

**AVAILABILITY AND UTILIZATION OF RESOURCES IN TEACHING AND
LEARNING OF ENVIRONMENTAL ACTIVITIES IN EARLY CHILDHOOD
DEVELOPMENT AND EDUCATION IN UASIN GISHU COUNTY KENYA**

BY

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DECLARATION

The present thesis is an original piece of work that has not been previously submitted for the attainment of a degree at any other academic institution. The reproduction of any portion of this thesis is strictly prohibited without obtaining prior authorization from the author and/or Moi University.

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ABSTRACT

The importance of early childhood education in the lives of learners cannot be overstated, as it serves as a fundamental basis from which subsequent levels of education build upon. The objective of this study was to assess the availability and utilisation of resources for the instruction and acquisition of Environmental activities in Early Childhood Development and Education (ECDE) Centres located in Uasin Gishu County, Kenya. The primary aims of this study were to determine the availability of instructional resources, assess the utilisation of these resources, evaluate the availability of suitable physical facilities, and analyse the utilisation of these facilities for the purpose of teaching and learning environmental activities in Early Childhood Development and Education (ECDE) Centres located in Uasin Gishu County, Kenya. The research employed Urie Bronfenbrenner's Ecological Systems Theory, which examines a child's development in relation to the network of relationships that constitute their environment. The present study employed a descriptive survey research design and utilised a mixed methods research approach. The study utilised a target population consisting of 150 respondents, with a sample size comprising 25 head teachers and 50 teachers. This study employed a multistage sampling approach that integrated stratified, purposive, and simple random sampling methods in order to select the sample. The primary instruments employed for data collection included questionnaires, observation checklists, and lesson observation schedules. The collected data was subsequently subjected to analysis using descriptive statistics, specifically employing frequency distribution tables. The findings indicated that instructional resources availability varied according to the types of the resources. Environmental text books were available in most of the ECDE schools (72.1%), nature trips and human resources were also readily available in the school community (76.3%). Other essential resources for teaching and learning Environmental activities such as seeds/seedlings, animals/insects were the least available in the schools and all at dismal (45.9%) level of availability. The study established that most of the available teaching and learning resources in the schools were underutilized. For example nature walk opportunities were highly available in the schools but were not utilized: (16.4%) level of utilization, devices were also available but reported to be underutilized in majority of the schools: (42.6%) level of utilization. The physical facilities available included cards/card games (mean=1.97), Pupils environmental textbooks (mean=1.60), teachers environmental text books among others (mean=2.23). However the utilization was low. The study recommended that the government in collaboration with the community should provide enough instructional resources to enhance the teaching and learning of Environmental activities. The study recommended that the Ministry of Education in collaboration with ECDE officers should conduct more seminars, workshops and conferences for Environmental activities curriculum for the teachers. All pre-school teachers in public pre-schools should be trained on the new curriculum in order to optimize the utilization of the available resources. It is expected that the findings of this study will make a step towards the improvement of the teaching of environmental activities in ECDEs. Curriculum developers will also find the study findings useful as they reflect over the extent in which the objectives set for the subject are being achieved.

DEDICATION

To my parents Mr. and Mrs. Konga'i; Siblings: Josiah and Daniel; to my beloved husband Mr. Barnabas Bii and my great children: Shonez and Eileen. All these people endured in seeing me through the tiring toils in incessant pursuit of education. I also dedicate this work to my brother; the late Kiprotich Edwin for the support I received during the days he was alive.

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LIST OF ABBREVIATIONS

CBC	Competency based Curriculum
ECDE	Early childhood development education
ECDs	Early Childhood Development
EE	Environmental Education
Gok	Government of Kenya
KICD	Kenya Institute of Curriculum Development
MoEVT	Ministry of Education and Vocational Training
NACECE	National centre for early childhood education
SPSS	Statistical Package of social Sciences
UNESCO	United Nations Educational, Scientific and Cultural Organization

CHAPTER ONE

INTRODUCTION

1.0 Introduction of the Chapter

This chapter provides an overview and introduction to the study. The text specifically addresses various components of an academic research paper, including the provision of background information, the formulation of a research problem statement, the establishment of the study's purpose and objectives, the formulation of research questions, the identification of assumptions, the determination of the study's significance, the delineation of the study's scope and limitations, the establishment of a theoretical framework, and the definition of key terms.

1.1 Background to the Study

Early childhood development education plays a pivotal role as it signifies the commencement of the perpetual educational journey of humanity. The primary objective of this initiative is to facilitate the comprehensive growth and development of the child by providing a cohesive array of services, competencies, and information. The objective of this approach is to facilitate the child's acquisition of self-awareness and comprehension of the immediate surroundings. Despite the diligent endeavours undertaken by the Government of Kenya (Gok) to augment the Early Childhood Development and Education (ECDE) initiatives within the nation via the execution of the novel Competence Based Curriculum, the pre-school education domain persistently confronts a multitude of challenges in its pursuit of dispensing superior-quality services (KICD, 2018). Despite the potential advantages associated with Early Childhood

Development and Education (ECDE), there remains a lack of effective implementation of the ECDE curriculum within the sub-sector (Varld, 2019). It is important to acknowledge that Early Childhood Development and Education (ECDE) policies emphasize the utilization of ample and appropriate instructional resources in order to foster the holistic development of the child (Gok, 2019). The current state of affairs in the educational centers within Uasin Gishu County is a cause for concern due to the insufficient availability, adequacy, selection, and utilization of instructional resources, thereby affecting the provision of quality education. The acquisition of essential skills, such as reading, communication, manipulative, numeric, and interpersonal abilities, has proven to be challenging for students in different educational settings. However, these skills can be effectively developed through the utilization of carefully chosen and diverse learning resources.

The objective of the environmental activities subject is to foster learners' comprehension and cultivation of the natural environment by means of experiential learning (Boyes, 2018). According to the guidelines for excellence provided by the North American Association for Environmental Education's Early Childhood Environmental Education Programs (2010), the field of early childhood environmental education encompasses the development of knowledge, emotional dispositions, and skills. According to the guidelines, the primary objective of environmental education is to cultivate a populace that possesses a comprehensive understanding of the environment. Environmental literacy encompasses not only fundamental knowledge pertaining to the environment, but also necessitates the cultivation of a favorable and compassionate disposition towards the

environment. Given that attitudes are typically established during early developmental stages, it is imperative for environmental education to commence in early childhood.

According to the Wisconsin Environmental Education Board (2018), environmental education is a continuous process of learning that results in the development of an informed and engaged citizenry. This process equips individuals with the ability to creatively solve problems, possess scientific and social literacy, demonstrate ethical awareness, and exhibit sensitivity towards the interconnection between humans and the environment. Furthermore, it fosters a commitment to undertake responsible actions both individually and collaboratively. Through the implementation of these measures, individuals who possess a strong understanding of environmental issues will contribute to the preservation of a balanced and economically viable ecosystem (Wisconsin Environmental Education Board, 2018).

Despite the significance of environmental initiatives, the field continues to face obstacles in its implementation. Rahman, Halim, and Ahmad (2018) conducted a study in Malaysia with the aim of identifying the challenges faced by teachers in the context of teaching and learning environmental education. Additionally, the researchers explored potential solutions for fostering positive behavioral changes among indigenous students. The research was carried out among educators from twelve primary and secondary schools that cater to indigenous students in the state of Pahang, Malaysia. The research employed a qualitative approach, utilizing semi-structured interviews as the primary method for data collection. The challenges originated from both the educators and the students within indigenous educational institutions. Educators encountered various obstacles

including limited time, excessive workload, inadequate teaching resources, unavailability of instructional manuals, and insufficient support from school administrators.

Palmer (2018) asserts that numerous countries and regions across the globe encounter a persistent deficiency of educational resources pertaining to the environment. In certain nations, efforts have been made to address this issue by implementing environmental education resources that have been created in countries such as France, Germany, The Netherlands, United States, and United Kingdom. These resources are typically introduced through training or development initiatives. The materials utilized in this context encompass various formats, including books, lesson plans, activity guides, environmental interpretation resources, and extension service documents. While the quality of the materials may be commendable, their applicability may vary across different communities and environments. However, educators express a desire to incorporate these tools into environmental education initiatives within educational institutions, public recreational areas, and local communities, particularly in cases where resources are scarce or inaccessible (Palmer, 2018).

In the context of Taiwan, a similar scenario can be observed. For instance, a scholarly investigation conducted by Yueh (2010) delved into the realm of Environmental Education within junior high schools in Taiwan. The objective of the study was to ascertain the obstacles encountered in the facilitation and acquisition of Environmental Education. This was accomplished by conducting a rigorous examination of the selection of curriculum models. The results of the study revealed that while numerous schools in

Taiwan exhibited a favorable disposition towards Environmental Education, the implementation approach employed did not yield favorable outcomes. The results of the study indicated that the implementation of strategies during the national curriculum change phase did not have a discernible effect on schools. Subsequent research revealed that the eleven supporting themes were found to be ineffective, external examination credit was absent, and Environmental Education was not given priority. Consequently, a comprehensive curriculum for Environmental Education had not been established.

According to the Education Report of 2010, it has been observed in numerous inspection reports in Africa that teachers often deliver instruction without utilizing appropriate instructional materials. This finding, as cited by Machel in 2012, serves as evidence of the declining quality of education in the region. In many educational institutions, the approach to teaching and learning has predominantly been structured and academically focused. This approach often places significant pressure and stress on young children, despite the fact that school days are intended to be a time of joy and happiness for learners. According to a study conducted by Jotia and Matlale (2011), it was observed that teachers exhibited a significant lack of proficiency in utilizing instructional materials. Consequently, this deficiency had a direct influence on the academic performance of students in the primary school leaving certificate examination. Abdo and Semela (2010) observed comparable results, indicating a limited utilization of instructional media within primary schools located in the Gedeo zone of Southern Ethiopia. The Montessori Approach to early childhood education posits that the senses serve as the conduits through which learning occurs. Children who are six years old and younger possess

minds that are highly receptive to new information and have senses that are actively engaged in the process of learning. This occurs through their effective interaction with a carefully chosen range of tangible materials. Research conducted by psychologists has demonstrated that the developmental period during which children are shaped significantly influences their future adult outcomes. This is attributed to the heightened capacity of the human brain to absorb information during this critical stage.

Bosah (2013) conducted a study in Nigeria to examine the issues, prospects, and challenges associated with Environmental Education in the country. The objective of the study was to examine the correlation between the level of administrative support provided by schools for Environmental Education and the effectiveness of Environmental Education instruction. The results of the study indicate that a significant proportion of the participants (85%) expressed dissatisfaction with the allocation of financial and personnel resources by the management for the purpose of facilitating the teaching and learning of Environmental Education in educational institutions. Additional research revealed that the administration of the school had failed to establish effective mechanisms for incorporating Environmental Education subjects into the curriculum. Additionally, the results of the study revealed the existence of platforms within educational institutions that facilitate discussions and address concerns related to environmental matters.

In a similar vein, the study conducted by Okoth (2014) focused on the investigation of head teachers' leadership roles in the provision of instructional resources for Environmental Education within secondary schools located in Siaya County, Kenya. The study examined the degree to which instructional resources were provided in the field of Environmental Education and whether these resources effectively promoted their

utilization. The results of the study revealed that the utilization of audio-visual aids plays a significant role in augmenting the effectiveness of environmental education within secondary school settings. The aforementioned resources encompassed national parks, museums, laboratories, computers, projectors, videos/films, radio, charts, and textbooks. The study discovered that the presence of these resources facilitated the acquisition of knowledge and enhanced students' attitudes and actions in relation to the environment.

The current environmental activities in Early Childhood Development and Education (ECDE) in Kenya involve the integration of Science and other activity areas within the Competency Based Curriculum for ECDE, as outlined by the Kenya Institute of Curriculum Development in 2017. Prior to conducting this research, the researcher administered a survey to assess the performance in Science among primary schools in Uasin Gishu County. Table 1.1 presents a comparative analysis of Science performance between Uasin Gishu County and the national average from 2015 to 2019. Based on the data provided, it is evident that the performance in Science within the County exhibits a subpar trend when compared to the national performance. The utilization of resources holds significant significance within the instructional process. The accessibility and effective utilization of resources at Early Childhood Development and Education (ECDE) play a crucial role in the academic achievement of students in a specific subject.

