and it was noted that only 127 children (85%) who were able to perform the activity while 23 children were not able.

It was identified that children who were not able to sing it was because of fear, others were shy, others had poor mastery of the sounds, wrong pronunciation of certain words in the song, lack of confidence and poor coordination of the rhythm and song. The above problems are caused by lack of exposure to individual performance, most of them were used to singing in groups and not as individual. Another cause could be teachers who doesn’t give time for singing activity, lack of encouragement, motivation background of the children.

Remedy of the above problems is to encourage children to perform individually, do singing activities most of the time, train them on coordination of rhythm and the song, encourage them to participate in storytelling, recruiting, poems, news telling, role playing to remove fear and build confidence in them. They should also be exposed to music festivals and drama festivals in zone level, county level ad up to National level so that they can also be able to observe how others perform in different activities either individually or in a group and also with the use of musical instrument. When children are exposed to various performances, they are able to build interest, self-confidence, self-image thus promoting oral skills.

The teacher should also identify the talents of the children as they have got different talents, there are those who are talented in singing at that age and can become great men and women in future. Therefore, the teacher should assist in developing and nurturing those talents by encouraging the children, giving them individual attention, and also motivating them. The teacher should also make sure that every child participates in music and movement as a learning activity area that is supposed to be scheduled in preschool time table from the syllabus. She/ he should teach all the activities in music and movement e.g. Rhythm, coordination, singing, playing of musical instruments, sounding and it should be enjoyable so that children may be able to learn something out of it and concentrate. Therefore, all this will enhance oral activities such as spelling of words, speaking fluently, pronunciation of sounds and words, sounding.

Children were also tested on reciting simple poems and only 103 children (69%) who were able to recite poems fluently while 47 were not able. It was noted that the children lacked exposure to reciting poems as one of the oral activities in

pre-school. They were not taught many different poems as it is required. It was noted that some children were not confident enough to recite poems on their own, others had poor mastery of the words, poor memory that they couldn't remember how sentences follow each other; or even starting a sentence.

The above problems can be solved by encouraging children to recite poems as much as possible, and also teach different poems with different meaning and make them interesting with actions when reciting. The teacher should also expose children to music festivals either in Zonal, county or National level so that children may gain confidence. The teacher can also organize children to recite poems to an audience for example to other classes, to the whole school during parade time, prize giving day or to parents meeting.

This will enable them gain confidence, have memory because of excitement and good preparation, it will also enhance good mastery of the words and speaking fluently. The teacher is also advised to given attention to individuals so as to correct mistakes where necessary and deal with individual problems. Parents are also advised to encourage their children to be reciting poems at home, motivate them where necessary and also create competition among others. The teacher should make sure that there is a poem for all the themes he/ she would like to teach according to the time table for example when teaching a topic on 'wild animals" he /she should start with a poem.

Elephant Elephant

Go to the bus

No! No! No!

Why! Why! Why!

Because am too big

Giraffe Giraffe

Go to the bus

No! No! No!

Why! Why! Why!

Because I'm too tall

This will enable the children to understand very easily when teaching the above concept, they will have an idea of how elephants and giraffe looks like before they are exposed to pictures and charts/ flash cards, to naming of wild animals. The above poems may also assist the children to know the first sounds of the words as they are used to help the children recognize the sounds easily for example "e" for elephant.

"e" for egg.

The children were also tested on storytelling as one of the major activity that is used to enhance language to young children. When children are given opportunities to give stories and to be told stories thus enhances good memory as children will try to remember the story to give or the story they were given yesterday it also enhances speaking fluently because when they are telling stories, they are able to connect the words and speak them out, the teacher is able to correct mistakes they are making thus helping them to speak fluently. Telling stories also enhances confidence since when children are telling stories to an audience and keep on doing it every now and then thus enables them to stop fearing and thus removes shyness.

Telling stories also enables the children to speak audibly which is a major problem among the pre-scholars, it also enhances self-expression whereby children are able to express themselves freely. It was noted that only 96 children who were able to tell stories without any problem while 54 children were not able to do it. This is because they were not given opportunities to tell stories which is an activity that is supposed to be done every day. The 54 children lacked confidence they were very shy, they could not speak out the words properly they were not fluent that is repeating themselves without proceeding to the next sentences. Others were lacking enough words to make up a story for example.

“once upon a time, there was an elephant and a dog, that is the end of my story”
Others didn’t know how to start a story or even to end they were starting from the middle and doesn’t end the story for example
“A dog and a cat, a dog ate a cat a cat ate an elephant”.

Other children had poor pronunciation of the words and the sounds, making it impossible to understand the story. There were five children who refused to completely tell a story. It’s either they didn’t know what to say, or they were very shy. There were two boys who were very good had confidence of standing to tell a story but they didn’t utter any word, they just kept quiet.

The remedial for the above challenges can be rectified when they are given enough exposure to storytelling, be given individual attention and again they need to be encouraged and motivated. The teacher should tell stories first before giving a chance to the children so as to enhance creativity. The teacher should also expose them to story books whereby they can be reading together and give

them a chance to read on their own. The teacher should also make story telling a very interesting moment whereby she the can narrate stories using actions and some costumes. By doing so, it enhances concentration creates more creativity increases their memory and improves their attention.

Parents are also supposed to create time for story telling at home so that they can narrate stories to their children or read stories for them. The best time could be after supper or before bed time. They need also to engage children to a discussion concerning the story. They can also ask questions just to test if they understand. Parents should also give them chances to tell stories of their choice whereby they are encouraged to do so as many times as possible. They should also provide story books and create a study room whereby children will be busy reading, during their free time. This is a very good exercise and when done properly it enhances creativity, they acquire more knowledge, enhances their vocabularies enhances memory. Therefore, storytelling is a major activity among the pre-scholars and should be encouraged to all preschools. It should be done every day according to the timetable. The school can also engage a resource person who can be of great help to the children.

The final test on oral activities was to find out if children were able to spell simple words correctly. The test was done to children of age 4-6 years old who are supposed to have known how to spell the words correctly. At their age, they are normally exposed to two letter words for example.

“ba” “fa” “da” “ga” “ta”

“it” “no” “if” “of” “is”

Three letter words such as:

“bag” “cat” “rat” “mat”

“tap” “man” “pat” “net”

“zip” “pin” “tin” “bin”

It was noted that the majority of the children were not able to spell the words correctly, out of 150 children, only 49 who were able to spell words correctly while 10 children were not able. Spelling of words was a major problem among the pre-scholars meaning that they were not given practice for the activity.

Most of the teachers ignored this activity and went direct into reading activity. Some children were good in reading but not spelling. Spelling of words can be enhanced by doing dictation every day, doing fishing game, doing puzzle activity, creating competition of writing words on the blackboard or books and finding out who will spell correctly, spelling competition, picking sounds to form words, use of flash cards, use of plasticine whereby children are told to model sounds to form words, matching of words and words or words and pictures. The above activities can either be done in class or outside the classroom. The teacher should make the activities enjoyable so that children may be able to acquire the concept more easily.

Teachers are also supposed to help children practice spelling of words from known to unknown, from simple words to more complex words, from last topics words to new topics. By doing so children will carry the previous knowledge to the new concept taught for example from two letter words to three letter words, such as:

ba	bag	ca	cat	ma	mat
da	dad	fa	fat	ha	hat

Some of the materials required to enhance spelling on pre-school children are:
Flash cards
Charts
Puzzles
Picture books
Cut outs
Story books

In conclusion, it is the responsibility of the teacher to work out spelling activities among the pre-school children so that by the time they are through with pre-school education they will have known how to spell simple words.

4.2 Reading Readiness Skills

Table 4.2: Performance in Reading Readiness skills

Activities	**No of pupils**	**No of pupils able to perform**	**No of pupils not able to perform**	**Mean score obtained**	**Maximum mean score**
Picture reading	150	145	5	95%	100
Recognition of colours	150	120	30	80%	100
Matching sounds	150	140	10	93%	100
Recognition of shapes	150	120	30	80%	100
Matching objects	150	140	10	93%	100

Table 4.2 above showed the performance of language in reading readiness skills, after some tests were given to 150 pupils in various activity areas. In picture reading 145 pupils at 96% were able to recognize the pictures while only 5 pupils who were not able to recognize. It was noted that those pupils who were not able to read the pictures it was due to confusion of names for example some called a “cup” a “jug” a “cat” a “dog”. The problem above was brought about by lack of exposure to picture reading books and lack of proper follow up by the teacher. Therefore, the teacher should make sure that he/ she has given enough activities on picture reading and follow up whether they are doing it well or not.

Children were also tested on recognition of colours whereby it was noted that most of the children were very poor on that. Those who were able to recognize the colours were only 120 pupils and were at 80% which was very low compared to picture reading. 30 pupils who were at 20% were not able to recognize the colours. It was noted that those who were not able t recognize the colours it was due to confusion of colours lack of exposure to different colours. Therefore, teachers are supposed to train colours thoroughly to the prescholars so that they can be able to recognize them at an early age. They should also be given a variety of different objects with different colours so that they can play with them and as they do that they will be in a position to grasp the ideas. The teacher should teach primary colours first that is red, blue green yellow while others follow later. Pupils can also be allowed to play games of different colours for example fishing game, sing songs of colours for example:

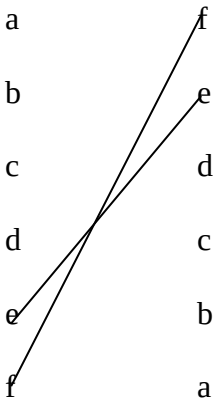
I am colour red x 2

I have come to dance

Dance in the middle

And then I run away

Children were also tested on matching of sounds which is a very common activity among preschool children for example



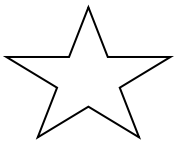
It was noted that most of the pupils were able to perform the activity, they were 140 pupils who were at 93% and only 10 pupils who were not able to perform the activity. Pupils with this problem it was due to minor problem whereby some were not able to differentiate “d” and “b”, “a” and “d” etc , others because of lack of proper practice in matching others because of poor fine muscles. They were not able to hold a pencil properly to a point of drawing lines to the respective sound.

Teachers should train the above activity thoroughly and should help those children with minor problem. Children who have problems of holding pencil should do a lot of modelling to strengthen their muscles, scribbling, drawing and colouring. They were also tested on recognition of shapes and it was noted that most of them were not able to recognize shapes that is circle, rectangle, square, triangle star shapes. Pupils who were able to recognize were 120 pupils who were at 80% while 30 pupils were not able to recognize and they were at

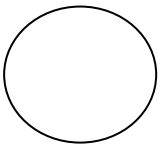
20%. This was because of lack of exposure to various materials with different shapes, lack of follow up by the teachers lack of practice on shapes etc. therefore the teachers who are handling preschool children should come up with different activities to teach shapes. They should have a variety of objects with different shapes. The classroom should have charts on the well with shapes and flash cards and cut outs of different shapes. The following are example of shapes to be taught in a pre-school classroom.

Rectangle

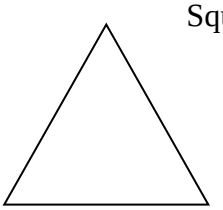
Square



Star



Circle



Triangle

The children were also tested on matching objects of different sizes, colours, shapes and it was noted that 140 pupils who were at 93% were able to match objects while only 10 pupils who were at 6% were not able to match objects. This was due to lack of exposure a lot of practice, lack of playing with manipulative materials. Therefore, the teacher should allow children to play and manipulate learning materials which is a very good activity in enhancing reading readiness skills in children.

4.3 Writing Readiness Skills

Table 4.3: Performance in writing readiness skills

Activities	No of pupils	No of pupils able to perform	No of pupils not able to perform	Mean score obtained	Maximum mean score
Colouring	150	140	10	93%	100
Drawing	150	130	20	87%	100
Tracing	150	110	40	78%	100
Scribbling	150	150	-	100%	100
Pattern	150	135	15	90%	100

Table 4.3 above showed the performance of language in writing skills, after some test were given to 150 pupils in various activities for example colouring, drawing, tracing, scribbling, pattern writing which are the activities that enhances writing among the pre-school children. In colouring 140 children were able to do it very well within the range of the drawing and they were at 93% while only 10 children who were not able to do it well.

Children who were not able to colour within the range of the drawing it was because they had poor eye hand coordination, others had weak fine muscles in such that they were not able to handle colours well, others lacked exposure in colouring. Therefore, teachers ought to give more activities in colouring and train them to colour inside the drawing so that they can become perfect.

Children were also tested in drawing since it's a major activity for enhancing writing skills, and it was noted that some children were able to draw different objects very keenly while others were not able.

130 pupils who were at 87% were able to draw well while only 20 pupils who were not able to draw pictures that could be recognized. Therefore, teachers should provide enough materials for drawing i.e. pencils, plain papers or drawing books, crayons. They should be given a lot of practice in drawing so that they can become perfect. They were also tested in tracing of different objects, cut outs, shapes and it was noted that 110 pupils were able to do it very well and they were at 78% while only 40 pupils who were not able. This was because of lack of practice in tracing objects, lack of exposure, lack of follow up by the teacher and therefore teachers should give time for such an activity and make it fun for children to enjoy the activity.

Children were also tested on scribbling which is an activity that enhances writing to preschool children and it was noted that they did it very well. They passed at 100% which was very excellent. This showed that they did a lot of practice in scribbling and in fact it was fun to all and they really enjoyed doing the activity. Therefore, from the findings above it was recommended that for children to perform well in language lesson, they need to be allowed to manipulate materials very oftenly during language lessons so that they can improve on their reading, writing and oral skills. The above activities cannot be performed well if children will only do theory learning without materials. Teachers should use manipulative materials as much as possible, and should make the lesson enjoyable.

4.4 Questionnaire Return Rate

The study targeted both head teachers, preschool teachers and learners as respondents. All targeted teachers form twenty schools were able to fill and return their filled forms making the response rate good for analysis. Preschool children were also able to do the activities as they were asked to do, making the response for the learners' good for analysis. The head teachers also were able to return the forms having been completely filled.

4.5 Teachers Academic Qualification

This information was based on teacher's academic qualifications, teaching experience and how often they sued manipulative materials during language activity, lessons. The teacher demographic information is shown in Figure below.

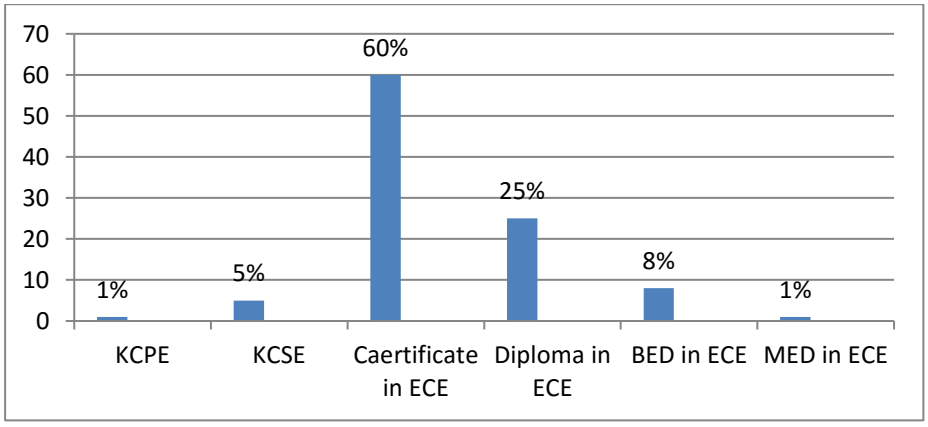


Figure 4.1: Sampled teachers' academic qualification

From the Figure 4.1 on teachers' qualification, majority of teachers had attained certificate level in early childhood education, thus was 60%, teachers who had diploma qualification in early childhood were 25% while teachers who had bachelor in education 8% masters in early education were 1%, KCSE qualification were 5% and the remaining had KCPE 1%

4.6 Experience of Teachers in Early Childhood Centre

The study sought to find out the teachers teaching experience in early childhood centre and the findings are illustrated in Figure 4.2.

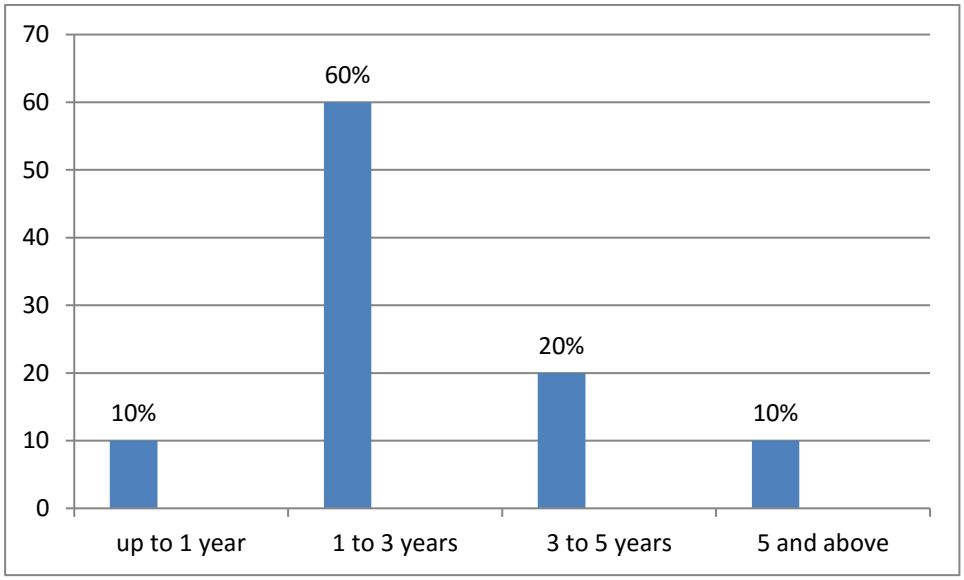


Figure 4.2: Experience of teachers teaching in early childhood centre

From the Figure 4.3, majority of the teachers had a teaching experience of 1-3 years in teaching early childhood centres, this was 60% while teachers with an experience of 3-5 were 20%, 5 years and above were 10%, 0-1 year were 10%.

4.7 The use of Manipulative Instructional Materials During Language Lessons

The research sought to find out how often the teacher used manipulative materials during language lessons and the findings is shown in Figure 4.3.

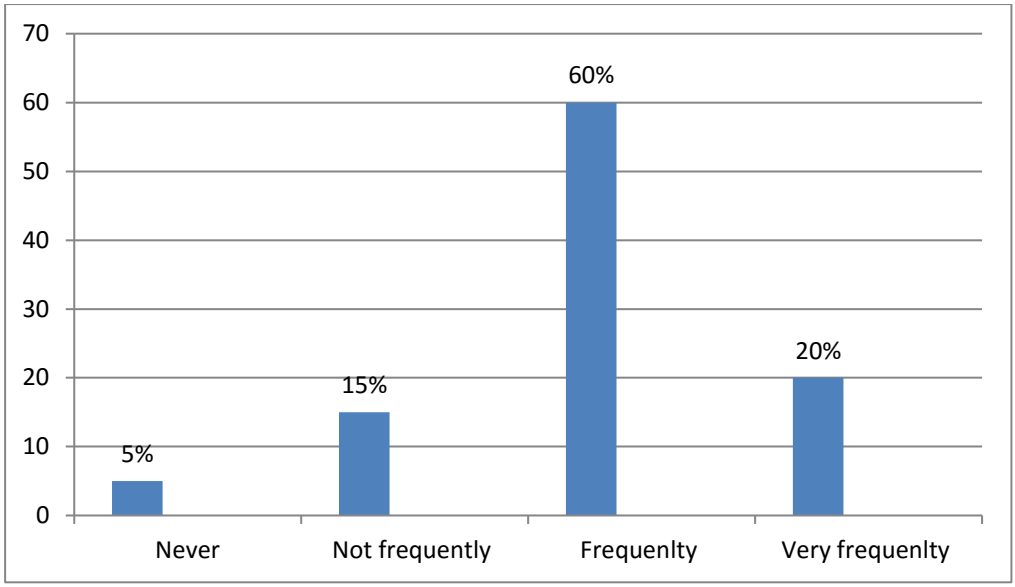


Figure 4.3: The use of manipulative materials during language lessons

From the Figure 4.3 majority of the teachers in the study frequently use manipulative materials during language lessons, this was at 60%, 20% indicated that they used the materials very frequently 15% recorded that they were not frequent while 5% recorded that they never used manipulative materials during language lessons. These reveals that the majority of teachers in early childhood centre use instructional materials in teaching language lessons.

4.8 Analysis of Variance (ANOVA)

Analysis of Variance (ANOVA) was run to test whether there was a statistical difference for the control group in performance between those pre-schoolers who used manipulative materials and those who did not use the materials in teaching language activities.

Table 4.4 Control group (Pre-test and Post-test results)

ANOVA		Sum of Squares	df	Mean Square	F	Sig.
Overall Exam score	Between Groups	2226.189	1	2226.189	36.134	0.000
	Within Groups	36349.000	590	61.608		
	Total	38575.189	591			
Oral activities score	Between Groups	196.421	1	196.421	35.455	0.000
	Within Groups	3268.599	590	5.540		
	Total	3465.020	591			
Reading readiness skills score	Between Groups	222.092	1	222.092	26.493	0.000
	Within Groups	4945.955	590	8.383		
	Total	5168.047	591			
Writing skills score	Between Groups	273.795	1	273.795	36.383	0.000
	Within Groups	4439.927	590	7.525		
	Total	4713.722	591			

The findings in table indicate that there is a strong significant relationship between the predictor variables for the control group: overall exam score, $F(1, 590) = 36.134$, $p<0.001$; oral activities, $F(1, 590) = 35.455$, $p<0.001$; reading readiness skills, $F(1, 590) = 26.493$, $p<0.001$ and writing skills, $F(1, 590) = 36.383$, $p<0.001$.

4.8.1 Experimental Group (Pre-test and Post-test Results)

Analysis of Variance (ANOVA) was run to test whether there was a statistical difference for the experimental group in performance between those pre-schoolers who used manipulative materials and those who did not use the materials in teaching language activities.

Table 4.5: Experiment Group (pre-test and Post-test results)

ANOVA						
		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Exam score	Between Groups	12955.560	1	12955.560	249.456	0.000
	Within Groups	31888.256	614	51.935		
	Total	44843.817	615			
Oral activities score	Between Groups	1142.457	1	1142.457	245.523	0.000
	Within Groups	2857.038	614	4.653		
	Total	3999.494	615			
Reading readiness skills score	Between Groups	1577.920	1	1577.920	247.574	0.000
	Within Groups	3913.350	614	6.374		
	Total	5491.271	615			
Writing skills score	Between Groups	1580.866	1	1580.866	248.716	0.000
	Within Groups	3902.645	614	6.356		
	Total	5483.512	615			

The findings in table indicate that there is a strong significant relationship between the predictor variables for the experimental group: overall exam score, $F(1, 614) = 249.456$, $p<0.001$; oral activities, $F(1, 614) = 245.523$, $p<0.001$; reading readiness skills, $F(1, 614) = 247.574$, $p<0.001$ and writing skills, $F(1, 614) = 248.716$, $p<0.001$.

4.8.2 Control Group and Experimental Group (Pre-test and Post-test results) for Oral Activities

From ANOVA in Table 4.4 and table 4.5 the results for oral activities can be summarized in table 4.6 as shown below.

Table 4.6: Control group and experimental group (Pre-test and Post-test results) for oral activities

Control Group	Experimental Group
F(1,590) = 35,455, p<0.001	F (1,614) = 245,523, P<0.001

From the table 4.6 above, it is noted that the results in Experimental group are better than the results in control group in oral activities. This means that use of manipulative materials in teaching oral skills enhances good performance control group scored less than the experimental group.

4.8.3: Control Group and Experimental Group (Pre-test and Post-test results) For Reading Readiness Gkills

From ANOVA in Table 4.4. and Table 4.5, the results for Reading Readiness skills can be summarized in Table 4.7 as shown below

Table 4.7: Control Group and Experimental Group (Pre-test and Post-test results) For Reading Readiness skills

Control Group	Experimental Group
F(1,590) = 26,493,p<0.001	F(1,614)=247,574, p<0.001

From Table 4.7 above, it is noted that the results for experimental group in Reading Readiness skills are better than in the results in control group. Control group scored less than the experimental group. Therefore, it is very important to use manipulative materials to teach Reading Readiness skills to pre-school children as high performance will be recorded.

4.8.4 Control Group and Experimental Group (Pre-test and Post-test results) in Writing Skills

From ANOVA is Table 4.4 and 4.5 the results for writing skills can be summarized in Table 4.8 as shown below.

Table 4.8: Control Group and Experimental Group (Pre-test and Post-test results) in Writing Skills

Control group	Experimental group
$F(1,590)=36.383, p<0.001$	$F(1,614)=248,716, P<0.001$

From table 4.8 above, it is noted that the results for experimental group in writing skills are better than the results in control group. Children who were in control group scored less than children who were in experimental group. Therefore, use of manipulative materials enhances good performance in writing skills.

4.8.5. Control Group and Experimental Group (Pre-test and Post-test) Overall Results

From ANOVA in Table 4.4. and Table 4.5, the overall results can be summarized in Table 4.9 as shown below.