Table 1.1 Comparison between performance of Science in Uasin Gishu County and national mean since 2015-2019

Year	Uasin Gishu County	National Mean
2019	54.02	68.0
2018	52.81	66.21
2017	55.01	60.22
2016	53.64	59.10
2015	52.91	-

Source: KCPE results (2019)

According to Table 1.1; the results for the performance of science (currently environmental activities in ECDE and lower primary school) in Uasin Gishu County is below the mean score of Science nationally. This means that the teaching and learning of science is still facing a challenge. The low level of performance of Science could be explained by the availability and utilization of instructional materials and physical resources in the schools.

1.2 Statement of the Problem

The teaching of science in primary schools in Kenya has faced growing criticism, particularly in relation to the quality of instructional materials utilized. The pedagogical approach to science education in Kenyan classrooms has primarily revolved around traditional lecture-style instruction, where teachers predominantly deliver information through note-taking and rely solely on the chalkboard as a teaching tool. This method is further supported by the use of prescribed textbooks (African Social and Environmental Studies Programme, 2013).

Environmental Education has been identified as one of the emerging issues in the science curriculum for primary schools in Kenya (KICD, 2017). The purpose of instructing this

subject matter is to facilitate the learners' comprehension of the environment and exhibit their capacity and preparedness to harmoniously coexist with and oversee the environment (KICD, 2017).

In order to accomplish this learning objective, it is imperative for the teacher to carefully choose the instructional procedures and materials that will facilitate the learner's internalization, retention, and application of acquired knowledge. The productive application of acquired knowledge in everyday life is contingent upon the learners' attainment of a certain level of understanding. According to Ogoma's (2017) research on instructional materials in primary schools in Nairobi, it is noted that educators display a lack of enthusiasm in utilizing the resources that are readily accessible. Furthermore, according to Komen (2011), it has been observed that there is a deficiency in instructional materials, and concurrently, teachers are not sufficiently equipped with the necessary preparation. The study was conducted in Uasin Gishu County, Kenya, with the aim of examining the availability and utilization of resources for teaching and learning of Environmental Activities in Early Childhood Development and Education Centres. This investigation was undertaken against the contextual backdrop described above.

1.3 The Purpose of the Study

The purpose of this study was to investigate the availability and utilization of resources in teaching and learning of Environmental Activities in Early Childhood Development and Education (ECDE) Centres in Uasin Gishu County, Kenya.

1.4 Objectives of the Study

The objectives of the study were:

- i. To find out the instructional resources available in the teaching and learning of Environmental Activities in the ECDE Centres in Uasin Gishu County, Kenya.
- ii. To assess the utilization of the available instructional resources in the teaching and learning of Environmental Activities in ECDE Centres Uasin Gishu County, Kenya.
- iii. To find out the physical facilities available in the teaching and learning of Environmental Activities in the ECDE Centres in Uasin Gishu County, Kenya.
- iv. To establish the utilization of the available physical facilities in the teaching and learning of Environmental Activities in the ECDE Centres in Uasin Gishu County, Kenya.

1.5 Research Questions

The following were the research questions of the study:

- i. What instructional resources are available for the teaching and learning of environmental activities in ECDE Centres in Uasin Gishu County
- ii. What is the level of utilization of the available instructional resources in the teaching and learning of environmental activities in ECDE Centres in Uasin Gishu County?
- iii. What physical facilities are available in the teaching and learning of environmental activities in the ECDE Centres in Uasin Gishu County?

- iv. What is the level of teachers and pupils utilization of the available physical facilities in the teaching and learning of environmental activities in the ECDE Centres in Uasin Gishu County?

1.6 Justification of the Study

Environmental skills are of great importance to children at school and in life after school. According to KICD (2018) serious problems seem to be undermining the teaching of environmental activities in ECDEs, and these may reduce possibilities of environmental activities in science oriented children now and in the future. Most teachers have pointed out that they have no proper concept of instruction, others noted lack of instructional facilities, some pupils complained that hardly any teaching was taking place, while others said that the teacher was very boring (KICD, 2018).

Given the fact that often teachers have to teach environmental activities in the new CBC without receiving any instructional materials, performance becomes questionable. These examples confirm that there is a problem regarding the teaching of environmental activities at early stages of education. Such research evidence provides a strong background for the present study to be carried out by prompting the researcher to investigate the effective learning at the ECDEs.

The association between the learning resources and instruction is important as it helps to outline aspects of the resources that are not well managed and therefore likely to affect the dissemination of information to the children. The information in this study will also

establish how prepared the schools are in terms of resources like textbooks, and physical facilities.

Generally, the study will come up with innovations in the teaching of environmental activities among children at the early part of their life. Specific learning resources appropriate for teaching certain areas of difficulties in environmental activities and their identification in the locality would be of great use to teachers and learners in ECDE. This will give the teachers comfort of knowing they can actually prepare their own learning resources within the school. It will also be important other interested people such as publishers who prepare resources for commercial purposes.

It is expected that the findings of this study will be a step towards the improvement of the teaching of environmental activities in ECDEs as curriculum developers will also find the study findings useful as they reflect over the extent in which the objectives set for the subject are being achieved by focusing on many issues, on the content offered in the subject and the instructional resources used. The findings from this research will provide useful information which environmental activities teachers in ECDEs can put to immediate use. In this way, their pedagogical skills can greatly improve.

The findings are likely to lead to improved learning and children's performance in environmental activities. The curriculum planners and implementers can utilize the findings to formulate new strategies for environmental activities for implementation of CBC in ECD centers. The quality assurance and standards directorate can use the

findings in developing a comprehensive framework for improvement of implementation of environmental activities in CBC in ECD centers.

1.7 Scope of the Study

The content of this research was limited to the availability and utilization of resources in teaching and learning of environmental activities in ECDEs in Uasin Gishu County. This was achieved through establishing the instructional resources available in the teaching and learning of environmental activities; utilization of the available instructional resources in the teaching and learning of environmental activities; physical facilities available in the teaching and learning of environmental activities; and utilization of the available physical facilities in the teaching and learning of environmental activities in the ECDE Centres. The units of analysis were the teachers of environmental activities and Head teachers from the selected ECDE centres. This study covered classes between PP1 to grade 3 at the early part of their life and has been in school during the period of study.

1.8 Limitations of the Study

The study encountered several limitations. Firstly, the area of study did not fully represent Uasin Gishu County in terms of the availability and utilization of resources for teaching and learning environmental activities in Early Childhood Development Education (ECDE) centers. This limitation arose from the fact that the study was conducted in only a limited number of ECDE centers within the county. The study's findings were extrapolated to encompass all Early Childhood Development and Education (ECDE) centers in Uasin Gishu County, but caution must be exercised in generalizing these findings to all Early Childhood Development (ECD) centers across Kenya.

The head teachers and ECDE teachers exhibited hesitancy in their responses to certain items in the questionnaire and interview schedule due to concerns about potential exposure of their specific weaknesses. Nevertheless, the researcher provided reassurances to the participants regarding the maintenance of confidentiality. Since the environmental subject was a new subject in the curriculum, the respondents took more time to internalize the questions in the questionnaires hence made the data collection process a bit tacky.

1.10 Assumptions of the study

The study was carried out with the following underlying assumptions in mind:

- i. The study assumed that schools administrators provided all requirements to the ECD centers as required by the Government of Kenya and that the intended respondents (head teachers, and ECD teachers) were to cooperate in giving the required information.
- ii. The study additionally assumed that all factors not included in the study remain constant and the respondents gave honest and sincere answers.
- iii. Finally, the study assumed that the sample chosen was a representative of the total population.

1.11 Theoretical Framework

This study employed the Ecological Systems Theory, originally proposed by Dr. Urie Bronfenbrenner in 1959 and subsequently revised by Kylie Peppler in 2017. This theoretical framework examines the process of a child's development within the contextual framework of the interconnected system of relationships that constitute their environment. Bronfenbrenner's conceptual framework delineates intricate strata of the environment, each exerting an influence on the developmental trajectory of a child. The

theory has undergone a recent rebranding as "bioecological systems theory" in order to underscore the significance of a child's biological makeup as a fundamental environment that drives their developmental process.

The development of a child is influenced and directed by the interplay of various factors, including the child's biological maturation, the immediate familial and community environment, and the broader societal context. Any alterations or disputes within a particular layer would have a cascading effect on the interconnected layers. In order to comprehensively examine the development of a child, it is imperative to consider not only the child and their immediate surroundings, but also the interplay between the broader environmental factors. The ecological systems theory delineates the four tiers of child development, namely the mesosystem, exosystem, macrosystem, and microsystem.

The mesosystem serves as the intermediary link between the various components within a child's microsystem (Berk, 2000). The exosystem refers to the broader social system in which the child is not directly involved. The structures present in this particular layer have an influence on the child's development as they engage with certain structures within her microsystem (Berk, 2000). The macrosystem consists of cultural values, customs, and laws (Berk, 2000). The microsystem refers to the immediate environment surrounding the child, encompassing the various structures and entities that directly interact with the child. The microsystem refers to the connections and exchanges that a child establishes with their immediate environment (Berk, 2000).

The research employed the microsystems framework of child development and examined its interplay with the proximal environment. The microsystem encompasses various structures such as the family unit, educational institutions, local communities, and childcare settings. The provision of stable, long-term relationships by schools and teachers is deemed imperative. It is imperative for educational institutions and educators to actively foster and facilitate the primary relationship while establishing a conducive environment that embraces and fosters the holistic development of children.

The provision of sufficient and pertinent resources, utilization of suitable instructional methodologies, provision of support and motivation to students, and other requisite factors are essential for the facilitation of effective teaching. The ecological systems theory posits that the interconnection between the home, school, and community environments serves as a framework for understanding these conditions. This study placed significant emphasis on the accessibility and utilization of resources. The research utilized the Ecological Systems Theory, which examines the developmental process of children in Early Childhood Development Centers by considering the various relationships that constitute their environment.

1.12 Conceptual Framework

The study delved into how the instructional resources available; utilization of the available instructional resources; physical facilities available; and utilization of the available physical facilities affected the teaching and learning of environmental activities in the ECDE Centres. The independent variables were: availability of instructional

resources and their utilization; and availability of physical facilities and their utilization, while effective teaching of environmental activities was the dependent variable. The extraneous variables identified were the government policies and school administration, as they could also influence the implementation of environmental education curriculum.

The conceptual framework for this study is depicted in Figure 1.1.