Table 4.9: Control group and Experimental group (Pre-test and Post-test)

Control group	**Experimental group**
F(1,590) – 36.134,p<0.001	F(1,614)= 249.456, p<0.001

From the table 4.9 above, it is noted that the overall results for experimental group are better than the overall results for control group. Children who were in experimental group performed very well in all language activities that is oral skills, writing skills, Reading Readiness skills than those children who were in control group.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter consists of the summary of the findings, draws conclusion and make recommendations and suggestions for further research. The purpose of the study was to determine the effects of manipulative materials on children's performance in language activity in preschool.

5.2 Summary of the Study

The researcher sued a quasi- experimental design where the research structure included intensive and in-depth investigation on an issue at hand in a relatively small sample. Teachers and learners involved in the study were randomly selected from preschools selected. The researcher used simple random sampling technique with twenty teachers participating in the study, whereby each preschool had one teacher involved in the study. This study was conducted by the researcher using prepared questionnaires which respondents were preschool teachers. The researcher also sued the tests prepared for children in language activity whereby they were to answer all questions. The researcher visited the schools she intends to collect the data from and she presented the questionnaires to the teachers. The researcher sued observation schedule to analyze the availability of the materials and resources available for teaching language activity. The research findings are discussed below;

Majority of the teachers had attained certificate level in early childhood education and this was at 60%, teachers who had diploma qualification in early childhood education were at 25% while 8% of teachers had bachelor in education, 1% had masters in early childhood, 5% were those with KCSE qualification and 1% had KCPE academic qualification.

Most of the teachers had an experience of 1-3 years in teaching early childhood education who were at 60% while 20% were teachers with an experience of 3-5 years, 10% were teachers with an experience of 5 years and above and again 10% teachers with an experience of 0-1 years. Majority of the teachers from the study frequently use manipulative materials during language lessons and this was at 60% while 20% indicated teachers who used manipulative materials very frequently. 15% were teachers no frequently using materials and 5% of teachers never used materials at all.

Most of the teachers indicated that manipulative materials are very effective when teaching language lesson because children are able to grasp the concept very easily and that was 85%, 10% said that the manipulative materials are effective while 3% indicated that they were somehow effective and only 1% indicated that the materials were not effective at all. This confirms the study by Moyer (2001) that teachers believed that using manipulative materials was more enjoyable and therefore children should be given a chance to manipulate materials in learning.

The study established that the knowledge of the teacher about manipulative materials was very low which was evidenced by 11 (37%) of the sampled respondents.

This was brought up by the issue of lack of workshop organized by the policy makers and other stake holders. It was noted that teacher have never attended any workshop for the last five years in Riruta zone. Therefore, this has contributed towards teachers lacking morale and importance of using manipulative materials.

The study established that Riruta zone preschools did not have adequate manipulative materials. The headteachers of the schools did not provide resources or the materials to the teachers and the other hand teachers were very reluctant on improvising of materials that could be used in teaching language lessons. This was brought about by the issue of lack of teachers' motivation by the management, while the workload is more for most of the teachers. This leads to lack of morale of improving materials.

5.3 Conclusion

Based on the data, it was concluded that children's low performance in language activity was contributed by lack of adequate manipulative materials. Therefore, to record high performance in language activity, enough resources must be provided to children in preschools and teachers must be willing to sue them to enhance better performance. They should be made available and accessible so that children can be able to use them when they want or as directed by the teacher. The manipulative materials arouse children's curiosity and motivate them in learning. The preschool teachers and children should be encouraged to

collect the locally available materials and arrange them in the classroom in language corner to be use when necessary.

Lack of knowledge to most of the teachers also contributed to lack of effectiveness use of manipulative materials. This was evidenced by the fact that some teachers were not trained and therefore lack of knowledge deny teachers the skills to train learners on how to sue manipulative materials effectively thus recording poor performance on the hand teachers attitude towards use of manipulative materials showed that it affected a lot. Most of the teachers had low attitude towards using materials caused by lack of motivation by the management, high number of enrolment per class, lack of space to many schools, poor payments/ salary. The study concluded that availability and adequacy of manipulative materials assist a lot in improving preschool; participation as learners and are exposed to the real world of learning. This enable them to understand more easily, grasp a lot and the information is retained for long thus it can be remembered easily.

5.4 Recommendations

The study recommends that the government of Kenya should prioritize early childhood education in allocations of funds for development so as to provide necessary resources and facilities required to teach language activity. This will improve performance not only in language but also in other activity areas. The extension of quality assurance services to preschools will also assist to monitor and improve our schools and the performance.

Head teachers should also work in hard with preschool teachers to make sure that there are enough resources and facilities required in each and every class to enhance language performance. The management should also come up with ways and means of motivating teachers thus creating a morale in them for going an extra mile.

The policy makers should organize workshop very oftenly so that teachers can be educated on sue of manipulative materials and other topics. This enables the teachers to be refreshed and acquire more knowledge from teaching. The world that we are living in is growing very fast in technology and therefore our teachers requires more knowledge to handle our preschool children who might be ahead of the teachers in some areas depending on their background.

The study recommends that the few teachers who are not trained should and those with certificates improve their professional skills by going for diploma courses, in early childhood, BED in ECD up to the highest level if possible. This will enable them acquire more knowledge and skills and by doing so they will be able to impart learners on how to handle manipulative materials while teaching language and other activity areas.

Preschool teachers should also be sensitized on how to collect and organize locally available materials in classrooms, for children to access them easily, instructional materials should be arranged in an orderly manner for attraction and accessible to pre-scholars.

5.5 Suggestions for Further Research

Based on findings and the scope of this study, the researcher recommends further studies to be carried out in the following areas. The study should be carried out in other countries to investigate the influence of manipulative materials in on children's performance in language activity in preschools. A similar study should be done in all preschool activity areas since this study was done in language activity only. There was need for a further research on what other factors apart from manipulative materials could influence academic performance in language activity among the preschool children in Riruta zone.

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APPENDICES

Appendix I: Pre-School Teachers Questionnaires

You are kindly requested to read this questionnaire carefully and then complete it as honestly as possible.

The researcher would like to assure you that your response will strictly remain confidential and sued only for research purpose. Please tick the appropriate box

PART A

1. What is your gender?

   Male [ ] Female [ ]

2. Indicate your age?

   Below 20 years [ ]

   20 – 25 years [ ]

   25-30 years [ ]

   30-40 years [ ]

   40 years and above [ ]

3. What is your level of academic qualification?

   M.E.D [ ]

   Degree [ ]

   Diploma [ ]

   Certificate [ ]

4. Indicate whether

   Trained [ ]

   Untrained [ ]

   Inservice [ ]

   None of the above [ ]

5. Indicate your teaching experience

   0-1 year [ ]

   1-5 years [ ]

   5-10 years [ ]

   10-20 years [ ]

   20 years and above [ ]

PART B

1. Record some of the manipulative materials used in your pre-school for teaching language activity.

   ……

   ……

   ……

2. Where do you get manipulative materials for teaching language activity from?

   ……

   ……

   ……

   ……

3. Which text books do you use in teaching language activity?

   ……

   ……

   ……

   ……

4. How do you design your classroom?

   Rows [ ]

   Groups [ ]

   Round tables [ ]

   Others

   ……

   ……

   ……

5. Are the manipulative materials for language activity adequate or inadequate

   Yes [ ]

   No [ ]

6. List three challenges you face in teaching language activity

   ……

   ……

7. Have you ever attended any workshop for the last five years

   Yes [ ]

   No [ ]

8. If yes how did you benefit from it?

   ……

   ……

9. What recommendations would you suggest to the following

   Other teachers

   ……

   ……

Head teachers

……

……

Parents

……

……

……

Policy makers

……

……

……

APPENDIX II: QUESTIONNAIRE FOR HEAD TEACHERS

This questionnaire is designed to gather data about yourself and your school to be used in the study of impact of instructional materials on performance of language activity among pre-school children in Riruta zone. Hence do not write your name and your school name so that the questionnaire may remain confidential. Please indicate the correct option as correctly and honestly as possible by putting a tick (√) on one of the options. Kindly respond to all items.

PART A

1. Indicate your age in years

   Below 20 years [ ]

   20 – 30 years [ ]

   31-35 years [ ]

   36-40 years [ ]

   41 and above [ ]

2. What are your highest academic qualification?

   MED [ ]

   BED [ ]

   Diploma [ ]

   Certificate [ ]

   Trainee [ ]

Others specify

……

……

……

3. Indicate your professional experience as a headteacher

   1-5 years [ ]

   6-10 years [ ]

   11-15 years [ ]

   16 years and above [ ]

4. How long have you been a headteacher in this school

   …….years

5. What is the category of your school?

   Pre-school [ ]

   Pre-school & Primary [ ]

6. What is the total number of preschool children?

   0-30 [ ]

   31-50 [ ]

   51-100 [ ]

   100-150 [ ]

7. Which subjects are taught in your preschool classes?

   ……

   ……

8. How many teachers are in your preschool……

PART B

1. Who provides manipulative materials for teaching language activity.

   ……

2. How does language activity performed in pre-school children?

   Poorly [ ]

   Fairly [ ]

   Average [ ]

   Good [ ]

   Very good [ ]

   Excellent [ ]

3. What challenges do you face in teaching language activity?

   ……

4. Are there workshop for training teachers in this zone?

   Yes [ ]

   No [ ]

5. If yes how often?

   ……

   ……

6. What recommendations would you suggest to the following?

   Teachers

   Parents

   Other headteachers

   Policy makers

Thank you very much for your cooperation

APPENDIX III: PRE-TEST FOR PRESCHOOL CHILDREN IN CONTROL GROUP

Answer all questions

A- Writing Skills

1. Write sounds a-z

   ……

   ……

   ……

   ……

2. Model sounds a-z

   ……

   ……

   ……

   ……

3. Fill in the gaps

   a……..c d……..f…….hj…….

4. Trace sound c, k, m

5. Colour " a" for apple

6. Match the following sounds

a	f
b	e
c	d
d	c
e	b
f	a

B- Reading skills

1. Read the following words

   bag, cat, rat

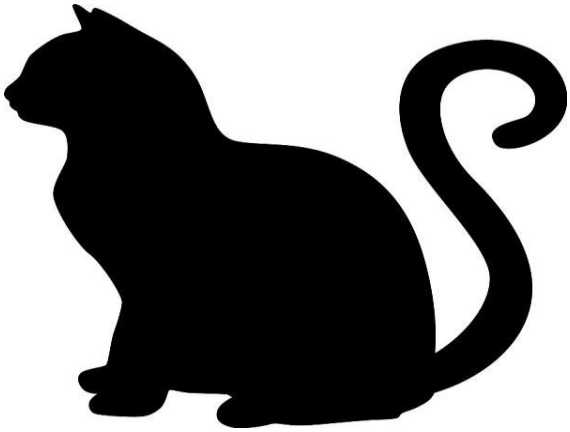
   ten, men, leg

2. Read the following pictures (oral)

_____

_____

_____



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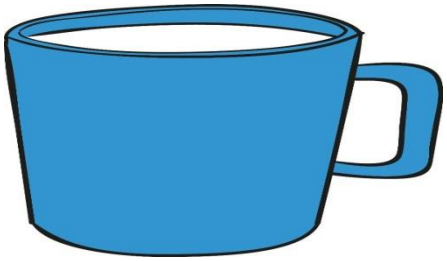

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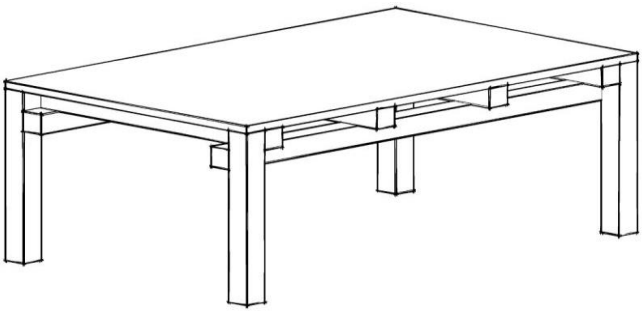


C- Oral Skills

1. Complete the following (oral):-

“a” for ……

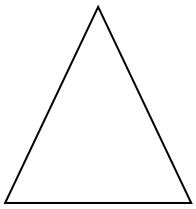
“b” for …….

“c “ for……..

“d” for……..

“e” for ……..

2. Recognition of shapes



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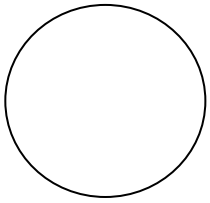

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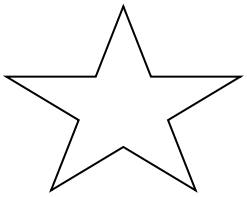

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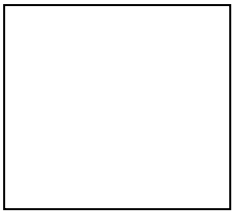

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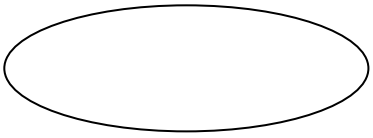

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APPENDIX IV: POST-TEST FOR PRESCHOOL CHILDREN IN CONTROL GROUP

Answer all questions

A- Writing Skills

6. Write sounds a-z

   ……

   ……

   ……

   ……

7. Model sounds a-z

   ……

   ……

   ……

   ……

8. Fill in the gaps

   a……..c d……..f…….hj…….

9. Trace sound c, k, m

10. Colour " a" for apple

6. Match the following sounds

a	f
b	e
c	d
d	c
e	b
f	a

B- Reading skills

3. Read the following words

   bag, cat, rat

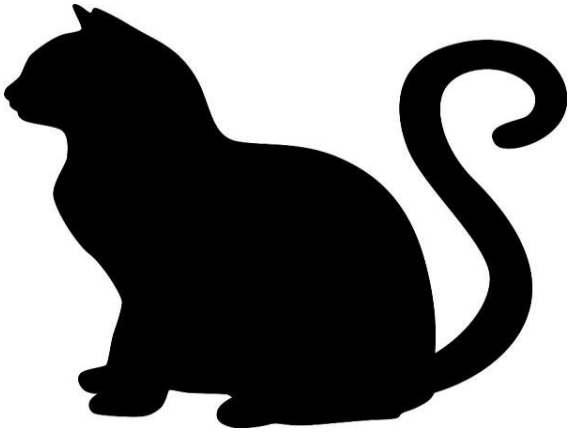
   ten, men, leg

4. Read the following pictures (oral)

_____

_____

_____



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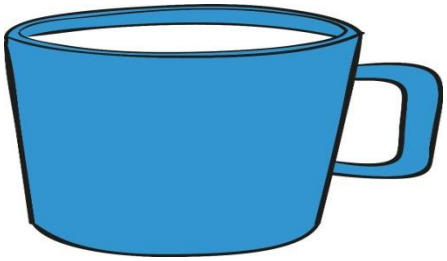

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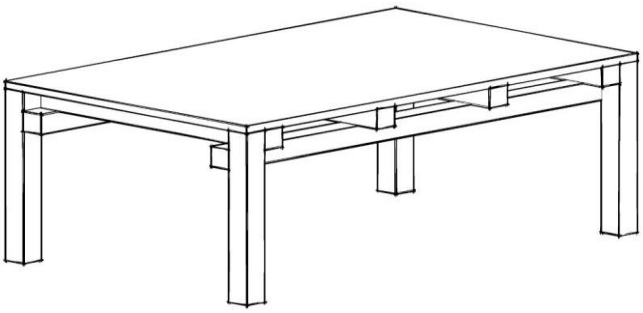


C- Oral Skills

3. Complete the following (oral):-

“a” for ……

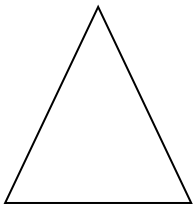
“b” for …….

“c “ for……..

“d” for……..

“e” for ……..

4. Recognition of shapes



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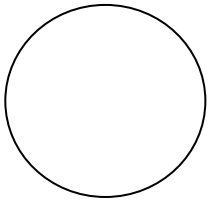

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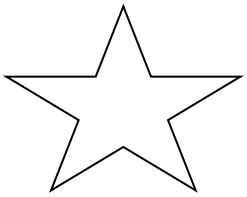

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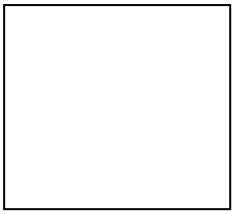

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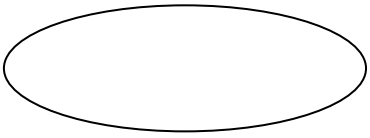

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APPENDIX V: PRE-TEST FOR PRESCHOOL CHILDREN IN EXPERIMENTAL GROUP

Answer all questions

A- Writing Skills

11. Write sounds a-z

……

……

……

……

12. Model sounds a-z

……

……

……

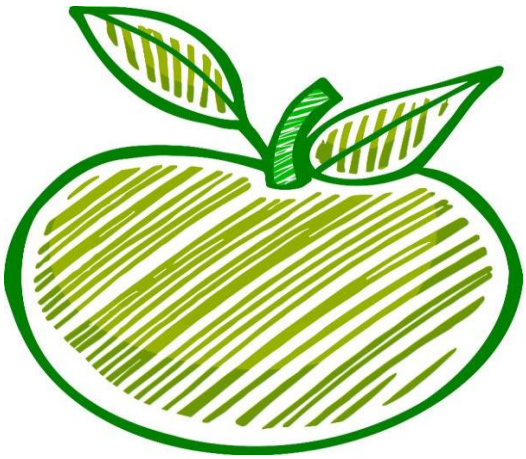
……

13. Fill in the gaps

a……..c d……..f…….hj…….

14. Trace sound c, k, m

15. Colour " a" for apple



6. Match the following sounds

a	f
b	e
c	d
d	c
e	b
f	a

B- Reading skills

5. Read the following words

   bag, cat, rat

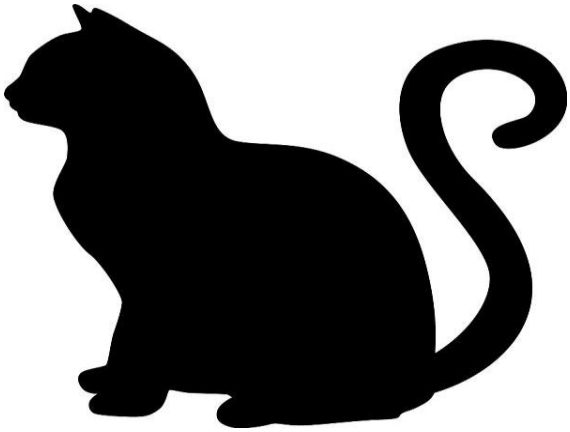
   ten, men, leg

6. Read the following pictures (oral)

_____

_____

_____



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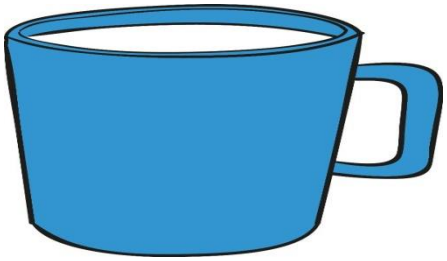

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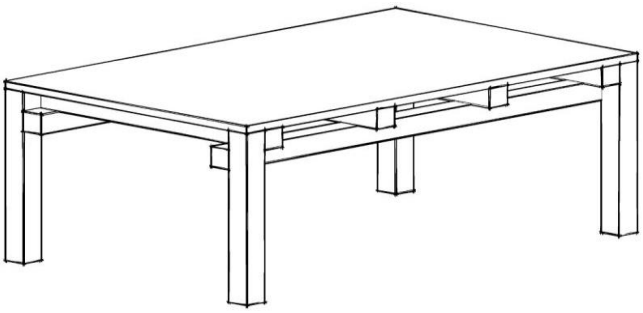


C- Oral Skills

5. Complete the following (oral):-

“a” for ……

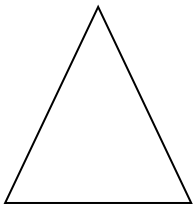
“b” for …….

“c “ for……..

“d” for……..

“e” for ……..

6. Recognition of shapes



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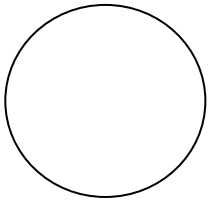

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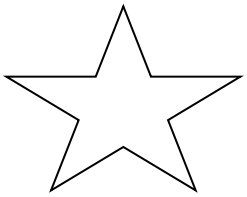

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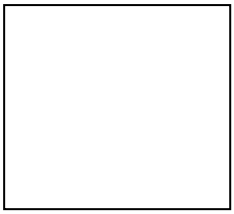

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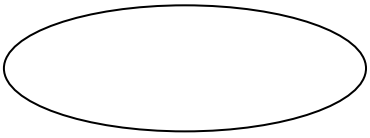

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APPENDIX VI: POST-TEST FOR PRESCHOOL CHILDREN IN EXPERIMENTAL GROUP

Answer all questions

A- Writing Skills

16. Write sounds a-z

……

……

……

……

17. Model sounds a-z

……

……

……

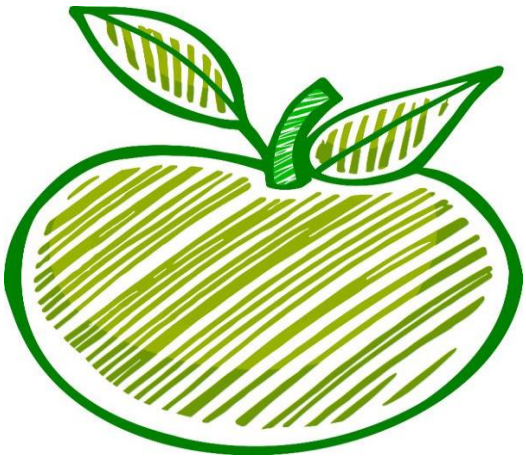
……

18. Fill in the gaps

a……..c d……..f…….hj…….

19. Trace sound c, k, m

20. Colour " a" for apple



6. Match the following sounds

a	f
b	e
c	d
d	c
e	b
f	a

B- Reading skills

7. Read the following words

   bag, cat, rat

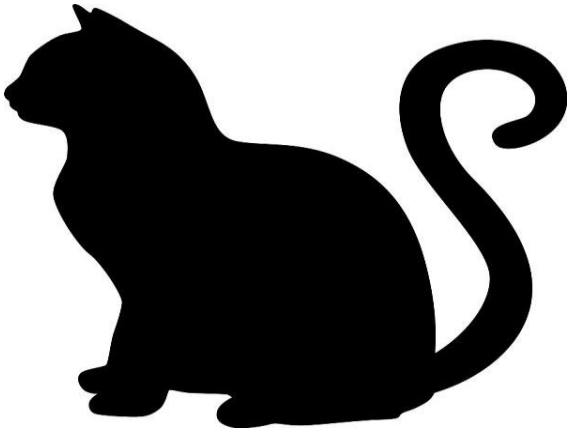
   ten, men, leg

8. Read the following pictures (oral)

_____

_____

_____



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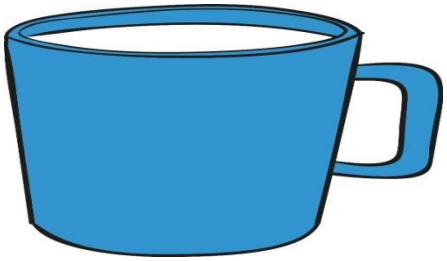

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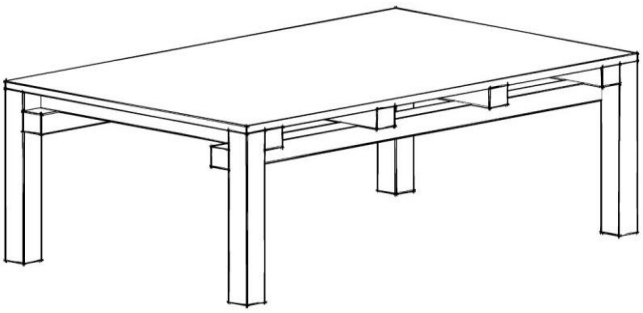


C- Oral Skills

7. Complete the following (oral):-

“a” for ……

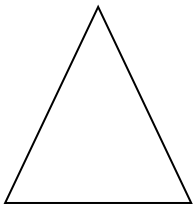
“b” for …….

“c “ for……..

“d” for……..

“e” for ……..