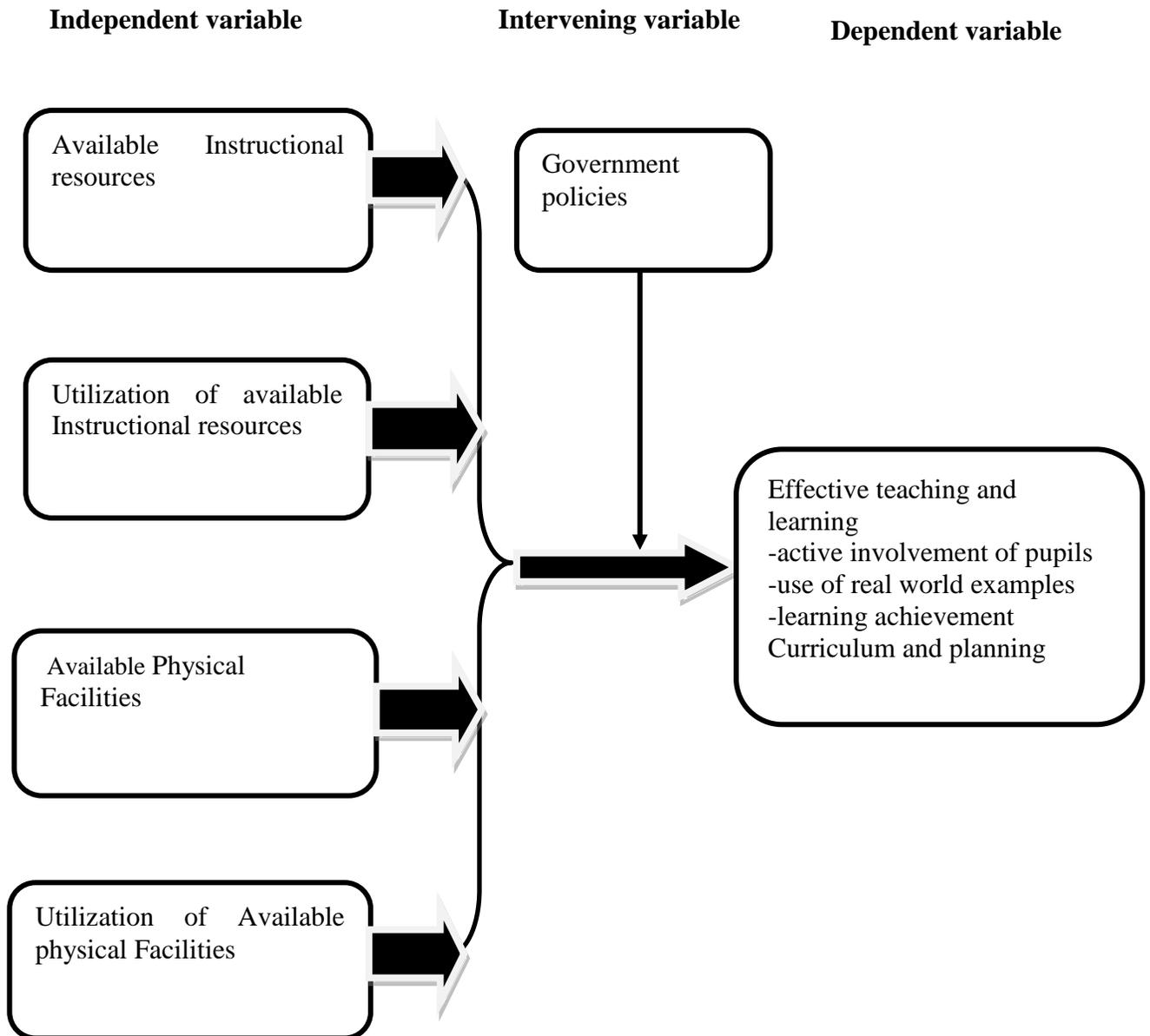


Figure 1.1: Conceptual Framework for the Study

Source: Author (2019)

1.13 Definition of Terms

Availability: This is a state of being obtainable or accessible. It refers to the degree to which an instructional resource is obtainable and accessible in an ECDE centre for use in the instructional process.

Competency-based curriculum: Refers to a curriculum that encompasses the development and application of skills as opposed to subject content and rote memorization.

Curriculum: It is the planned teaching and learning activities that enable children at the early part of their life to develop the desired knowledge, values and attitudes under the guidance of the school. The word programme is synonymously used with 'curriculum'. The study adopts this definition.

Early Childhood Education Center: Places where children at the early stages of their life mainly 8 years and below are taught. In this study it was used to represent an institution of learning where children are taught in their early years before joining primary school.

ECDE Learners: in this study it refers to learners in pre-primary school and those in Primary school in grades, one, two and three.

Environmental activities: are those activities/experiences offered to children that give them the opportunity to explore their surroundings and make sense of the world.

Lower Primary School: it was used to refer to grades one, two and three in the primary school level.

Physical Facilities: Items that are used by the children for playing and learning.

Resources: refer to objects or materials that enrich the teachers' presentation of lesson content in the instructional process. In this study, they included instructional resources and physical facilities.

Utilization: Putting into use the instructional resources and physical facilities in the instructional process in the ECDE.

1.14 Chapter Summary

This chapter presented the introduction to the study. Specifically it discussed on the background information, statement of the problem, objectives of the study, research questions, assumptions of the study, significance of the study, scope and limitations of study, theoretical framework and definition of terms. The next chapter presents the literature review of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides an overview of the relevant literature pertaining to the study. The initial section comprises a comprehensive overview, succeeded by a review of relevant scholarly works pertaining to distinct thematic areas. The researcher conducted an extensive review of scholarly literature, encompassing textbooks, peer-reviewed journals, seminar papers, thesis reports, and online publications.

2.2 Empirical review

2.2.1 Instructional Resources Available for Teaching and Learning Environmental Activities

Teaching and learning resources encompass a diverse range of materials, regardless of their format, that have an impact on both the student's learning experience and the instructor's teaching methods. The inclusion of tangible items such as models, charts, pictures, and both improvised or commercially produced materials has been noted (MoEVT, 2015).

According to the Ministry of Education, Vocational Training, and Early Education (MoEVT, 2015), environmental learning activities for pre-primary school encompass various tasks. These activities involve identifying and categorizing elements within the environment, such as living organisms and inanimate objects. Additionally, students are encouraged to recognize and label different types of fruits, as well as understand the

various purposes and applications of water. Furthermore, engaging in plant-related projects and exploring the natural world, which encompasses landscapes such as hills and mountains, as well as encounters with both wild and domesticated animals, are also integral components of these learning activities. According to Hildebrand (2015), pre-primary students exhibit a strong affinity for cultivating plants, often engaging in the process of growing pots of beans or flowers.

According to Matola (2019), engaging in nature walks within a city park, implementing the practice of planting native trees to establish a connecting pathway between fragmented forest areas, organizing a student poster contest to promote the use of public transportation, and facilitating study circles to investigate local food options are identified as highly effective educational tools for environmental activities.

Teaching resources for environmental education such as flowcharts; pictorial illustrations or pictures, real things, visits to environmentally degraded areas or places where pollution is rampant are all necessary in teaching Environmental activities. Since the major aim of EE is to help the learner develop the proper attitudes, skills and values that would enable him to utilise the environment conserving, real experience with the environment is of special importance in teaching EE, since it would help the learner to integrate the concepts in a more meaningful and realistic manner (Hornby, 2014)

Sandwatch is an educational resource that facilitates collaboration between school students, teachers, and local communities in the monitoring of coastal environments. Its

primary objectives are to identify and assess the various threats, problems, and conflicts that these environments face, and to devise sustainable strategies to effectively mitigate them. Climate change is a fundamental component of the Sand watch initiatives as outlined by UNESCO in 2015.

According to Hornby (2014), educational resources can be utilized to support the attainment of environmental objectives. These resources encompass various tools and amenities that furnish teachers and students with informational materials. According to Nikky (2010), teaching resources for the environment encompass various classroom tools, including globes, fabric pieces, and cutting materials like scissors. Nikky further emphasizes that the effectiveness of the teaching-learning process relies on the availability of diverse equipment within the educational environment or classroom. Teaching resources encompass the various facilities, equipment, and supplies employed by educators to facilitate the instruction of a particular subject.

According to Nikky (2010), the significance of teaching resources in the instruction of environmental activities can be summarized as follows. Teaching resources pertaining to the subject of environmental activities aid educators in effectively conveying concepts to learners, facilitating their long-term retention of said concepts. These resources also serve to enhance student motivation by fostering a heightened level of interest in the environment. Teaching resources play a crucial role in promoting effective comprehension among students while discouraging rote memorization. Additionally, they contribute to creating a dynamic and engaging classroom or learning environment. In the

realm of physical education instruction, educational materials are commonly denoted as physical education resources.

According to Ernst (2013), several primary obstacles to the implementation of nature play and environmental education in preschool settings were identified. These barriers encompassed limited access to natural environments, inadequate provision of suitable clothing for children, and concerns regarding safety and liability. Previous studies have indicated that socio-economic factors may exert influence on individuals' access to natural areas. In their comprehensive analysis, Strife and Downey (2012) conducted a thorough examination of numerous studies, leading them to assert that the available empirical evidence supports the notion that the experiences and opportunities for young individuals in relation to nature and green spaces are prone to disparities based on factors such as race, ethnicity, and socioeconomic status. According to Ernst (2012), early childhood educators who cater to children from higher socio-economic backgrounds tend to have increased opportunities for utilizing natural environments.

According to a study conducted by Moshi (2012) regarding the utilization of learning materials in the implementation of the competency-based curriculum, it was found that a significant number of schools faced challenges due to insufficient facilities and inadequate training of teachers. Consequently, the effective implementation of the competency-based curriculum in classrooms was hindered. The findings also indicated that teachers exhibited a deficiency in the necessary skills and knowledge, while the provision of textbooks and teachers' guides had been neglected. The authors of the book

lacked formal training and possessed a limited understanding of the competency-based curriculum. Due to their lack of sufficient knowledge regarding the competency-based curriculum, their capacity to produce high-quality books was restricted. According to Moshi (2012), educators exhibited reluctance in utilizing textbooks and other instructional resources associated with the competency-based approach due to the extensive time required for lesson preparation.

According to Makunja's (2016) study conducted in Tanzania, one of the key findings was that teachers faced challenges in implementing the competency-based curriculum. The study revealed that teachers lacked orientation through in-service programs or workshops, which hindered their preparedness for the implementation of the CBC. The perspectives expressed by the interviewees indicated that the insufficient training of teachers was impeding the successful implementation of the Competency-Based Curriculum (CBC). The teachers who were identified as critical stakeholders exhibited deficiencies in their knowledge, skills, and understanding pertaining to the implementation of effective teaching and learning strategies within the context of the competency-based curriculum.

2.2.2 Utilization of Instructional Resources for Teaching and learning Environmental Activities

Proper utilization of instructional materials enhances learning and ensures adequate participation on the part of the pupils. It may also help the teacher to teach a particular lesson more effectively or to solve a particular problem with ease. In this direction, Lyons (2012) outlines four ways by which instructional materials should be

utilized these ways: Be related to the topic of the lesson, be within the age and maturational level of the learners-bold and colourful areas at pre-school level, preview by the teacher before the actual lesson to ascertain that everything is in order, be accurate in content and acceptable in other placed for same lesson.

Ughamandu (2012) is also of the same view and had outlined six ways by which instructional materials should be utilized: Preview the material, Plan; previewing will enable the teacher to plan effectively the method of using the selected media, arrange the materials, prepare the class, presentation, and follow-up activities.

Empirical studies done in relation to resource utilization in education have revealed that essential facilities are not always available in schools. This inadequacy of teaching resources has been of serious concern to educators. According to Lyons (2012), education is a multifaceted process that relies on several factors, including students' intrinsic motivation, school resources, teachers' expertise, and the requirements of the curriculum itself. Resource utilisation refers to the method by which assets are managed and organised. Since the use of resources in education stimulates learning and motivates students, it yields positive learning outcomes (Meghir, 2012).

For young children's healthy development and growth, a wealth of educational tools is essential. Igaga (2017) argues that because young children are active and learn best via doing, a wide range of materials should be made available. It is recommended that educators, carers, and parents utilise resources found in their immediate surroundings.

Charts, magazines, models, picture books, and writing books are all great examples of educational resources. Children need access to a wide variety of resources to help them learn new information and develop their abilities, as emphasised by Freeman and Hatch (2015).

Santrock (2014) states that "developmentally appropriate, sufficient, and environmentally relevant teaching and learning materials in the child's socio-cultural spheres are central to constructive and productive learning for development in the cognitive, affective, and psychomotor domains."

Therefore, students will be able to transition from the preschool to the primary school level without any hiccups if teachers are able to acquire and efficiently use instructional resources. It is the responsibility of the pre-school teacher to transform the children's natural tendency towards less serious play into more serious acting during ECDE learning. Because psychologists have demonstrated that optimal learning requires a multi-sensory approach (Aurel, 2015), this can only be accomplished with appropriate instructional tools. Aggarwal (2012) agrees, saying that education should excite the student so that they want to learn and be physically active. Froebel (2013) stresses the importance of learning by doing, claiming that it is far more enriching and empowering than learning through the simple exchange of words.

The productivity of the child and our country, Kenya, will both benefit greatly from investments made in the formative years. In order to adequately prepare young children

for first grade, ECDE programmes must have access to a wide range of pedagogical materials and employ teachers who are both qualified and inspired. According to research conducted in Botswana between 2013 and 2015, pre-schoolers whose teachers had received enough training were more likely to keep their students enrolled in school. Bernard Van Leer Foundations (2012) found that similar outcomes occurred in Israel, Ireland, Colombia, Jamaica, and Trinidad.

2.3 Physical facilities available for teaching and learning environmental activities

The encouragement of communities, parents, and sponsors to engage in the development and maintenance of physical facilities within educational institutions should persist. This is due to the absence of adequate facilities, which hinders the learning process (Republic of Kenya, 2018).