8. Recognition of shapes



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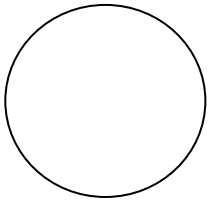

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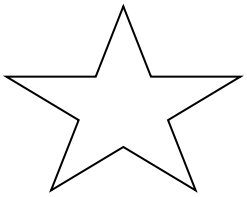

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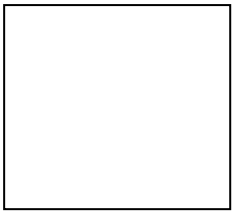

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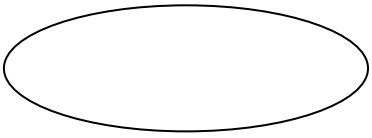

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APPENDIX VII: OBSERVATIONAL SCHEDULE

LANGUAGE SKILLS	**ACTIVITIES**	**MATERIALS**	**WEEK**	**DAY**	**NAME OF SCHOOL**	**NO. OF TIMES**
READING READINESS SKILLS	-Picture reading -Recognition of sounds	-Picture book -Flash cards -Charts -Cut outs -Magazines				
WRITING SKILLS	-Drawing - Colouring	-Pencils -Colours -Plain Papers -Drawing books -Picture books				

ORAL SKILLS	-Story telling -Listening -Reciting poems -Speaking fluently -Singing	-Story books -Picture Books -Flash cards -Realia				
WRITING SKILLS	-Tracing -Modelling	-Cut outs -Plasticine -Pencils -Books				

APPENDIX VIII: CONTROL GROUP (PRE-TEST RESULTS)

C1	CONTROL GROUP (PRE-TEST RESULTS)			
	(ORAL SKILLS READING READINESS S	READING READINESS SKILLS	WRITING SKILLS	T0TAL
	(OUT OF 30)	(OUT OF 35)	(OUT OF 35	MARKS
1	21.o	24.5	24.5	7.o
2	24.o	28.o	28.o	80
3	21.6	25.2	25.2	72
4	19.5	22.75	22.75	65
5	23.4	27.3	27.3	78
6	24.6	28.7	28.7	82
7	27.o	31.15	31.15	90
8	26.7	31.15	31.15	89
9	20.1	23.45	23.45	67
10	22.5	26.25	26.25	75
11	21.o	24.5	24.5	70
12	18.o	21.o	21.o	60
13	19.5	22.75	22.75	65
14	22.2	25.9	25.9	74
15	24.9	29.05	29.05	83
16	20.4	23.8	23.8	68
17	21.o	24.5	24.5	70
18	22.5	26.25	26.25	75
19	25.2	29.4	29.4	84
20	23.7	27.65	27.65	79
21	23.4	27.3	27.3	78
22	19.2	22.4	22.4	64
23	19.5	22.75	22.75	65
24	21.o	24.5	24.5	70
25	23.4	27.3	27.3	78
			PRE-TEST RESULTS	
C2				
1	19.5	22.75	22.75	65
2	21.O	24.5	24.5	70
3	21.9	25.55	25.55	73
4	22.5	26.25	26.25	75
5	20.4	23,8	23.8	68
6	20.1	23.45	23.45	67
7	24.6	28.7	28.7	82
8	23.4	27.3	27.3	78
9	25.5	29.75	29.75	85
10	21.O	24.5	24.5	70
11	21.O	24.5	24.5	70

12	18.O	21.O	24.O	60
13	19.8	23.1	23.1	66
14	21.9	25.55	25.55	73
15	24.6	28.7	28.7	82
16	27.O	31.5	31.5	90
17	26.4	30.8	30.8	88
18	22.8	26.6	26.6	76
19	22.2	25.9	25.9	74
20	20.4	23.8	23.8	68
21	19.5	22.75	22.75	65
22	22.8	26.6	26.6	76
23	23.1	26.95	26.95	77
24	25.5	29.75	29.75	85
25	22.5	26.25	26.25	75
26	24.O	28.O	28.O	80
27	25.8	30.1	30.1	86
28	25.5	29.75	29.75	85
29	19.2	22.4	22.4	64
30	20.4	23.8	23.8	68
			PRE-TEST RESULTS	
C3				
1	27.O	31.5	31.5	90
2	24.O	28.O	28.O	80
3	21.O	24.5	24.5	70
4	20.4	23.8	23.8	68
5	22.5	26.25	26.25	75
6	24.O	28.O	28.O	80
7	25.5	29.75	29.75	85
8	20.7	24.15	24.15	69
9	21.6	25.2	25.2	72
10	22.2	25.9	25.9	74
11	22.5	26.25	26.25	75
12	19.2	22.75	22.75	65
13	23.7	27.65	27.65	79
14	24.6	28.7	28.7	82
15	22.2	25.9	25.9	74
16	20.7	24.15	24.15	69
17	27.O	31.5	31.5	90
18	25.2	29.4	29.4	84
19	22.8	26.6	26.6	76
20	23.4	27.3	27.3	78
21	20.4	23.8	23.8	68
22	21.O	24.5	24.5	70
23	22.5	26.25	26.25	75

24	24.O	28.O	28.O	80
25	24.O	28.O	28.O	80
26	22.8	26.6	26.6	76
27	18.O	21.O	21.O	60
28	21.O	24.5	24.5	70
			PRE-TEST RESULTS	
C4				
1	19.5	22.75	22.75	65
2	20.4	23.8	23.8	68
3	21.O	24.5	24.5	70
4	21.6	25.2	25.2	72
5	24.O	28.O	28.O	80
6	21.9	25.55	25.55	73
7	18.O	21.O	21.O	60
8	18.6	21.7	21.7	62
9	21.O	24.5	24.5	70
10	21.6	25.2	25.2	72
11	24.O	28.O	28.O	80
12	23.4	27.3	27.3	78
13	22.5	26.25	26.25	75
14	23.7	27.65	27.65	79
15	19.2	22.4	22.4	64
16	19.5	22.75	22.75	65
17	22.2	25.9	25.9	74
18	22.8	26.6	26.6	76
19	19.5	22.75	22.75	65
20	25.5	29.75	29.75	85
21	22.8	26.6	26.6	76
22	24.6	28.7	28.7	82
23	21.9	25.55	25.55	73
24	19.5	22.75	22.75	65
25	21.O	24.5	24.5	70
26	22.5	26.25	26.25	75
27	19.5	22.75	22.75	65
28	16.5	19.25	19.25	55
29	23.1	26.95	26.95	77
30	23.4	27.3	27.3	78
31	19.8	23.1	23.1	66
32	16.8	19.6	19.6	56
33	21.O	24.5	24.5	70
			PRE-TEST RESULTS	
C5				
1	26.7	31.15	31.15	89

2	27.O	31.15	31.15	90
3	27.6	32.2	32.2	92
4	23.4	27.3	27.3	78
5	24.O	28.O	28.O	80
6	26.7	31.15	31.15	89
7	22.5	26.25	26.25	75
8	22.2	25.9	25.9	74
9	20.4	23.8	23.8	68
10	26.4	30.8	30.8	88
11	27.O	31.5	31.5	90
12	24.6	28.7	28.7	82
13	24.O	28.O	28.O	80
14	25.5	29.75	29.75	85
15	22.5	26.25	26.25	75
16	20.4	23.8	23.8	68
17	21.O	24.5	24.5	70
18	20.4	23.8	23.8	68
19	23.4	27.3	27.3	78
20	24.O	28.O	28.O	80
21	24.6	28.7	28.7	82
22	22.5	26.25	26.25	75
23	25.5	29.75	29.75	85
24	20.4	23.8	23.8	68
25	20.4	23.8	23.8	68
26	23.4	27.3	27.3	78
			PRE-TEST RESULTS	
C6				
1	21.O	24.5	24.5	70
2	21.6	25.2	25.2	72
3	22.5	26.25	26.25	75
4	20.4	23.8	23.8	68
5	20.7	24.15	24.15	69
6	24.O	28.O	28.O	80
7	22.8	26.6	26.6	76
8	22.2	25.9	25.9	74
9	24.6	28.7	28.7	82
10	19.2	22.4	22.4	64
11	22.8	26.6	26.6	76
12	25.8	30.1	30.1	86
13	21.O	24.5	24.5	70
14	21.6	25.2	25.2	72
15	26.4	30.8	30.8	88
16	23.4	27.3	27.3	78
17	22.8	26.6	26.6	76

18	20.4	23.8	23.8	68
19	21.O	24.5	24.5	70
20	22.5	26.25	26.25	75
21	24.O	28.O	28.O	80
22	24.6	28.7	28.7	82
23	25.8	30.1	30.1	86
24	23.4	27.3	27.3	78
25	21.O	24.5	24.5	70
26	21.O	24.5	24.5	70
27	18.O	21.O	21.O	60
28	21.6	25.2	25.2	72
29	25.5	29.75	29.75	85
30	23.4	27.3	27.3	78
31	21.6	25.2	25.2	72
			PRE-TEST RESULTS	
C7				
1	27.O	31.5	31.5	90
2	27.O	31.5	31.5	90
3	28.5	33.25	33.25	95
4	25.5	29.75	29.75	85
5	24.O	28.O	28.O	80
6	26.4	30.8	30.8	88
7	23.4	27.3	27.3	78
8	22.8	26.6	26.6	76
9	24.O	28.O	28.O	80
10	24.6	28.7	28.7	82
11	22.2	25.9	25.9	74
12	23.4	27.3	27.3	78
13	27.O	31.5	31.5	90
14	25.5	29.75	29.75	85
15	24.O	28.O	28.O	80
16	21.O	24.5	24.5	70
17	21.6	25.2	25.2	72
18	20.4	23.8	23.8	68
19	23.4	27.3	27.3	78
20	24.O	28.O	28.O	80
21	24.O	28.O	28.O	80
22	25.5	29.75	29.75	85
			PRE-TEST RESULTS	
C8				
1	18.O	21.O	21.O	60
2	21.O	24.5	24.5	70
3	24.O	28.O	28.O	80

4	21.6	25.2	25.2	72
5	18.6	21.7	21.7	62
6	16.5	19.25	19.25	55
7	19.5	22.75	22.75	65
8	21.O	24.5	24.5	70
9	22.5	26.25	26.25	75
10	23.4	37.3	27.3	78
11	24.O	28.O	28.O	80
12	19.2	22.4	22.4	64
13	19.6	23.1	23.1	66
14	17.4	20.3	20.3	58
15	21.O	24.5	24.5	70
16	21.6	25.2	25.2	72
17	19.6	23.1	23.1	66
18	23.4	37.3	27.3	78
19	24.6	28.7	28.7	82
20	17.4	20.3	20.3	58
21	19.2	22.4	22.4	64
22	22.8	26.6	26.6	76
23	23.4	37.3	27.3	78
24	22.5	26.25	26.25	75
25	19.5	22.75	22.75	65
26	21.O	24.5	24.5	70
27	20.4	23.8	23.8	68
28	23.4	37.3	27.3	78
29	21.6	25.2	25.2	72
30	21.O	24.5	24.5	70
31	21.O	24.5	24.5	70
32	18.6	21.7	21.7	62
33	19.6	23.1	23.1	66
34	22.8	26.6	26.6	76
35	24.3	28.35	28.35	81
36	17.7	20.65	20.65	59
37	18.9	20.05	20.05	63
38	19.5	22.75	22.75	65
39	22.8	26.6	26.6	76
40	22.5	26.25	26.25	75
			PRE-TEST RESULTS	
C9				
1	21.O	24.5	24.5	70
2	22.5	26.25	26.25	75
3	22.5	26.25	26.25	75
4	23.4	27.3	27.3	78
5	24.O	28.O	28.O	80

6	20.4	23.8	23.8	68
7	19.8	23.1	23.1	66
8	21.O	24.5	24.5	70
9	21.O	24.5	24.5	70
10	22.5	26.25	26.25	75
11	19.5	2275	22.75	65
12	24.O	28.O	28.O	80
13	24.6	28.7	28.7	82
14	23.4	27.3	27.3	78
15	22.8	26.25	26.25	76
16	22.5	26.25	26.25	75
17	19.8	23.1	23.1	66
18	25.5	29.75	29.75	85
19	26.4	30.8	30.8	88
20	21.6	25.2	25.2	72
21	22.2	25.9	25.9	74
22	20.4	23.8	23.8	68
23	21.9	25.55	25.55	73
24	24.6	28.7	28.7	82
25	22.8	26.25	26.25	76
26	22.5	26.25	26.25	75
			PRE-TEST RESULTS	
C10				
1	24.O	28.O	28.O	80
2	27.O	31.5	31.5	90
3	27.6	32.2	32.2	92
4	28.5	33.25	33.25	95
5	25.5	29.75	29.75	85
6	26.4	30.8	30.8	88
7	23.4	27.5	27.5	78
8	21.O	24.5	24.5	70
9	24.6	28.7	28.7	82
10	25.8	30.1	30.1	86
11	27.O	31.5	31.5	90
12	21.O	24.5	24.5	70
13	22.5	26.25	26.25	75
14	25.5	29.75	29.75	85
15	23.4	27.5	27.5	78
16	24.6	28.7	28.7	82
17	25.2	29.4	29.4	84
18	26.4	30.8	30.8	88
19	21.O	24.5	24.5	70
20	27.O	31.5	31.5	90

21	21.6	25.2	25.2	72
22	22.8	26.6	26.6	76
23	20.4	23.8	23.8	68
24	21.O	24.5	24.5	70
25	22.5	26.25	26.25	75
26	23.4	27.5	27.5	78
27	18.O	21.O	21.O	60
28	19.5	22.75	22.75	65
29	24.O	28.O	28.O	80
30	20.4	23.8	23.8	68
31	21.O	24.5	24.5	70
32	22.2	25.9	25.9	74
33	22.8	26.6	26.6	76
34	24.O	28.O	28.O	80
35	20.4	23.8	23.8	68

APPENDIX IX: CONTROL GROUP (POST-TEST RESULTS)

C1	CONTROL GROUP (POST-TEST RESULTS)			
	(ORAL SKILLS READING READINESS S	READING READINESS SKILLS	WRITING SKILLS	T0T AL
	(OUT OF 30)	(OUT OF 35)	(OUT OF 35	MAR KS
1	24.O	28.O	28.O	80
2	25.5	29.75	29.75	85
3	23.4	27.3	27.3	78
4	21.O	25.5	25.5	70
5	25.5	29.75	29.75	85
6	26.7	31.15	31.15	89
7	27.6	32.2	32.2	92
8	27.O	31.5	31.5	90
9	21.O	24.5	24.5	70
10	23.4	27.3	27.3	78
11	22.5	26.25	26.25	75
12	20.4	23.8	23.8	68
13	21.6	25.2	25.2	72
14	23.4	27.3	27.3	78
15	26.7	31.15	31.15	89
16	21.9	25.55	25.55	73
17	22.8	26.6	26.6	76
18	25.5	29.75	29.75	85
19	25.8	30.1	30.1	86
20	26.1	30.45	30.45	87
21	22.5	30.8	30.8	88
22	22.5	26.2 5	26.25	75
23	22.5	26.2 5	26.25	75
24	24.O	28.O	28.O	80
25	25.5	29.75	29.75	85
			POST-TEST RESULTS	
C2				
1	20.4	23.8	23.8	68
2	22.2	25.9	25.9	74
3	23.4	27.3	27.3	78
4	24.O	28.O	28.O	80
5	21.6	25.2	25.2	72
6	21.O	24.5	24.5	70
7	24.O	28.O	28.O	80
8	24.9	29.05	29.05	83
9	26.1	30.45	3045	87
10	21.3	24.85	24.85	71
11	22.8	26.6	26.6	76

12	19.2	22.4	22.4	64
13	21.O	24.5	24.5	70
14	22.5	26.25	26.25	75
15	25.5	29.75	29.75	85
16	27.O	31.5	31.5	90
17	27.O	31.5	31.5	90
18	25.2	29.4	29.4	84
19	23.4	27.3	27.3	78
20	21.O	24.5	24.5	70
21	21.O	24.5	24.5	70
22	24.O	28.O	28.O	80
23	24.9	29.05	29.05	83
24	26.7	31.15	31.15	89
25	23.4	27.3	27.3	78
26	24.6	28.7	28.7	82
27	25.8	30.1	30.1	86
28	26.4	30.8	30.8	88
29	21.O	24.5	24.5	70
30	21.O	24.5	24.5	70
			POST-TEST RESULTS	
C3				
1	27.O	31.5	31.5	90
2	24.6	25.7	28.7	82
3	22.5	26.25	26.25	75
4	21.O	24.5	24.5	70
5	24.O	28.O	28.O	80
6	25.8	30.1	30.1	86
7	26.7	31.15	31.15	89
8	22.5	26.25	26.25	75
9	24.O	28.O	28.O	80
10	24.6	28.7	28.7	82
11	27.O	31.5	31.5	90
12	21.O	24.5	24.5	70
13	24.O	28.O	28.O	80
14	27.O	31.5	31.5	90
15	23.4	27.3	27.3	78
16	21.6	25.2	25.2	72
17	27.6	32.2	32.2	92
18	26.4	30.8	30.8	88
19	24.O	28.O	28.O	80
20	24.O	28.O	28.O	80
21	21.O	24.5	24.5	70
22	22.5	26.25	26.25	75
23	24.O	28.O	28.O	80

24	25.5	29.75	29.75	85
25	26.4	30.8	30.8	88
26	24.O	28.O	28.O	80
27	21.O	24.5	24.5	70
28	22.2	25.9	25.9	74
			POST-TEST RESULTS	
C4				
1	20.4	23.8	23.8	68
2	21.O	24.5	24.5	70
3	22.5	26.25	26.25	75
4	22.2	25.9	25.9	74
5	25.5	29.75	29.75	85
6	22.5	26.25	26.25	75
7	19.5	22.75	22.75	65
8	19.5	22.75	22.75	65
9	22.5	26.25	26.25	75
10	23.4	27.3	27.3	78
11	25.5	29.75	29.75	85
12	25.2	29.4	29.4	84
13	24.O	28.O	28.O	80
14	26.7	31.15	31.15	89
15	19.5	22.75	22.75	65
16	20.4	23.8	23.8	68
17	22.8	26.6	26.6	76
18	24.O	28.O	28.O	80
19	21.O	24.5	24.5	70
20	26.7	31.15	31.15	89
21	24.O	28.O	28.O	80
22	26.4	30.8	30.8	88
23	22.8	26.6	26.6	76
24	21.O	24.5	24.5	70
25	23.4	27.3	27.3	78
26	23.4	27.3	27.3	78
27	22.5	26.25	26.25	75
28	19.5	22.75	22.75	65
29	23.4	27.3	27.3	78
30	24.O	28.O	28.O	80
31	19.8	23.1	23.1	66
32	16.8	19.6	19.6	56
33	21.O	24.5	24.5	70
			POST-TEST RESULTS	
C5				
1	27.O	31.5	31.5	90

2	27.6	32.2	32.2	92
3	28.2	32.9	32.9	94
4	24.O	28.O	28.O	80
5	25.5	29.75	29.75	85
6	27.O	31.5	31.5	90
7	24.O	28.O	28.O	80
8	23.4	27.3	27.3	78
9	21.6	25.2	25.2	72
10	27.O	31.5	31.5	90
11	27.6	32.2	32.2	92
12	25.2	29.4	29.4	84
13	25.5	29.75	29.75	85
14	25.8	30.1	30.1	86
15	24.O	28.O	28.O	80
16	21.O	24.5	24.5	70
17	22.5	26.25	26.25	75
18	22.5	26.25	26.25	75
19	24.O	28.O	28.O	80
20	25.5	29.75	29.75	85
21	26.4	30.8	30.8	88
22	24.O	28.O	28.O	80
23	27.O	31.5	31.5	90
24	22.2	25.9	25.9	74
25	22.8	26.6	26.6	76
26	24.O	28.O	28.O	80
			POST-TEST RESULTS	
C6				
1	22.5	26.25	26.25	75
2	23.4	27.3	27.3	78
3	24.O	28.O	28.O	80
4	21.O	24.5	24.5	70
5	24.O	28.O	28.O	80
6	24.6	28.7	28.7	82
7	25.5	29.75	29.75	85
8	22.8	26.6	26.6	76
9	25.2	29.4	29.4	84
10	20.4	23.8	23.8	68
11	24.O	28.O	28.O	80
12	26.4	30.8	30.8	88
13	22.5	26.25	26.25	75
14	22.2	25.9	25.9	74
15	27.O	31.5	31.5	90
16	24.O	28.O	28.O	80
17	23.4	27.3	27.3	78

18	21.6	25.2	25.2	72
19	22.2	25.9	25.9	74
20	24.O	28.O	28.O	80
21	26.4	30.8	30.8	88
22	25.2	29.4	29.4	84
23	26.7	31.15	31.15	89
24	24.O	28.O	28.O	80
25	23.4	27.3	27.3	78
26	22.2	25.9	25.9	74
27	19.5	22.75	22.75	65
28	23.4	27.3	27.3	78
29	27.O	31.5	31.5	90
30	24.O	28.O	28.O	80
31	22.5	26.25	26.25	75
			POST-TEST RESULTS	
C7				
1	27.6	32.2	32.2	92
2	28.2	32.9	32.9	94
3	28.5	33.25	33.25	95
4	26.4	30.8	30.8	88
5	25.5	29.75	29.75	85
6	27.O	31.5	31.5	90
7	24.O	28.O	28.O	80
8	24.O	28.O	28.O	80
9	24.6	28.7	28.7	82
10	25.2	29.4	29.4	84
11	23.4	27.3	27.3	78
12	24.O	28.O	28.O	80
13	28.5	33.25	33.25	95
14	25.5	29.75	29.75	85
15	24.6	28.7	28.7	82
16	22.5	26.25	26.25	75
17	23.4	27.3	27.3	78
18	21.O	24.5	24.5	70
19	24.O	28.O	28.O	80
20	25.5	29.75	29.75	85
21	24.6	28.7	28.7	82
22	27.O	31.5	31.5	90
			POST-TEST RESULTS	
C8				
1	18.6	21.7	21.7	62
2	22.2	25.9	25.9	74
3	24.6	28.7	28.7	82

4	23.4	27.3	27.3	78
5	21.O	24.5	24.5	70
6	18.O	21.O	21.O	60
7	20.4	23.8	23.8	68
8	21.6	25.2	25.2	72
9	23.4	27.3	27.3	78
10	24.O	28.O	28.O	80
11	24.6	28.7	28.7	82
12	21.O	24.5	24.5	70
13	21.O	24.5	24.5	70
14	18.O	21.O	21.O	60
15	21.6	25.2	25.2	72
16	22.2	25.9	25.9	74
17	21.O	24.5	24.5	70
18	21.O	24.5	24.5	70
19	25.5	29.75	29.75	85
20	18.6	21.7	21.7	62
21	19.8	23.1	23.1	66
22	24.O	28.O	28.O	80
23	24.O	28.O	28.O	80
24	23.4	27.3	27.3	78
25	20.1	23.45	23.45	67
26	21.6	25.2	25.2	72
27	21.O	24.5	24.5	70
28	24.O	28.O	28.O	80
29	22.5	26.25	26.25	75
30	21.6	25.2	25.2	72
31	22.2	25.9	25.9	74
32	20.4	23.8	23.8	68
33	20.7	24.15	24.15	69
34	24.O	28.O	28.O	80
35	24.6	28.7	28.7	82
36	21.O	24.5	24.5	70
37	21.O	24.5	24.5	70
38	21.O	24.5	24.5	70
39	23.4	27.3	27.3	78
40	24.O	28.O	28.O	80
			POST-TEST RESULTS	
C9				
1	22.5	26.25	26.25	75
2	24.O	28.O	28.O	80
3	24.O	28.O	28.O	80
4	24.O	28.O	28.O	80
5	25.6	30.1	30.1	86

6	21.O	24.5	24.5	70
7	21.6	25.2	25.2	72
8	22.5	26.25	26.25	75
9	22.2	25.9	25.9	74
10	23.4	27.3	27.3	78
11	20.4	23.8	23.8	68
12	24.O	28.O	28.O	80
13	25.2	29.4	29.4	84
14	25.6	30.1	30.1	86
15	23.4	27.3	27.3	78
16	24.O	28.O	28.O	80
17	21.O	24.5	24.5	70
18	26.4	30.8	30.8	88
19	27.O	31.5	31.5	90
20	23.4	27.3	27.3	78
21	22.8	26.6	26.6	76
22	21.6	25.2	25.2	72
23	22.5	26.25	26.25	75
24	25.5	29.75	29.75	85
25	24.O	28.O	28.O	80
26	24.O	28.O	28.O	80
			POST-TEST RESULTS	
C10				
1	25.5	29.75	29.75	85
2	28.5	33.25	33.25	95
3	28.5	33.25	33.25	95
4	28.5	33.25	33.25	95
5	25.8	30.1	30.1	86
6	27.O	31.5	31.5	90
7	24.O	28.O	28.O	80
8	22.5	26.25	26.25	75
9	26.4	30.8	30.8	88
10	26.4	30.8	30.8	88
11	27.O	31.5	31.5	90
12	22.5	26.25	26.25	75
13	24.O	28.O	28.O	80
14	25.8	30.1	30.1	86
15	25.5	29.75	29.75	85
16	25.8	30.1	30.1	86
17	25.8	30.1	30.1	86
18	27.O	31.5	31.5	90
19	23.4	27.3	27.3	78
20	27.O	31.5	31.5	90