According to the Department for International Development (DFID, 2017), there is a recognised significance attributed to school facilities in the context of providing high-quality education. The variation in school facilities can be observed as a contributing factor to disparities in academic performance. The physical infrastructure of educational institutions encompasses various facilities such as classrooms, lecture theatres, auditoriums, administrative buildings, libraries, laboratories, workshops, playgrounds, assembly halls, as well as specialised rooms like clinics, staff quarters, students' hostels, kitchen, cafeteria, and restroom facilities, among others. The author additionally contends that learning experiences are more beneficial when there is a sufficient quantity and quality of physical resources. They argue that unappealing school buildings,

overcrowded classrooms, the absence of a playground, and unattractive surroundings can all contribute to subpar academic performance.

Computer Assisted Instruction (CAI) and Computer Assisted Learning (CAL) are valuable educational tools that offer visual and interactive features, enhancing the effectiveness of teaching and learning. Alaku (2018) asserts that video plays a significant role in the facilitation of teaching and learning in the field of environmental education. When utilised in an effective manner, video content has the ability to generate interest among students and enhance their retention of factual information by providing a tangible connection to the subject matter being taught. The convenience of electronic communication facilitates the exchange of inquiries, responses, and dialogues between educators and learners, thereby fostering opportunities for collaborative engagement within a given academic programme. The significant advancements in information transfer rates, internet accessibility, and online content dissemination have provided educators and learners with an extensive array of resources that can be utilised across various biology subjects. The CAL (Computer-Assisted Learning) and CAI (Computer-Assisted Instruction) systems are distinct in their typology and scope of subject matter.

Raw (2013) defines a teaching guide as a booklet that is furnished to educators for the purpose of assistance or as a supplementary material. This resource offers comprehensive guidance to educators on all aspects related to the teaching and learning process. According to Raw (2003), audio-visual aids are utilised as teaching aids in the process of teaching and learning. It facilitates the processes of teaching and learning. The utilisation

of audiovisual aids. This tool has the potential to facilitate and promote educational endeavours, specifically teaching and learning activities. In addition, the utilisation of visual aids such as maps, graphs, and diagrams has been shown to contribute to a decrease in the rate of forgetting. The computer is utilised as an educational resource and functions as a facilitative instrument for the acquisition of knowledge. According to Faize and Dahan (2011), maps and charts are commonly employed in lectures and discussions to illustrate the interconnections between various elements, such as the relationships between different coloured clothes, among other examples. Another commonly used device in educational settings is the overhead projector. The device in question is capable of enlarging small transparencies for display on a larger surface, such as a board. The utilisation of an overhead projector enables students to engage in the process of reading, observing, responding, and comprehending textual content, graphs, images, or any other form of visual representation that is presented on transparent sheets.

Usman (2011) asserts that overhead projectors are increasingly prevalent and well-received, finding extensive application in conventional educational settings such as seminars and workshops. The range of instructional materials available is vast and depends on the teacher's level of creativity and resourcefulness. According to Fonseca and Conboy (2016), the physical conditions and organisational structure of educational institutions play a significant role in either facilitating or impeding the development of a culture of success. According to the Ministry of Education Science and Technology (MOEST, 2015), it is crucial to prioritise the provision of sufficient and suitable

educational facilities in order to facilitate the effective implementation of educational programmes.

The laboratory serves as an additional educational resource for environmental instruction, encompassing a designated space within a building or standalone structure. Its primary purpose is to facilitate the translation of theoretical concepts into practical applications through hands-on demonstrations. The laboratory experience provides students with the opportunity to apply theoretical concepts to real-world situations, thereby deepening their comprehension of the educational process. The purpose of this initiative is to facilitate convenient access and utilisation of the material resources stored in the laboratories for educational purposes. This includes not only practical classes, but also regular classroom instruction. Environmental education utilises the pedagogical approach of employing laboratory methods for instructional purposes. The laboratory method is a form of activity that can be conducted individually or in a group setting, employing a dual approach known as the exercise approach and the experimental approach (Azuka, 2015).

According to Okoli and Osuafor (2010), this approach provides students with the chance to cultivate scientific skills and attitudes, including objectivity, effective communication, inquisitiveness, hypothesis formulation, data analysis, critical thinking, meticulousness, receptiveness to new ideas, and the ability to draw meaningful conclusions from data. The effective development of scientific skills is contingent upon the efficient utilisation of laboratory resources.

2.4 Utilization of Physical Facilities for Teaching and Learning Environmental Activities

According to Chakraborty, Islam, Chowdhury, Bari, and Akhter (2011), the utilisation of resources is a multifaceted behavioural phenomenon that is inherently linked to the presence and calibre of said resources or services.

In Horny's (2014) work, the concept of utilisation is elucidated as the act of effectively employing the services that are readily accessible to an individual. According to Obi (2016), it can be observed from the National Policy on Education (NPE; 2014) that a key objective of education is to ensure the permanence of learning. According to his perspective, incorporating the use of physical facilities in the educational process is a reliable method for attaining this goal. When tangible objects or their symbolic representations are employed in educational instruction, students are afforded the opportunity to visually perceive, physically engage with, and actively interact with these instructional materials. Engaging with educational resources facilitates the retention of acquired knowledge, thereby mitigating the likelihood of forgetting.

According to Olagunju and Abiona (2018), resource utilisation refers to the management and organisation of resources. It was suggested that within an educational institution, the existing resources should be effectively utilised in a manner that allows for optimal functionality. According to Offorma (2010), a contributing factor to the underutilization of available materials by teachers in schools and colleges is their insufficient proficiency in operating said materials. The speaker underscored the significance of resource

materials, highlighting that their utility is contingent upon the teacher's interpretation and application.

According to Ebo, Nwajei, and Akara (2014), literature indicates that there exist environmental education teachers who lack interest in utilising physical facilities. According to their perspective, the current situation has had a detrimental impact on the quality of teaching and the overall production of education. The authors assert that in the current era of advanced technology and extensive knowledge, it is imperative for educators to possess the ability to adapt to the ever-evolving needs of their students and society as a whole.

A study conducted in Nigeria has identified the lack of a maintenance culture as a significant factor contributing to the non-utilization of physical facilities, equipment, and supplies in secondary schools. According to the findings of Orunaboka and Nwachukwu (2012), there exists a lack of concern among certain citizens of Nigeria regarding the maintenance of public properties that do not have a clear ownership. It has been suggested that in order to ensure the availability of equipment and supplies for teaching purposes, the teacher in charge should establish a culture of maintenance. According to Bucher and Krotee (2012), it is imperative to uphold a maintenance culture for physical facilities, equipment, and supplies, ensuring that they are consistently kept in a condition that allows them to be utilised effectively. It is imperative to establish regular procedures for the maintenance and upkeep of facilities, equipment, and supplies in order to ensure timely repairs and necessary interventions. It is imperative to conduct a thorough

inspection of all utilised equipment and supplies, followed by appropriate actions such as repair, replacement, or servicing, as deemed necessary.

2.4 Related Studies

Previous research has examined the correlation between teacher learning resources (TLR) and academic performance. For instance, Likoko, Mutsotso, and Nasongo (2013) conducted a study investigating the sufficiency of instructional materials and physical facilities, and their impact on the quality of teacher preparation in colleges located in Bungoma county. Additionally, Mbaria (2016) conducted a study exploring the association between learning resources and academic performance in secondary schools situated in Ndaragwa district. The aforementioned studies collectively demonstrate that the presence of teaching and learning resources is more prevalent in schools with higher academic performance compared to those with lower academic performance. Moreover, a notable disparity in resource availability exists between schools with higher and lower academic performance. Additionally, it should be noted that a majority of educational institutions encounter various challenges, including insufficient resources such as libraries and inadequate instructional materials. These factors have a detrimental impact on the overall quality of graduates that are produced.

According to Adan (2011), the implementation of the FDSE programme in Wajir presents significant challenges for head teachers. One major obstacle is the insufficient physical infrastructure in the majority of schools within the district. While textbooks are available, there is a pressing need for essential facilities such as classrooms, toilets, and

desks. It is recommended that a greater proportion of funds allocated to the Facilities Development and Support for Education (FDSE) be redirected towards the provision of chairs, laboratories, and other teaching aids to enhance the teaching and learning environment. According to the National Policy on Education (2012), the responsibility for the provision and utilisation of educational facilities lies with the stakeholders in the field of education. The Kenyan government facilitates the implementation of the national policy on education by creating a conducive environment. Parents play a significant role in the procurement of educational materials and the establishment of physical infrastructure within schools, primarily through their participation in Parents Teachers Association (PTA) initiatives. The implementation of the FDSE has posed challenges for the government in terms of providing Teaching and Learning Resources in schools.

A study conducted by Akinsanya (2010) aimed to examine the distinct distribution and utilisation of human resources in relation to students' academic performance in state-owned and federal schools. The findings of the study indicated that there was a significant lack of both material and human resources in these types of schools. Furthermore, even in cases where resources were available, they were not effectively utilised. Additionally, the research also uncovered that there was a deficiency in physical resources such as laboratories and libraries, which had a detrimental impact on the academic achievements of students. According to Oni (2015), the presence and standard of educational resources play a crucial role in ensuring the efficient functioning of educational institutions and promoting effective teaching and learning. Consequently, when these conditions are met, students are more likely to achieve higher levels of educational success.

According to Mapedrun (2012) and Oni (2015), it is evident that the presence and sufficiency of educational resources have a positive impact on academic performance. Chiriswa (2012) asserts that the presence of appropriate resources, including books, laboratories, library materials, and various visual and audio teaching aids, is crucial for facilitating effective teaching and learning. These resources play a significant role in improving academic performance in national examinations.

In a study conducted by Kamau (2018), the focus was on investigating the access and utilisation of instructional materials in the context of teaching and learning biology in secondary schools. The specific geographical area of interest was Dagoretti South Sub County, located in Nairobi. The research identified various resources that can be utilised for instructing biology in secondary educational institutions. These resources encompass biology textbooks, biology charts, laboratory equipment, as well as ICT animations and the incorporation of PowerPoint presentations. Textbooks are the prevailing educational materials employed in secondary schools. However, while certain schools have sufficient access to these teaching materials, the majority of schools have below-average levels of accessibility. Due to the high enrollment rates, many educational institutions face a shortage of sufficient teaching materials. The prevailing viewpoints expressed by the majority of interviewees indicate that schools lack a diverse range of teaching resources, particularly in the field of science.

In their study, Chemwei and Tuimur (2015) examined the availability and utilisation of instructional materials in the context of teaching conflict and conflict resolution in primary schools located in the Nandi North district of Kenya. The study revealed that the current training provided to teachers in the area of Conflict and Conflict Resolution is insufficient in terms of equipping them with the necessary skills to develop appropriate instructional materials and utilise them effectively during the teaching and learning process. Furthermore, the instructional materials provided in the selected schools were found to be inadequate.

2.5 Chapter Summary

This chapter provided an overview of previous research conducted in the field of study. The researcher conducted a comprehensive review of scholarly literature, including textbooks, journals, seminar papers, thesis reports, and web publications, to investigate the availability and utilization of resources in the context of teaching and learning environmental activities in Early Childhood Development.

From the literature reviewed, it's notable that numerous studies have been done on utilization and availability of instructional and physical facilities in schools. However, most researchers were majored in secondary schools, this study focused on primary schools and specifically ECDEs centers. The literature was also general to instructional and physical facilities used in schools, this study tend to focus on specifically environmental activities subject. Moreover, majority of the studies in literature were international and in Sub-Saharan Africa, there were limited local studies. On one only similar study was done on the challenges teachers faced in implementing the

competency-based curriculum in Tanzania (Makunja, 2016). However this study was not specific to a specific subject i.e Environmental Activities Subject. This study therefore sought to fill this gap and study on the availability and utilization of resources in teaching and learning of Environmental Activities in Early Childhood Development and Education (ECDE) Centres in Uasin Gishu County, Kenya.

The subsequent chapter will provide an exposition on the research design and methodology that will be employed throughout the course of the study.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction to the Study

This chapter provides an overview of the research design and research methodology employed in the study. The description encompasses various components, including the area of study, the target population, the sampling and sampling procedures, the research instruments employed, the validity and reliability of said instruments, the process of data collection, ethical considerations, and the field experience involved.

3.2 Research Methodology

Research methodology provides a thorough foundation for study design (Digolo, 2009). A strategic framework that links methods to results. This study investigated the accessibility and use of resources in the instruction and learning of Environmental activities in Early Childhood Development and Education (ECDE) Centres in Uasin Gishu County. The researcher's assumptions or beliefs about the research objectives determined the methodology's selection and appropriateness. These ideas reflected the researcher's ontological, epistemological, and methodological views about society and social science (Digolo, 2009).

The epistemological inquiry examines the availability and use of resources for environmental education in Early Childhood Development and Education (ECDE) Centres in Uasin Gishu County, Kenya. This study examined epistemological and ontological underpinnings to answer its research issues. This survey examined respondents' understanding of resource availability and use in teaching and learning environmental activities in Early Childhood Development and Education. These events

were caused by social structural forces that shaped behaviour. The first step in understanding the strategic plan implementation process in this study was to identify these processes in their contexts.

Thus, the researcher's viewpoint and education shaped the research's methodology, design, and implementation, combining quantitative and qualitative methods. The researcher introduced the two notions separately to overcome this problem. The researcher then showed their convergence and explained their practical uses. The postpositivist assumptions have long been the standard research framework, with quantitative research applying more than qualitative research. This approach is called the scientific method or environmental research. This method is called positivist or postpositivist research, empirical science, or postpositivism (Digolo, 2008).

Deterministic post-positivists believe causes will likely determine consequences or outcomes. Thus, post positivists focus on identifying and assessing causal elements that affect outcomes in experimental contexts. This study examined how resource availability and use affect environmental education in Early Childhood Development and Education (ECDE) Centres in Uasin Gishu County, Kenya. The reductionist post-positivist perspective simplifies complicated ideas into a small set for analysis. This reductionist approach is seen in the variables that underpin hypotheses and research questions (Digolo, 2008). The study emphasizes participant viewpoints on the subject under inquiry. To help people collectively interpret a situation, the questions are purposefully wide and comprehensive. This usually happens through conversations.

Open-ended inquiry works best when researchers see and study people's verbal and behavioral replies in their natural contexts. Social and historical forces often shape subjective meanings. The present study used a specific strategy to get input on environmental education in Early Childhood Development and Education (ECDE) Centers in Uasin Gishu County, Kenya. The answers are determined by interpersonal interactions (social constructivism) and historical and cultural norms in individuals' experiences.

Constructivist scholars study individual interaction dynamics. The researchers also study the places in which people live and work to understand the historical and cultural factors that impact their experiences (Digolo, 2008). The researcher's main goal is to understand and analyze people's worldviews. Researchers use inductive reasoning to develop a theory or pattern of significance instead of starting with a theoretical framework like postpositivism. The researcher used a framework to administer and interpret qualitative data on resource accessibility and use in environmental education in Uasin Gishu County Early Childhood Development and Education (ECDE) Centres.

3.3 Research Design

The present study employed a descriptive survey research design, utilising a mixed methods approach. The mixed method approach encompasses the utilisation of both qualitative and quantitative research methodologies. A survey research refers to a type of study where individuals are required to provide quantifiable information through self-reporting methods such as interviews or questionnaires (Kothari, 2008; Orodho, 2003; Mugenda 2008). The process entails the collection of factual data and the acquisition of

relevant and accurate information pertaining to the present state of a phenomenon. Additionally, it seeks to derive potential conclusions based on the discovered facts, whenever feasible. Descriptive methods are commonly employed to gather data that is valuable for assessing current practises and facilitating decision-making. The utilisation of this method was deemed suitable due to its ability to provide a comprehensive account of the availability and utilisation of resources in the instruction and acquisition of Environmental activities within Early Childhood Development and Education (ECDE) Centres located in Uasin Gishu County.

3.4 Study Area

This study encompassed early childhood development and education (ECDE) centres situated within Uasin-Gishu County, which is located in the Rift Valley Province of Kenya. Situated in the southern region of the Cherangani Hills, the local topography exhibits a range of elevations, with the airport area measuring approximately 2100 metres above sea level and nearby regions surpassing 2700 metres (equivalent to 7000-9000 feet). The purpose of selecting this area was to investigate the accessibility and utilisation of resources in the context of teaching and learning Environmental activities. The selection of the area was based on its direct relevance to the research problem. Furthermore, there is a lack of comparable empirical research conducted within the specific geographical region under investigation. Hence, it is widely posited that the study provides a comprehensive and diverse perspective on the issue being investigated. The selection of the area was prompted by the comparatively lower academic performance of children in Science, specifically in environmental activities as outlined in the CBC (Competency-Based Curriculum) and ECDE (Early Childhood Development

Education) syllabus, in comparison to their performance in other subjects. This facilitated the researcher in acquiring an equitable portrayal of the attributes and circumstances that are likely to provide an accurate depiction of the variables being investigated.

3.5 Target population

A population refers to the complete assemblage of individuals, events, or objects that share identifiable and observable characteristics. The target population refers to the specific population that a researcher aims to apply the findings of a study to, as defined by Mugenda and Mugenda (2003). The study's target population consisted of head teachers and teachers from all public Early Childhood Development and Education (ECDE) centres in the six sub-counties of Uasin Gishu County, located in the Rift Valley province of Kenya (MoE Uasingishu County, 2018). This was due to the possession of valuable information pertinent to this study.

3.6 Sampling Procedures and Sample size

Sampling refers to the systematic procedure of choosing a subset of cases from a larger population with the intention of making inferences about the entire population (Kothari, 2005). A sample refers to a relatively small subset of a larger population, selected with the intention of being representative of the entire population. All assertions pertaining to the sample must hold true for the entire population. In order to ensure the attainment of a representative sample, the researcher employed a stratification technique by dividing the ECDE centers into six distinct sub-counties. The schools were specifically selected as they were the only schools which had implemented CBC in their curriculum. The schools

in Uasin Gishu County were categorised into sub-counties, namely Ainabkoi, Moiben, Kapseret, Kesses, Turbo, and Soi (See Table 3.1).

Simple random sampling technique was employed to select a representative sample of 25 schools accounting for 50% of the population (Kerlinger, 2003). One of the benefits of employing simple random sampling is its ability to guarantee the representation of subgroups within the sample, which would otherwise be excluded entirely by other sampling techniques due to their limited presence in the population. The combination of randomization and categorization in this study facilitated the implementation of both quantitative and qualitative research methodologies (Cohen, 2003).

Each sub-county's ECDE center was assigned a numerical value, and these values were then distributed among six baskets based on their respective sub-counties. A numerical value was selected in a non-duplicative manner through a random process. The selected numerical value corresponded to the specific pre-school facility where the research investigation was conducted. The utilization of simple random sampling facilitated the equitable opportunity for each school to be chosen. The methodology employed in this study aimed to ensure that all schools were provided with equitable opportunities for inclusion in the sample.

The sampled population is considered to be representative of 50% of the target population, as indicated by Kerlinger (2003), who asserts that a sample size of 50% is sufficient for conducting a survey study.

Purposive sampling was done on the head teachers from the selected schools. This study intentionally included one head teacher from each specific school. Therefore the sample size for head-teachers was 25.

Purposive sampling was also done on the ECDE teachers. According to the study, there were a maximum of two ECDE teachers for environmental activities subject in each school. Therefore the researcher purposively sampled two teachers from each selected school in the county. The total sample size for teachers therefore became 50.

This study therefore consisted of a sample size consisting of 25 head teachers and 50 teachers. Hence, the sample sizes consist of a combined total of 75 participants as indicated in Table 3.1.

Table 3.1: Sampling Frame

<i>Sub-County</i>	<i>Total no. of schools</i>	<i>Schools Sampled</i>	<i>Head teachers sampled</i>	<i>Teachers sampled</i>
Ainabkoi	4	2	2	4
Moiben	10	5	5	10
Kapseret	12	6	6	12
Kesses	4	2	2	4
Turbo	6	3	3	6
Soy	14	7	7	14
Total	50	25	25	50

The results derived from random sampling are considered reliable due to their probabilistic nature, highlighting the advantages of random sampling design over deliberate sampling design. Random sampling is a technique that upholds the principle of Statistical Regularity, which posits that if a sample is chosen randomly, it will possess the same composition and characteristics as the entire population on average. Random sampling was regarded as the optimal method for selecting a representative sample due to this rationale (Kothari, 2008).

3.7 Research Instruments

Kombo and Tromp (2006) assert that research instruments commonly employed in social science include questionnaires, interview schedules, and observational forms. The data collection instruments utilised in this study encompassed questionnaires, lesson plan observation and observation checklist.

3.7.1 Teachers'/Head-teachers' Questionnaire

The primary instrument employed for data collection was a questionnaire administered to teachers and head-teachers. Kothari (2008) asserts that questionnaires are typically devoid of interview bias due to the fact that respondents provide their answers in their own words. The participants are provided with sufficient time to provide carefully considered responses. Questionnaires offer the advantage of time efficiency, as they allow for the collection of information from a significantly large sample. The selection of the questionnaire was thus predicated on Kothari's claim that it is suitable for respondents who are literate, educated, and cooperative. In this particular study, all participants were deemed to fulfil these criteria.

The development of the questionnaires was guided by the study's objectives and the variables identified in the literature review pertaining to the availability and utilisation of resources in the teaching of Environmental activities. The data provided facilitated the description of the findings through the utilisation of the questionnaire. The teacher/headteacher questionnaire was partitioned into five distinct sections. In Section A, data was gathered pertaining to the background information of teachers. Section B was dedicated to the collection of information regarding the accessibility of instructional resources. Section C was designed to elicit data on the utilisation of the aforementioned

instructional resources. Section D aimed to gather information regarding the availability of physical facilities. Lastly, Section E was dedicated to eliciting data on the utilisation of the available physical facilities. This survey consisted of both structured and unstructured items. The thesis includes the questionnaire in its entirety in Appendix I and Appendix II.

3.7.2 Observation Checklist

Data on the availability of physical and instructional resources for the teaching and learning of Environmental Activities was collected using an observation checklist. The aforementioned task was accomplished through the process of observing tangible materials and instructional tools employed in the facilitation and acquisition of knowledge pertaining to Environmental activities. The observation checklist is included in this thesis as Appendix III.

In addition to employing an observation checklist, the researcher also gathered data through the utilisation of the classroom/lesson observation method. The significance of this was its ability to provide a detailed account of the specific actions carried out by both educators and students during environmental activities. The thesis includes Appendix IV, which contains a copy of the lesson observation guide.

3.8 Validity and Reliability of the Research Instruments

3.8.1 Validity of the Research Instruments

Validity refers to the degree of accuracy and meaningfulness of inferences that are derived from research findings (Mugenda & Mugenda, 2003). Abagi (2005) posited that

the enhancement of content validity in an instrument can be achieved through the utilisation of expert judgement.

To ensure consistency and alignment with the research objectives, the researcher conducted an assessment of the validity of the research instruments. To assess the content validity of the instruments, the researcher devised dimensions and elements that encompassed sufficient coverage in accordance with the objectives of the studies. Face validity refers to the extent to which the items designed to assess a particular concept appear, at first glance, to accurately measure that concept. The researcher conducted observations in order to ascertain that the instruments utilised in the study adequately encompassed the concepts being investigated. In order to establish content validity, the questionnaire utilised in this study was meticulously crafted, developed, and underwent comprehensive evaluation and deliberation with colleagues, supervisors, and other experts in the realms of research, curriculum, instruction, and educational media.

3.8.2 Reliability of Research Instruments

According to Mugenda and Mugenda (2003), reliability refers to the extent to which a research instrument consistently produces the same results or data when used repeatedly. To evaluate the dependability of the instruments, a test-retest methodology was employed. The measurement instrument was consistently administered to improve the reliability of the instrument.