21	22.8	26.6	26.6	76
22	23.4	27.3	27.3	78
23	21.O	24.5	24.5	70
24	22.2	25.9	25.9	74
25	22.5	26.25	26.25	75
26	24.O	28.O	28.O	80
27	19.5	22.75	22.75	65
28	21.O	24.5	24.5	70
29	24.O	28.O	28.O	80
30	21.O	24.5	24.5	70
31	21.6	25.2	25.2	72
32	22.5	26.25	26.25	75
33	24.O	28.O	28.O	80
34	24.O	28.O	28.O	80
35	21.O	24.5	24.5	70

APPENDIX X : EXPERIMENTAL GROUP (PRE-TEST RESULTS)

E1	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			
	(ORAL ACTIVITIES READING READINESS S	READING READNESS SKILLS	WRITING SKILLS	T0TAL
	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	18.O	21.O	21.O	60
2	25.5	29.75	29.75	85
3	21.O	24.5	24.5	70
4	23.4	27.3	27.3	78
5	20.4	23,8	23.8	68
6	19.5	22.75	22.75	65
7	21.6	25.2	25.2	72
8	21.O	24.5	24.5	70
9	24.O	28.O	28.O	80
10	22.2	25.55	25.55	73
11	18.6	21.7	21.7	62
12	20.1	23.45	23.45	67
13	19.5	22.75	22.75	65
14	21.O	24.5	24.5	70
15	21.6	25.2	25.2	72
16	22.5	26.25	26.25	75
17	22.8	26.6	26.6	76
18	24.O	28.O	28.O	80
19	23.7	27.65	27.65	79
20	18.9	22.05	22.03	63
21	19.5	22.75	22.75	65
22	21.O	24.5	24.5	70
23	21.O	24.5	24.5	70
24	22.2	25.55	25.55	73
25	22.5	26.25	26.25	75
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E2	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	21.O	24.5	24.5	70
2	21.6	25.2	25.2	72
3	22.5	26.25	26.25	75
4	25.5	29.75	29.75	85
5	24.6	28.7	28.7	82
6	23.4	27.3	27.3	78
7	20.4	23,8	23.8	68
8	20.4	23,8	23.8	68
9	21.O	24.5	24.5	70
10	21.O	24.5	24.5	70

11	22.5	26.25	26.25	75
12	22.5	26.25	26.25	75
13	24.6	28.7	28.7	82
14	20.4	23,8	23.8	68
15	19.5	22.75	22.75	65
16	23.1	26.95	26.95	77
17	24.O	28.O	28.O	80
18	26.4	30.8	30.8	88
19	21.6	25.2	25.2	72
20	20.4	23,8	23.8	68
21	20.4	23,8	23.8	68
22	21.O	24.5	24.5	70
23	21.O	24.5	24.5	70
24	22.5	26.25	26.25	75
25	23.4	27.3	27.3	78
26	24.O	28.O	28.O	80
27	24.9	29.05	29.05	83
28	24.6	28.7	28.7	82
29	19.5	22.75	22.75	65
30	22.8	26.6	26.6	76
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E3	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	20.4	23,8	23.8	68
2	18.O	21.O	21.O	60
3	19.5	22.75	22.75	65
4	21.O	24.5	24.5	70
5	21.6	25.2	25.2	72
6	20.4	23,8	23.8	68
7	19.5	22.75	22.75	65
8	21.O	24.5	24.5	70
9	23.4	27.3	27.3	78
10	24.O	28.O	28.O	80
11	22.8	26.6	26.6	76
12	19.5	22.75	22.75	65
13	21.O	24.5	24.5	70
14	21.6	25.2	25.2	72
15	22.8	26.6	26.6	76
16	24.O	28.O	28.O	80
17	24.6	28.7	28.7	82
18	21.6	25.2	25.2	72
19	22.8	26.6	26.6	76
20	20.4	23.8	23.8	68
21	22.2	25.9	25.9	74

22	23.4	27.3	27.3	78
23	18.O	21.O	21.O	60
24	22.5	26.25	26.25	75
25	19.5	22.75	22.75	65
26	21.6	25.2	25.2	72
27	20.4	23.8	23.8	68
28	24.O	28.O	28.O	80
29	24.6	28.7	28.7	82
30	21.O	24.5	24.5	70
31	23.4	27.3	27.3	78
32	16.8	19.6	19.6	56
33	21.6	25.2	25.2	72
34	20.4	23.8	23.8	68
35	18.O	21.O	21.O	60
36	21.O	24.5	24.5	70
37	21.O	24.5	24.5	70
38	24.O	28.O	28.O	80
39	21.6	25.2	25.2	72
40	20.4	23.8	23.8	68
41	19.5	22.75	22.75	65
42	19.2	22.4	22.4	64
43	16.5	19.25	19.25	55
44	18.O	21.O	21.O	60
45	21.O	24.5	24.5	70
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E4	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	21.O	24.5	24.5	70
2	21.6	25.2	25.2	72
3	22.5	26.25	26.25	75
4	24.O	28.O	28.O	80
5	24.6	28.7	28.7	82
6	20.4	23.8	23.8	68
7	23.4	27.3	27.3	78
8	22.8	26.6	26.6	76
9	22.5	26.25	26.25	75
10	24.O	28.O	28.O	80
11	24.6	28.7	28.7	82
12	22.5	26.25	26.25	75
13	22.8	26.6	26.6	76
14	20.4	23.8	23.8	68
15	18.O	21.O	21.O	60
16	21.O	24.5	24.5	70
17	24.O	28.O	28.O	80

18	24.O	28.O	28.O	80
19	21.O	24.5	24.5	70
20	27.O	31.15	31.15	90
21	23.4	27.3	27.3	78
22	19.5	22.75	22.75	65
23	23.4	27.3	27.3	78
24	25.5	29.75	29.75	85
25	23.7	27.65	27.65	79
26	26.4	30.8	30.8	88
27	21.O	24.5	24.5	70
28	22.5	26.25	26.25	75
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E5	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	24.O	28.O	28.O	80
2	21.O	24.5	24.5	70
3	18.O	21.O	21.O	60
4	22.5	26.25	26.25	75
5	23.4	27.3	27.3	78
6	24.6	28.7	28.7	82
7	22.2	25.9	25.9	74
8	20.4	23.8	23.8	68
9	20.7	24.15	24.15	69
10	23.4	27.3	27.3	78
11	21.6	25.2	25.2	72
12	24.6	28.7	28.7	82
13	24.9	29.05	29.05	83
14	21.O	24.5	24.5	70
15	22.5	26.25	26.25	75
16	25.5	29.75	29.75	85
17	24.O	28.O	28.O	80
18	21.O	24.5	24.5	70
19	21.6	25.2	25.2	72
20	19.5	22.75	22.75	65
21	18.O	21.O	21.O	60
22	23.4	27.3	27.3	78
23	21.O	24.5	24.5	70
24	21.6	25.2	25.2	72
25	22.8	26.6	26.6	76
26	22.5	26.25	26.25	75
27	26.4	30.8	30.8	88
28	24.6	28.7	28.7	82
29	25.8	30.1	30.1	86
30	21.O	24.5	24.5	70

31	19.5	22.75	22.75	65
32	21.6	25.2	25.2	72
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E6	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	20.4	23.8	23.8	68
2	23.4	27.3	27.3	78
3	21.6	25.2	25.2	72
4	24.O	28.O	28.O	80
5	22.8	26.6	26.6	76
6	20.4	23.8	23.8	68
7	19.5	22.75	22.75	65
8	21.O	24.5	24.5	70
9	22.5	26.25	26.25	75
10	24.O	28.O	28.O	80
11	24.3	28.35	28.35	81
12	24.6	28.7	28.7	82
13	22.5	26.25	26.25	75
14	23.4	27.3	27.3	78
15	24.O	28.O	28.O	80
16	23.1	23.1	23.1	66
17	19.5	22.75	22.75	65
18	21.O	24.5	24.5	70
19	21.6	25.2	25.2	72
20	19.5	22.75	22.75	65
21	24.6	28.7	28.7	82
22	21.O	24.5	24.5	70
23	22.5	26.25	26.25	75
24	22.5	26.25	26.25	75
25	24.O	28.O	28.O	80
26	23.4	27.3	27.3	78
27	20.4	23.8	23.8	68
28	18.O	21.O	21.O	60
29	19.5	22.75	22.75	65
30	18.O	21.O	21.O	60
31	17.4	20.3	20.3	58
32	21.O	24.5	24.5	70
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E7	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	23.4	27.3	27.3	78
2	19.8	23.1	23.1	66
3	24.O	28.O	28.O	80
4	24.6	28.7	28.7	82

5	21.O	24.5	24.5	70
6	22.5	26.25	26.25	75
7	22.5	26.25	26.25	75
8	24.O	28.O	28.O	80
9	24.6	28.7	28.7	82
10	23.4	27.3	27.3	78
11	22.8	26.6	26.6	76
12	20.4	23.8	23.8	68
13	24.O	28.O	28.O	80
14	24.O	28.O	28.O	80
15	27.O	31.5	31.5	90
16	27.6	32.2	32.2	92
17	23.4	27.3	27.3	78
18	24.O	28.O	28.O	80
19	25.5	29.75	29.75	85
20	24.6	28.7	28.7	82
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E8	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	17.4	20.3	20.3	58
2	16.5	19.25	19.25	55
3	18.O	21.O	21.O	60
4	19.5	22.75	22.75	65
5	21.O	24.5	24.5	70
6	21.6	25.2	25.2	72
7	20.4	23.8	23.8	68
8	23.4	27.3	27.3	78
9	21.O	24.5	24.5	70
10	22.5	26.25	26.25	75
11	19.5	22.75	22.75	65
12	20.4	23.8	23.8	68
13	21.O	24.5	24.5	70
14	16.8	19.6	19.6	56
15	18.6	21.7	21.7	62
16	23.4	27.3	27.3	78
17	24.O	28.O	28.O	80
18	25.5	29.75	29.75	85
19	21.6	25.2	25.2	72
20	22.8	26.6	26.6	76
21	23.7	27.65	27.65	79
22	18.O	21.O	21.O	60
23	19.5	22.75	22.75	65
24	22.5	26.25	26.25	75
25	21.O	24.5	24.5	70

26	21.6	25.2	25.2	72
27	22.2	25.9	25.9	74
28	22.8	26.6	26.6	76
29	23.1	23.1	23.1	66
30	18.O	21.O	21.O	60
31	16.5	19.25	19.25	55
32	21.O	24.5	24.5	70
33	16.5	19.25	19.25	55
34	16.5	18.9	18.9	54
35	18.6	21.7	21.7	62
36	21.6	25.2	25.2	72
37	22.5	26.25	26.25	75
38	24.O	28.O	28.O	80
39	24.3	28.35	28.35	81
40	21.6	25.2	25.2	72
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E9	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	23.4	27.3	27.3	78
2	21.6	25.2	25.2	72
3	24.O	28.O	28.O	80
4	24.6	28.7	28.7	82
5	21.O	24.5	24.5	70
6	22.5	26.25	26.25	75
7	22.5	26.25	26.25	75
8	22.8	26.6	26.6	76
9	23.4	27.3	27.3	78
10	20.4	23.8	23.8	68
11	21.O	24.5	24.5	70
12	24.O	28.O	28.O	80
13	24.6	28.7	28.7	82
14	25.5	29.75	29.75	85
15	22.5	26.25	26.25	75
16	24.O	28.O	28.O	80
17	24.O	28.O	28.O	80
18	22.5	26.25	26.25	75
19	21.6	25.2	25.2	72
20	21.6	25.2	25.2	72
21	19.2	22.4	22.4	64
22	23.1	23.1	23.1	66
23	25.2	29.4	29.4	84
24	22.8	26.6	26.6	76
25	24.O	28.O	28.O	80
26	24.6	28.7	28.7	82

27	25.5	29.75	29.75	85
28	22.2	25.9	25.9	74
29	21.9	25.55	25.55	73
30	24.O	28.O	28.O	80
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E10	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	21.O	24.5	24.5	70
2	27.4	32.2	32.2	92
3	23.4	27.3	27.3	78
4	24.O	28.O	28.O	80
5	23.4	27.3	27.3	78
6	22.8	26.6	26.6	76
7	24.O	28.O	28.O	80
8	24.6	28.7	28.7	82
9	21.6	25.2	25.2	72
10	28.2	32.9.	32.9	94
11	21.6	25.2	25.2	72
12	20.4	23.8	23.8	68
13	19.5	22.75	22.75	65
14	22.5	26.25	26.25	75
15	24.O	28.O	28.O	80
16	22.8	26.6	26.6	76
17	22.2	25.9	25.9	74
18	26.4	30.8	30.8	88
19	23.4	27.5	27.5	78
20	24.O	28.O	28.O	80
21	24.6	28.7	28.7	82
22	22.8	26.6	26.6	76
23	19.5	22.75	22.75	65
24	23.1	26.95	26.95	77
25	20.4	23.8	23.8	68
26	24.O	28.O	28.O	80