A pilot study was conducted in ECDE (Early Childhood Development and Education) centres located in Kitale Municipality, which is situated in Transzoia County, with the aim of determining the reliability of the instruments used. The sample comprised six teachers, selected randomly from a pool of three teachers. The selection of Kitale

Municipality was based on its possession of schools that exhibit comparable characteristics and learning environments to those found in Uasin Gishu County. The identical examination was conducted on two separate occasions with a time gap of 14 days. The results were utilised to assess the reliability of the findings. The pilot study facilitated the evaluation of the questionnaire items' clarity, allowing for the identification and subsequent modification of inadequate or ambiguous items. This process aimed to enhance the quality of the research instrument and consequently enhance its reliability. The researchers administered the instruments and subsequently computed Cronbach's Coefficient Alpha for the questionnaire in order to assess the reliability of the research instrument. According to Fraenkel and Wallen (2000), a reliability coefficient equal to or greater than 0.7 was considered indicative of the internal reliability of the instruments. The reason for utilising Cronbach's Coefficient Alpha to assess the reliability of Likert-type questions is due to its ability to aggregate all the items and provide guidance on which item should be excluded if it fails to accurately measure its intended construct (Obanji, 2008). The uniformity of responses across the entire questionnaire suggests that it is both straightforward and reliable. The instrument underwent a thorough examination to identify and rectify various typographical errors and omissions. These necessary corrections have ensured that the instrument is now suitable for utilisation in the primary study. In order to assess the instrument's reliability, a reliability test was conducted on the questionnaire to ascertain the consistency of the measuring instrument's results across multiple administrations. The Cronbach's Coefficient Alpha was determined to be 0.881 based on the obtained results, indicating a high level of reliability for the research instruments.

3.9 Data Collection Procedures

As stated by Kombo and Tromp (2006), it is necessary for a researcher to obtain a research permit prior to commencing the study. The researcher requested an introductory letter from the School of Education at Moi University in order to facilitate the research endeavour. The correspondence was employed to obtain authorization from the National Council of Science and Technology for the purpose of gathering data from the field. Following the acquisition of the necessary permit, the researcher proceeded to request authorization from the County Commissioner and the Uasin Gishu County Education Officer in order to carry out the study. Subsequently, the researcher initiated communication with the head teachers of the designated schools, establishing agreements with the heads of Departments regarding the administration of the research instruments. The questionnaires were distributed to the teachers. The questionnaires were subsequently gathered following a period of seven days. The utilisation of this particular approach for the distribution of the questionnaires was favoured due to its ability to yield a significant proportion of the research instruments. The researcher additionally examined the presence and sufficiency of instructional materials and physical infrastructure in the educational process of environmental activities within primary schools.

3.10 Ethical Considerations

Ethical considerations pertain to the researcher's responsibility in upholding ethical safeguards. In accordance with the guidelines set forth by UNESCO (2007), it is imperative for researchers to prioritise the principles of respect, privacy, and protection from both physical and psychological harm for the participants involved in their study.

Consequently, the researcher took measures to ensure that every participant possessed a comprehensive understanding of the study's objectives and purpose. The participants were provided with comprehensive and adequate contextual information upon which they could make informed decisions regarding their participation in the research. The researcher provided a detailed and specific outline of the information needed from each participant, while also ensuring the confidentiality of the provided information. Participants were instructed to refrain from including their personal names or the names of their respective schools on the questionnaires in order to maintain confidentiality.

3.11 Data Analysis Procedures

The purpose of conducting data processing is to preprocess raw data in order to facilitate subsequent statistical analysis and presentation. Upon completion of data collection, the researcher proceeded with the process of data cleaning. This entailed the identification and rectification of incomplete or inaccurate responses, with the aim of enhancing the overall quality of the collected data. Following the completion of data cleaning procedures, the dataset underwent coding and subsequent entry into the computer system for analysis employing the Statistical Package for Social Sciences (SPSS) version 20.0. The study produced data of both qualitative and quantitative nature. The qualitative data was subjected to a qualitative analysis through content analysis, which involved examining the meanings and implications derived from the information provided by the respondents and documented data.

According to Grey (2004), qualitative data offers comprehensive and detailed descriptions and explanations that illustrate the sequential progression of events, often resulting in serendipitous discoveries. In contrast, the analysis of quantitative data

involved the utilisation of diverse statistical techniques, such as measures of central tendency and dispersion. Quantitative data was analysed using basic descriptive statistics. Following a thorough analysis, the data was presented in a tabular format, utilising frequencies and percentages. The findings were displayed through the utilisation of frequency distribution tables, pie charts, and graphs.

3.12 Chapter Summary

The current chapter focused on the research design and methodology employed in the study. The chapter primarily addresses several key topics, including the study area, sampling procedures, sample selection, research instruments, and schemes of analysis for the set of questionnaire and data collection procedures. The subsequent section entails an examination of the presentation and interpretation of research findings

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

The main purpose of this study was to determine the availability and utilization of instructional resources in teaching and learning of Environmental activities in Early Childhood Development and Education (ECDE) Centres in Uasin Gishu County, Kenya.

The specific objectives were:

1. To find out the instructional resources available in the teaching and learning of Environmental activities in the ECDE Centres in Uasin Gishu County.
2. To establish the utilization of available instructional resources in the teaching and learning of Environmental activities in ECDE Centres.
3. To find out the physical facilities available in the teaching and learning of Environmental activities in the ECDE Centres in Uasin Gishu County.
4. To establish the utilization of available physical facilities in the teaching and learning of Environmental activities in the ECDE Centres.

This chapter focused on presentation, analysis and interpretation of the data collected from the field. The data analyzed and presented was based on the responses to the items in the administered Questionnaires as well as an observation.

The descriptive statistics was used to analyze the data and summarize them using frequency tables. The researcher sampled 50 teachers and 25 head teachers who were provided with the questionnaires. The overall response rate was over 81.3%. These response rates were considered very good when compared to the recommended response

rates to verify consistency of measurements required for analysis (over 50%, Kothari, 2005).

4.2 Background of respondents

In order to establish the nature of the respondents sampled, the study established the background information of the respondents. Among the teachers, the information included: gender, age and highest levels of education.

4.2.1 Gender

The study sought to assess the gender of the different respondents. It is important to study such gender distribution since it helps in finding out the roles they play in the children's learning. The findings on gender distribution of the respondents is presented in Table 4.1. Female teachers were higher in proportion among the sampled respondents. However, majority of the head teachers were male constituting up to 85% of the total respondents.

Table 4.1: Distribution of gender of the respondents

Gender	Percent	
	Male	Female
Teachers (n = 40)	42.9	57.1
Head teachers (n = 21)	85.0	15.0

4.2.2 Age distribution among respondents

Age distribution among the respondents sampled in this study is provided in Table 4.2. In general, most teachers sampled were aged between 26 to 55 years (92.4%) even though majority of the head teachers were aged 36-55 years. From the study the teachers and head teachers were young and energetic to implement environmental activities since

majorities are below the age of fifty five.

Table 4.2: Age distribution among respondents

Age	Percent		
	26-35	36-55	> 55
Teachers (n = 40)	27.9	64.5	7.6
Head teachers (n = 21)	-	80.0	20.0

4.2.2 Highest level of education among teachers and head teachers

Professional qualifications of the teachers are deemed important to prepare the teachers to handle the children. Therefore the professional qualifications of the teachers and head teachers were the only variables captured in this study by the researcher. The professional qualifications of the respondents are provided on Table 4.3. It was established that majority of the primary school teachers had ECDE certificate (57.5%) followed by P1 training (15.0%) and then Diploma in ECDE (7.5%) while the lowest number of teachers had bachelors degree (2.5%). On the other hand, most of the head teachers had diploma in education (40.0%) followed by head teachers attaining diploma in ECDE (25%), and then certificate in ECDE (15%). The ECDE courses and PI courses seem to be different entities as P1 course given to teachers prepares them to teach subject areas while the ECDE courses prepare teachers to teach activity areas. This is supported by MoEST (2000) which highlighted that the lower primary school activity areas are structured in subjects and are formal while in pre-primary activity areas are used instead.

Table 4.3: Highest level of education among teachers and head teachers

Qualifications	Teachers		Head teachers	
	Frequency	Percent	Frequency	Percent
Untrained	3	7.5	0	0
ECDE certificate	23	57.5	3	15
P1	6	15.0	2	10
Diploma (ECDE)	3	7.5	5	25
Diploma (Education)	4	10.0	7	40
Bachelors degree	1	2.5	2	10
Total	40	100	21	100

From the study the study a good number of pre-school teachers are trained in certificate, with head teachers having diploma in Early Childhood Education. The study revealed that training got by teachers enable them to have good qualities of communication in handling pupils, parents and enhanced skills in preparation of lesson plans and scheme of work.

4.2.4 Working Experience

The study aimed at investigating the working experience of the respondents. The findings of the study were then presented in Table 4.4.

Table 4.4 Working Experience

<i>Experience in years</i>	<i>Frequency</i>	<i>Percentage</i>
0-6 years	30	51
7-12 years	18	29
13-18 years	10	16
Over 19 Years	3	4

The findings of the study were that 51% (30/60) of the respondents had a working experience between 0-6 years, another 29% (17/60) of the respondents had a working experience between 7-12 years. Another 16% (10/60) of the respondents had a working experience between 13-18 years and finally, 4% (3/60) of the respondents had working experience of over 19 years.

This could imply that the teachers had enough experience in teaching environmental activities and therefore were in a position to answer what was required of this research.

4.3 Instructional Resources Available For Teaching and Learning Environmental Activities

The first objective of the study was to find out the instructional resources available in the teaching and learning of Environmental activities in the ECDE Centres in Uasin Gishu County. To meet this objective, the questionnaires and observation check lists was used together with the teachers and head teacher views.

Table 4.5 Instructional Resources

Resource	Available		Not available	
	Frequency	Percentage	Frequency	Percentage
School based instructional resources				
Environmental text books	44	72.1	17	27.9
Displays and exhibits of collections	39	63.9	22	36.1
School garden for growing plants	56	91.8	5	8.2
Classroom Museums	16	26.2	45	73.8
Fish ponds	17	27.9	44	72.1
Community Based Instructional Resources	Available		Not available	
City/town museum, reading center,	11	18	50	82
Art gallery/hospital/gym	61	100	0	0
Market	61	100	0	0
Nature trips based Resource	Available		Not Available	
Hills/mountains	44	72.1	17	27.9
Mining areas/manufacturing companies	37	60.7	24	39.3
Rivers	43	70.5	18	29.5
Valleys	48	78.7	13	21.3
Green fields	50	82	11	18
Forests	49	80.3	12	19.7
Agricultural farms	55	90.2	6	9.8
Human Resources	Available		Not available	
Chiefs offices	49	80.3	12	19.7
Members of County assemblies	55	90.2	6	9.8
Businessmen	43	70.5	18	29.5
Agriculturalists	45	73.8	16	26.2
Historians	43	70.5	18	29.5

4.3.1 School Based Instructional Resources

School based instructional resources are resources which are readily available within the school. The study sought to assess school based instructional resources

Table 4.5 shows that most of the teachers noted that there was 72.1% availability of environmental text books in the schools. 63.9% agreed that there were displays and exhibits of collections for teaching and learning environmental activities, 91.8% had school garden for growing plants while very few 26.2% and 26.2% only had museums and fish ponds for teaching and learning environmental activities in the schools.

4.3.2 Community based instructional resources

Community based instructional resources are resources which can be found within the community for teaching and learning environmental activities.

Table 4.5 depicts that all schools had at least art gallery, hospital and a gym for teaching and learning environmental activities within the school community. Market was also reported to be available for the schools. However only 18% of the teachers could access a city/town museum or a reading center for teaching and learning environmental activities in schools within Uasin Gishu County.

4.3.3 Nature trips based instructional resources

These are instructional resources which require the pupils to take a nature trip to get accessibility to them to teach and learn environmental activities. Table 4.5 shows that nature trips based instructional resources are available for their schools. For instance, the study revealed that 72.1% of the respondents noted that hills/mountains for teaching and learning environmental activities were available while only 27.9% did not have hills/mountains near to their schools which can help ECDE pupils and teachers learn and teach environmental activities. Mining areas/manufacturing farms was identified by 60.7% of the teachers as available in the area, rivers, valleys, green fields and forests was available with agreement of 70.5%, 78.7%, 82% and 80.3% respectively.

Agricultural farms for teaching and learning environmental activities was identified by 55 (90.2%) of the respondents. It was therefore evident that nature trips based instructional resources were readily available for teaching and learning environmental activities, however, few schools were not able to access these resources.

4.3.4 Human Resources

Human resources are resources which help in the development of ECDE children with environmental activities subject /environmental activities. The study sought to assess the availability of human resources as a resource of teaching and learning environmental activities in schools within Uasin Gishu County. Table 4.5 presents the findings

From the findings it can be noted human resources as an instructional resource for teaching and learning environmental activities was available in most of the schools in Uasin Gishu County. 80.3% of respondents noted that chiefs were available, 90.2% agreed that the members of County assemblies were available, businessmen were also available 70.5%, agriculturalists 73.8% and historians 70.5% were available for teaching and learning environmental activities for schools in the County.

4.4 Utilization of the Available Instructional Resources in Teaching and Learning Environmental Activities

The utilisation of instructional materials affords learners the opportunity to engage their senses of touch, smell, or taste during the teaching and learning process. Various types of relevant instructional materials can be utilised to impart knowledge and skills to students. The utilisation of instructional materials plays a vital role in enhancing the overall quality of the educational experiences of early childhood development and education (ECDE) level students.

Table 4.6 Utilization of Instructional Resources

School based resources	Descriptive	Highly Utilized	Utilized	Not utilized
Environmental text books	Frequency	5	39	17
	Percentage	8.2	63.9	27.9
Displays and exhibits of collections	Frequency	33	0	28
	Percentage	54.1	0	45.9
School garden	Frequency	49	12	0
	Percentage	80.3	19.7	0
Museum	Frequency	0	11	50
	Percentage	0	18	82
Fish ponds	Frequency	6	11	44
	Percentage	9.8	18	72.1
Community Based	Descriptive	Highly utilized	Utilized	Not utilized
City/town museum, reading center	percentage	-	18%	0%
Art gallery/hospital, gym	Percentage	63%	17%	20%
Nature trips based instructional resources	Descriptive	Highly utilized	Utilized	Not utilized
Hills/mountains	Frequency	10	33	18
	Percentage	16.4	54.1	29.5
Mining areas/manufacturing companies	Frequency	5	39	17
	Percentage	8.2	63.9	29.9
Rivers	Frequency	21	22	18
	Percentage	34.4	36.1	29.5
Valleys	Frequency	26	29	6
	Percentage	42.6	47.5	9.8
Green fields	Frequency	21	21	19
	Percentage	34.4	34.4	31.1
Forests	Frequency	27	34	0
	Percentage	44.3	55.7	0
Agricultural farms	Frequency	15	27	19
	Percentage	24.6	44.3	31.1
Human Resources	Descriptive	Highly utilized	Utilized	Not utilized
Chiefs	Frequency	21	29	11
	Percentage	34.4	47.5	18
Members of County assemblies	Frequency	10	27	24
	Percentage	16.4	44.3	39.3
Businessmen	Frequency	18	35	5
	Percentage	29.5	62.3	8.2
Agriculturalists	Frequency	27	22	12
	Percentage	44.3	36.1	19.7
Historians	Frequency	17	23	21
	Percentage	27.9	37.7	34.4

4.4.1 Utilization of School Based Instructional Resources

The study sought to assess the level of utilization of school based instructional resources for teaching and learning environmental activities. The teachers were asked to state the extent to which the resources are utilized. The findings are presented in table 4.6;

The study revealed highest utilization of school based instructional resources on the school garden 80.3%. displays and exhibits of collections was also highly utilized at 54.1% while 45.9% did not utilize the resource, fish ponds and museums were rarely utilized, the level of utilization was low on museum 18% and fish ponds at 9.6%. This could be attributed by the fact that these resources were not available in majority of the schools under the study.

4.4.2 Utilization of Community based instructional resources in teaching and learning environmental activities

Utilization of community based instructional based resources in teaching and learning of environmental activities was assessed. This was categorized into city/town museum, reading center, art gallery, hospital, gym and market. These resources are important in teaching and learning environmental activities. The table depicts the findings

The findings showed that market was highly utilized in teaching and learning of environmental activities, art gallery, hospital and gym was also highly utilized at 63% of the respondents showing utilization rate, however city/town museum, reading centered was not utilized, the extent of utilization was indicated by 18% of the respondents which was very low.

4.4.3 Utilization of Nature Trips based instructional resources

Nature trips based instructional resources utilization is the use of nearby natural spaces to support academic achievement. The tables indicates the findings on the utilization of nature trips based instructional resources in teaching and learning of environmental activities;

The findings indicated that 16.4% of the respondents agreed that hills and mountains were highly utilized by the schools under the study in teaching and learning environmental activities, 54.1% agreed that they utilize while 29.5% noted that they do not utilize this resource.

Mining areas/manufacturing companies was agreed by 63.9% of the respondents that it was utilized, 8.2% noted that it was highly utilized in their schools, however 29.9% of the respondents said that the resource is not utilized in their respective schools in teaching and learning of environmental activities.

Further findings showed that rivers were highly utilized, this was agreed by 34.4% of the respondents, 36.1%, agreed that the resource is utilized while 29.5% of the respondents noted that the resource is never used in their school in teaching and learning of environmental activities.

Valleys were noted to be highly utilized by 42.6% of the respondents, 47.5% agreed that it is utilized in their schools while 9.6% of the respondents noted that valleys were not utilized in their schools in teaching and learning of environmental activities. Green field showed 34.4% level of high utilization and another 34.4% of intermediate utilization; however 31.1% noted that they did not utilize green fields.

The findings also revealed that forests were highly utilized by 44.3% of the respondents, 55.7% utilized the forest resource. There was no school which did not utilize the forest resource in teaching and learning of environmental activities in their schools. Agricultural firms also showed high utilization by 24.6% of the respondents, 44.3% agreed that it is utilized while 31.1% noted that it was not utilized in their schools.

4.4.4 Utilization of Human Resources in Teaching and Learning of Environmental activities

The study showed that 34.4% of the respondents agreed that chiefs were highly utilized in teaching and learning of environmental activities in schools within Uasin Gishu County, 47.5% emphasized that they are utilized, 18% noted that they are not utilized.

The results also indicated that members of the county assembly were highly utilized 16.4%, 44.3% agreed that they are utilized and 39.3% agreed that MCAs are never utilized in their schools in learning and teaching environmental activities.

Businessmen were also noted to be highly utilized by 29.5% of the respondents, 62.3% agreed that businessmen are utilized while 8.2% of the respondents noted that businessmen were not utilized in teaching and learning environmental activities/environmental studies in schools in Uasin Gishu County.

Further findings revealed that historians were highly utilized by 27.9% of the respondents, 37.7% noted that they utilize the resource while 34.4% said that they do not utilize historians in teaching and learning of environmental activities in ECDE.

The results align with the research conducted by Bolstad (2014), which examined the teaching practises in environmental education. The study revealed that despite the integration of environmental education into various subject areas, teachers refrain from

teaching it due to a lack of resources dedicated to this specific domain of education. While Makundi (2010) provides support for this argument, she additionally attributes this situation to the pedagogical approaches and methodologies employed in instruction. The author highlights that the teaching and learning materials employed primarily focused on promoting awareness. Consequently, individuals may possess knowledge or consciousness regarding a certain matter, yet fail to engage in any corresponding behavioural response.

4.5 Physical Facilities Available In The Teaching And Learning Of Environmental activities

The quality and standards of education are significantly influenced by the physical facilities, which in turn impact the teaching and learning process. Physical facilities, in the context of education, refer to tangible resources such as objects, individuals, or environmental elements that have the potential to influence or facilitate learning activities. The objective of this study is to determine the accessibility of physical infrastructure utilised for the instruction and acquisition of environmental activities among pupils in Early Childhood Development and Education (ECDE) settings; physical facilities are categorized into four items namely; collections, replicas, living things and devices. The findings are presented in subsequent pages;

Table 4.7 Physical Facilities

Collections	Descriptive	Available	Not available	Total
Shells	Frequency	44	17	61
	Percentage	72.2	27.9	100
Gems	Frequency	39	22	61
	Percentage	63.9	36.1	100
Minerals	Frequency	17	44	61
	Percentage	27.9	72.1	100
Clippings	Frequency	17	44	61
	Percentage	27.9	72.1	100
Living things	Available		Not Available	
	Frequency	Percentage	Frequency	Percentage
Live pets	34	55.7	27	44.3
Kinds of plants species	32	52.5	29	47.5
Small animals/insects	28	45.9	33	54.1

4.5.1 Collections

The study assessed collections as a category of physical facilities which facilitate the teaching and learning of environmental activities.

The study revealed that majority 72.2% of the respondents agreed that shells are available in the schools for teaching and learning environmental activities, while 27.9% noted that shells were not available. Gems was also reported to be available by 63.9% of the

respondents. However minerals and clippings were not available in majority of the schools under the study.

4.5.2 Replicas

Replicas are reproductions of art or work to represent something. Replicas are features which are best used in teaching and learning environmental activities. The study assessed the availability of replicas in schools in Uasin Gishu County for teaching and learning environmental activities.

The study revealed that Globe was available in many schools for teaching and learning environmental activities as it was reported by majority 70.5% of the respondents however, dioramas, models and miniatures was reported by most respondents as not available in their schools.

4.5.3 Living things

Living things serve as a major role in environmental activities in doing experiments and learning species of animals and plants. This study sought to assess the availability of living things in the schools for teaching and learning environmental activities.

Results on availability of living things showed that majority 55.7% of the schools had live pets in their schools while 44.3% of the schools did not have. Further findings showed that 52.5% of the respondents agreed that there were different kinds of plant species while few others had small animals/insects 45.9% in their schools for teaching and learning environmental activities.

4.5.4 Devices

Devices were categorized into measuring instruments and other simple machines which are used in teaching and learning environmental activities. The study sought to assess the availability of devices in teaching and learning environmental activities and the findings are indicated in figure 4.1 shows availability of devices for teaching and learning environmental activities. This was reported by 70.5% and 75.4% of the respondents on measuring instruments and simple machines respectively.

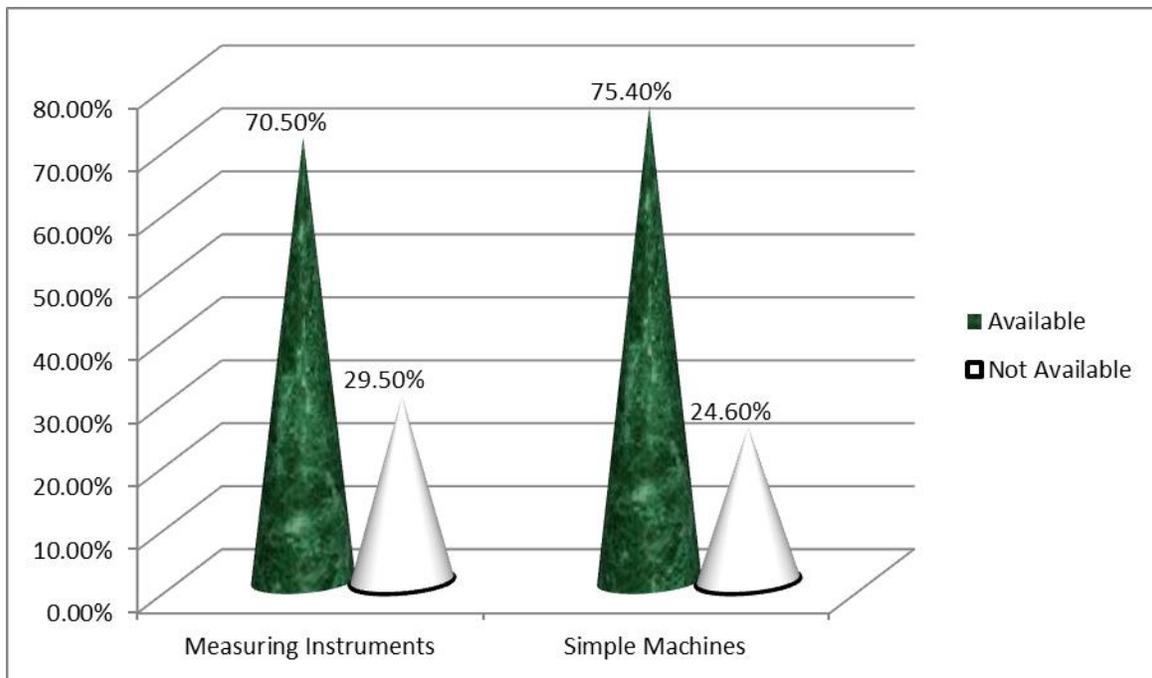


Figure 4.1 Devices

4.6 Utilization of Available Physical Facilities in the Teaching and Learning of Environmental Activities

The study sought to assess the utilization of available physical facilities in teaching and learning environmental activities. The findings are presented below;

Table 4.8 Utilization of Collections

Collections	Descriptive	Highly utilized	Utilized	Not Utilized
Shells	Frequency	6	23	32
	Percentage	9.8	37.7	52.5
Gems	Frequency	6	37	18
	Percentage	9.8	60.7	29.5
Minerals	Frequency	0	45	16
	Percentage	0	73.8	26.2
Clippings	Frequency	11	34	16
	Percentage	18	55.7	26.2
Replicas	Descriptive	Highly utilized	Utilized	Not utilized
Globe	Frequency	0	45	16
	Percentage	0	73.8	26.2
Dioramas	Frequency	22	34	5
	Percentage	36.1	55.7	8.2
Models	Frequency	33	13	15
	Percentage	54.1	21.3	24.6
Miniatures	Frequency	23	33	5
	Percentage	37.7	54.1	8.2

4.6.1 Utilization of Collections

The study revealed that shells were highly utilized by only 9.8% of the respondents, 37.7% noted that shells are utilized while 52.5% cited that they are not utilized. Gems were reported to be highly utilized by 9.8% of the respondents, however 60.7% noted that they are utilized and 29.5% said that they are not utilized in the schools for teaching and learning environmental activities.