APPENDIX XI : EXPERIMENTAL GROUP (PRE-TEST RESULTS)

E1	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			
	(ORAL ACTIVITIES READING READINESS S	READING READNESS SKILLS	WRITING SKILLS	T0TAL
	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	18.O	21.O	21.O	60
2	25.5	29.75	29.75	85
3	21.O	24.5	24.5	70
4	23.4	27.3	27.3	78
5	20.4	23,8	23.8	68
6	19.5	22.75	22.75	65
7	21.6	25.2	25.2	72
8	21.O	24.5	24.5	70
9	24.O	28.O	28.O	80
10	22.2	25.55	25.55	73
11	18.6	21.7	21.7	62
12	20.1	23.45	23.45	67
13	19.5	22.75	22.75	65
14	21.O	24.5	24.5	70
15	21.6	25.2	25.2	72
16	22.5	26.25	26.25	75
17	22.8	26.6	26.6	76
18	24.O	28.O	28.O	80
19	23.7	27.65	27.65	79
20	18.9	22.05	22.03	63
21	19.5	22.75	22.75	65
22	21.O	24.5	24.5	70
23	21.O	24.5	24.5	70
24	22.2	25.55	25.55	73
25	22.5	26.25	26.25	75
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E2	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	21.O	24.5	24.5	70
2	21.6	25.2	25.2	72
3	22.5	26.25	26.25	75
4	25.5	29.75	29.75	85
5	24.6	28.7	28.7	82
6	23.4	27.3	27.3	78
7	20.4	23,8	23.8	68
8	20.4	23,8	23.8	68
9	21.O	24.5	24.5	70
10	21.O	24.5	24.5	70

11	22.5	26.25	26.25	75
12	22.5	26.25	26.25	75
13	24.6	28.7	28.7	82
14	20.4	23,8	23.8	68
15	19.5	22.75	22.75	65
16	23.1	26.95	26.95	77
17	24.O	28.O	28.O	80
18	26.4	30.8	30.8	88
19	21.6	25.2	25.2	72
20	20.4	23,8	23.8	68
21	20.4	23,8	23.8	68
22	21.O	24.5	24.5	70
23	21.O	24.5	24.5	70
24	22.5	26.25	26.25	75
25	23.4	27.3	27.3	78
26	24.O	28.O	28.O	80
27	24.9	29.05	29.05	83
28	24.6	28.7	28.7	82
29	19.5	22.75	22.75	65
30	22.8	26.6	26.6	76
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E3	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	20.4	23,8	23.8	68
2	18.O	21.O	21.O	60
3	19.5	22.75	22.75	65
4	21.O	24.5	24.5	70
5	21.6	25.2	25.2	72
6	20.4	23,8	23.8	68
7	19.5	22.75	22.75	65
8	21.O	24.5	24.5	70
9	23.4	27.3	27.3	78
10	24.O	28.O	28.O	80
11	22.8	26.6	26.6	76
12	19.5	22.75	22.75	65
13	21.O	24.5	24.5	70
14	21.6	25.2	25.2	72
15	22.8	26.6	26.6	76
16	24.O	28.O	28.O	80
17	24.6	28.7	28.7	82
18	21.6	25.2	25.2	72
19	22.8	26.6	26.6	76
20	20.4	23.8	23.8	68
21	22.2	25.9	25.9	74

22	23.4	27.3	27.3	78
23	18.O	21.O	21.O	60
24	22.5	26.25	26.25	75
25	19.5	22.75	22.75	65
26	21.6	25.2	25.2	72
27	20.4	23.8	23.8	68
28	24.O	28.O	28.O	80
29	24.6	28.7	28.7	82
30	21.O	24.5	24.5	70
31	23.4	27.3	27.3	78
32	16.8	19.6	19.6	56
33	21.6	25.2	25.2	72
34	20.4	23.8	23.8	68
35	18.O	21.O	21.O	60
36	21.O	24.5	24.5	70
37	21.O	24.5	24.5	70
38	24.O	28.O	28.O	80
39	21.6	25.2	25.2	72
40	20.4	23.8	23.8	68
41	19.5	22.75	22.75	65
42	19.2	22.4	22.4	64
43	16.5	19.25	19.25	55
44	18.O	21.O	21.O	60
45	21.O	24.5	24.5	70
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E4	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	21.O	24.5	24.5	70
2	21.6	25.2	25.2	72
3	22.5	26.25	26.25	75
4	24.O	28.O	28.O	80
5	24.6	28.7	28.7	82
6	20.4	23.8	23.8	68
7	23.4	27.3	27.3	78
8	22.8	26.6	26.6	76
9	22.5	26.25	26.25	75
10	24.O	28.O	28.O	80
11	24.6	28.7	28.7	82
12	22.5	26.25	26.25	75
13	22.8	26.6	26.6	76
14	20.4	23.8	23.8	68
15	18.O	21.O	21.O	60
16	21.O	24.5	24.5	70
17	24.O	28.O	28.O	80

18	24.O	28.O	28.O	80
19	21.O	24.5	24.5	70
20	27.O	31.15	31.15	90
21	23.4	27.3	27.3	78
22	19.5	22.75	22.75	65
23	23.4	27.3	27.3	78
24	25.5	29.75	29.75	85
25	23.7	27.65	27.65	79
26	26.4	30.8	30.8	88
27	21.O	24.5	24.5	70
28	22.5	26.25	26.25	75
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E5	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	24.O	28.O	28.O	80
2	21.O	24.5	24.5	70
3	18.O	21.O	21.O	60
4	22.5	26.25	26.25	75
5	23.4	27.3	27.3	78
6	24.6	28.7	28.7	82
7	22.2	25.9	25.9	74
8	20.4	23.8	23.8	68
9	20.7	24.15	24.15	69
10	23.4	27.3	27.3	78
11	21.6	25.2	25.2	72
12	24.6	28.7	28.7	82
13	24.9	29.05	29.05	83
14	21.O	24.5	24.5	70
15	22.5	26.25	26.25	75
16	25.5	29.75	29.75	85
17	24.O	28.O	28.O	80
18	21.O	24.5	24.5	70
19	21.6	25.2	25.2	72
20	19.5	22.75	22.75	65
21	18.O	21.O	21.O	60
22	23.4	27.3	27.3	78
23	21.O	24.5	24.5	70
24	21.6	25.2	25.2	72
25	22.8	26.6	26.6	76
26	22.5	26.25	26.25	75
27	26.4	30.8	30.8	88
28	24.6	28.7	28.7	82
29	25.8	30.1	30.1	86
30	21.O	24.5	24.5	70

31	19.5	22.75	22.75	65
32	21.6	25.2	25.2	72
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E6	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	20.4	23.8	23.8	68
2	23.4	27.3	27.3	78
3	21.6	25.2	25.2	72
4	24.O	28.O	28.O	80
5	22.8	26.6	26.6	76
6	20.4	23.8	23.8	68
7	19.5	22.75	22.75	65
8	21.O	24.5	24.5	70
9	22.5	26.25	26.25	75
10	24.O	28.O	28.O	80
11	24.3	28.35	28.35	81
12	24.6	28.7	28.7	82
13	22.5	26.25	26.25	75
14	23.4	27.3	27.3	78
15	24.O	28.O	28.O	80
16	23.1	23.1	23.1	66
17	19.5	22.75	22.75	65
18	21.O	24.5	24.5	70
19	21.6	25.2	25.2	72
20	19.5	22.75	22.75	65
21	24.6	28.7	28.7	82
22	21.O	24.5	24.5	70
23	22.5	26.25	26.25	75
24	22.5	26.25	26.25	75
25	24.O	28.O	28.O	80
26	23.4	27.3	27.3	78
27	20.4	23.8	23.8	68
28	18.O	21.O	21.O	60
29	19.5	22.75	22.75	65
30	18.O	21.O	21.O	60
31	17.4	20.3	20.3	58
32	21.O	24.5	24.5	70
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E7	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	23.4	27.3	27.3	78
2	19.8	23.1	23.1	66
3	24.O	28.O	28.O	80
4	24.6	28.7	28.7	82

5	21.O	24.5	24.5	70
6	22.5	26.25	26.25	75
7	22.5	26.25	26.25	75
8	24.O	28.O	28.O	80
9	24.6	28.7	28.7	82
10	23.4	27.3	27.3	78
11	22.8	26.6	26.6	76
12	20.4	23.8	23.8	68
13	24.O	28.O	28.O	80
14	24.O	28.O	28.O	80
15	27.O	31.5	31.5	90
16	27.6	32.2	32.2	92
17	23.4	27.3	27.3	78
18	24.O	28.O	28.O	80
19	25.5	29.75	29.75	85
20	24.6	28.7	28.7	82
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E8	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	17.4	20.3	20.3	58
2	16.5	19.25	19.25	55
3	18.O	21.O	21.O	60
4	19.5	22.75	22.75	65
5	21.O	24.5	24.5	70
6	21.6	25.2	25.2	72
7	20.4	23.8	23.8	68
8	23.4	27.3	27.3	78
9	21.O	24.5	24.5	70
10	22.5	26.25	26.25	75
11	19.5	22.75	22.75	65
12	20.4	23.8	23.8	68
13	21.O	24.5	24.5	70
14	16.8	19.6	19.6	56
15	18.6	21.7	21.7	62
16	23.4	27.3	27.3	78
17	24.O	28.O	28.O	80
18	25.5	29.75	29.75	85
19	21.6	25.2	25.2	72
20	22.8	26.6	26.6	76
21	23.7	27.65	27.65	79
22	18.O	21.O	21.O	60
23	19.5	22.75	22.75	65
24	22.5	26.25	26.25	75
25	21.O	24.5	24.5	70

26	21.6	25.2	25.2	72
27	22.2	25.9	25.9	74
28	22.8	26.6	26.6	76
29	23.1	23.1	23.1	66
30	18.O	21.O	21.O	60
31	16.5	19.25	19.25	55
32	21.O	24.5	24.5	70
33	16.5	19.25	19.25	55
34	16.5	18.9	18.9	54
35	18.6	21.7	21.7	62
36	21.6	25.2	25.2	72
37	22.5	26.25	26.25	75
38	24.O	28.O	28.O	80
39	24.3	28.35	28.35	81
40	21.6	25.2	25.2	72
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E9	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	23.4	27.3	27.3	78
2	21.6	25.2	25.2	72
3	24.O	28.O	28.O	80
4	24.6	28.7	28.7	82
5	21.O	24.5	24.5	70
6	22.5	26.25	26.25	75
7	22.5	26.25	26.25	75
8	22.8	26.6	26.6	76
9	23.4	27.3	27.3	78
10	20.4	23.8	23.8	68
11	21.O	24.5	24.5	70
12	24.O	28.O	28.O	80
13	24.6	28.7	28.7	82
14	25.5	29.75	29.75	85
15	22.5	26.25	26.25	75
16	24.O	28.O	28.O	80
17	24.O	28.O	28.O	80
18	22.5	26.25	26.25	75
19	21.6	25.2	25.2	72
20	21.6	25.2	25.2	72
21	19.2	22.4	22.4	64
22	23.1	23.1	23.1	66
23	25.2	29.4	29.4	84
24	22.8	26.6	26.6	76
25	24.O	28.O	28.O	80
26	24.6	28.7	28.7	82

27	25.5	29.75	29.75	85
28	22.2	25.9	25.9	74
29	21.9	25.55	25.55	73
30	24.O	28.O	28.O	80
	EXPERIMENTAL GROUP (PRE-TEST RESULTS)			T0TAL
E10	(OUT OF 30MARKS)	(OUT OF 35MARKS)	(OUT OF 35MARKS	MARKS
1	21.O	24.5	24.5	70
2	27.4	32.2	32.2	92
3	23.4	27.3	27.3	78
4	24.O	28.O	28.O	80
5	23.4	27.3	27.3	78
6	22.8	26.6	26.6	76
7	24.O	28.O	28.O	80
8	24.6	28.7	28.7	82
9	21.6	25.2	25.2	72
10	28.2	32.9.	32.9	94
11	21.6	25.2	25.2	72
12	20.4	23.8	23.8	68
13	19.5	22.75	22.75	65
14	22.5	26.25	26.25	75
15	24.O	28.O	28.O	80
16	22.8	26.6	26.6	76
17	22.2	25.9	25.9	74
18	26.4	30.8	30.8	88
19	23.4	27.5	27.5	78
20	24.O	28.O	28.O	80
21	24.6	28.7	28.7	82
22	22.8	26.6	26.6	76
23	19.5	22.75	22.75	65
24	23.1	26.95	26.95	77
25	20.4	23.8	23.8	68
26	24.O	28.O	28.O	80