Minerals were reported to be utilized by 73.8% of the respondents while 26.2% agreed that they are not utilized in teaching and learning environmental activities in their schools. Clippings were highly utilized by 18% of the respondents, 55.7% noted that

they are utilized and 26.2% agreed that the collection is not utilized in their schools for teaching and learning environmental activities.

4.6.2 Utilization of Replicas

The study sought to assess the utilization of replicas in teaching and learning environmental activities.

The study revealed that 73.3% of the respondents noted that globe was utilized in their schools while 26.2% agreed that it was not utilized in their school in teaching and learning environmental activities. Dioramas was reported by 36.1% of the respondents as highly utilized, 55.7% noted that it was partially utilized and 8.2% agreed that it was not utilized in learning and teaching environmental activities in their schools.

Models were highly utilized as reported by 54.1% of the respondents, 21.3% noted that it was partially utilized and 24.6% agreed that models were not utilized in their schools for teaching and learning environmental activities. Miniatures was another physical feature used in teaching and learning environmental activities, the findings indicated that 37.7% of the respondents agreed that miniatures was highly utilized, 54.1% noted that it was utilized while 8.2% did not utilize the feature in teaching and learning environmental activities.

4.6.3 Utilization of Living things

The study assessed the utilization of living things in teaching and learning environmental activities in schools. The findings are presented in figure 4.2

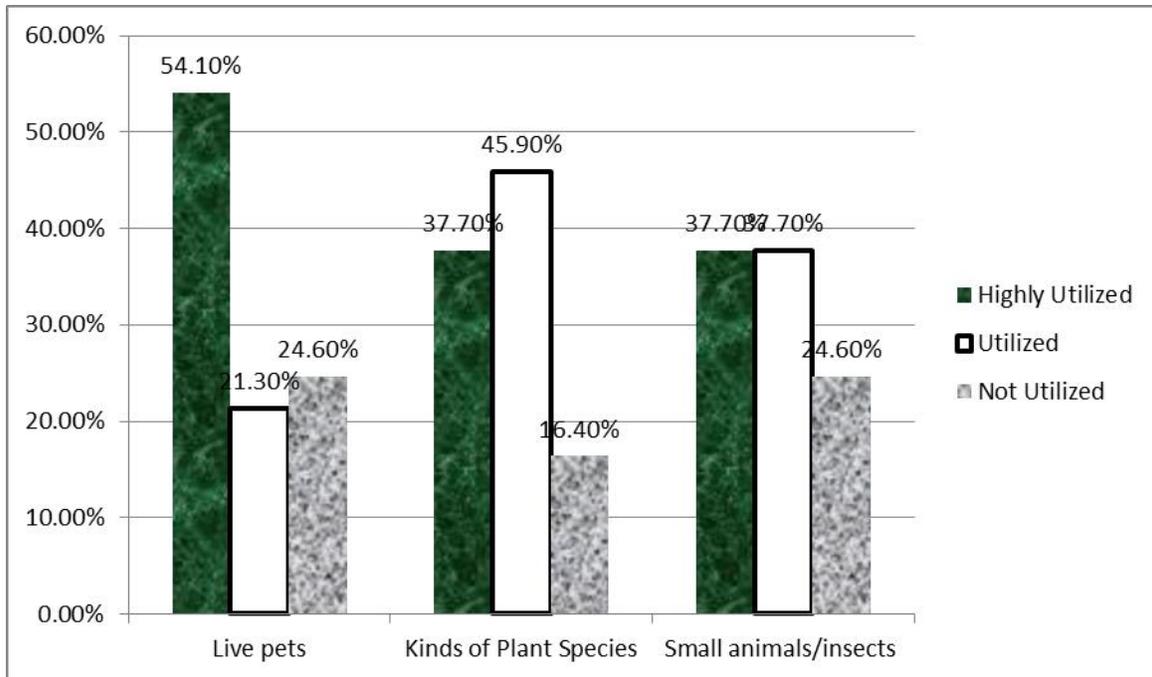


Figure 4.2 Utilization of Living things

It was reported that live pets were highly utilized (54.1%) in the schools for teaching and learning environmental activities, kind of plant species was just utilized at 45.9% while high utilization was at 37.7%. small animals/insects were highly utilized at 37.7% and also utilized at 37.7% however, 24.6% of the respondents did not utilize small animals/insects in teaching and learning environmental activities.

4.6.4 Utilization of Devices

Utilization of devices was assessed in the study, the findings are depicted in figure 4.3

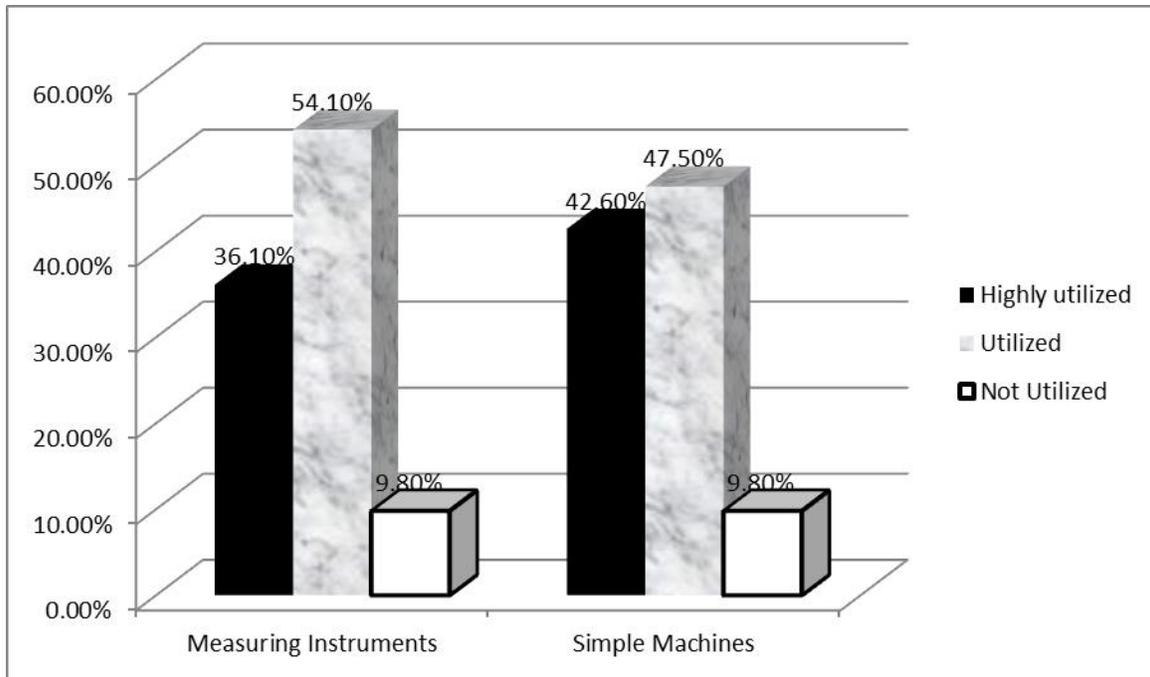


Figure 4.3 Utilization of Devices

The study revealed that 36.1% of the respondents noted that measuring instruments were highly utilized in schools in teaching and learning environmental activities, 54.1% noted that it is utilized while 9.8% did not utilize measuring instruments.

Further findings revealed that simple machines were highly utilized at 42.6%, it was utilized by 47.5% of the respondents and 9.8% did not utilize simple machines in teaching and learning environmental activities.

The insufficient utilisation of teaching and learning resources by both educators and students results in a deprivation of opportunities for students to engage in diverse learning experiences provided by these instructional resources. According to Awino (2011), there is a need for significant changes in the teaching and learning materials currently being used in order to address the ongoing issue of consistently low academic

performance in schools. In this case, instructional resources which conform to the new CBC curriculum should be made available in all schools in order to enhance the school learning atmosphere.

4.7 Availability of physical facilities with Observation Checklists

The availability of physical facilities were rated within a scale of 1-5. Table 4.9 depicts the findings.

Table 4.9 Availability of physical facilities

Item	Mean	Std Deviation
Teachers environmental text books	2.23	1.194
Pupils environmental textbooks	1.60	.675
Cards/card games	1.97	.809
Printing blocks	2.50	.974
Containers	1.87	.571
Propellers	1.83	.699
Kites	2.33	1.155
Soils	2.78	.732
Water	2.70	.651
Grass	2.86	.743
Pictures	1.80	.847
Laboratory	0.10	.024

On observation environmental textbooks (mean=2.23), kites (mean=2.33), printing blocks (mean=2.50), soils (mean=2.78), water (mean=2.70), grass (mean=2.86), were found to be the most available however, pupils' text books, pictures, containers were still

lacking in the schools under the study, laboratories were completely not found in the schools.

4.8 Lesson Observation

The researcher was able to acquire data from classroom observation in seven schools in Uasin Gishu County. The researcher sought to investigate the availability and utilization of resources and the physical facilities in the classroom. The findings of the study were that majority of the lessons emphasized on the use of theoretical methods in teaching and learning. The finding of the study was then presented in Table 4.10.

Table 4.10 Findings Based on Lesson observation

School	Class	Sub-Topic	Availability of Resources	Utilization of Resources	Remarks
School A	Grade 2	Plants	School garden seedlings	Demonstration by teachers Practiced by pupils	Lack of practical in the school garden, no seeds/seedlings
School B	Grade 3	Weather	Weather charts/ video clips	Use of books Only	Lack of resources such as video clips and weather charts
School C	PP2	Body parts	Old charts Adequate physical facilities	Use of songs Use of old charts	Low level of utilization
School D	PP 1	Soil	Model objects Different types of soils	Pupils were shown using realia charts	Low level of utilization
School E	Grade 2	Animals	Nature walks	Pupils used text books	Utilization of nature walks and identification of animals in the environment was low
School F	Grade 1	School environment and its neighborhood	In a nature walk, learners to point out the main features between home and school	Pupils were taken out of the school	Utilization of nature walks and identification of animals in the environment was okay
School G	PP2	Direction of the wind	Kites	Pupils used kites out of class	Unavailability of wind sock, wind vanes, feathers and paper

In the first school, it was observed that the teachers tried their best to utilize the instructional materials for teaching and learning environmental activities, however they lacked seedlings to fully demonstrate the planting of seeds in the school garden which

was a recommendation in the school curriculum. This therefore means that there was still a gap in the important learning resource which could help the teachers and pupils in teaching and learning environmental activities

In school B, the study finding was that during the lesson, only one instructional resource was in use. The teacher used only books to demonstrate weather. The lesson lacked instructional resources such as video clips/ weather charts which could have demonstrated better if not the natural environment during nature walks.

With regard to school C, the finding of the study was that there was still lack of adequate resources in the teaching and learning of the human body parts. This was indicated by the observation that the classroom had old charts. Despite the fact that the teacher did not utilize resources during the lesson, the classroom had adequate physical resources for teaching and learning.

In school D, the study revealed that there were enough instructional materials for teaching and learning of types of soils and their uses. However the teachers used charts to demonstrate the use of soils such as modelling of ribbons using clay.

In School E, the lesson was to identify types of animals and insects, the teacher used textbooks to show them the different types of animals and insects available in the environment. They however failed to utilize nature walks which can enable pupils to

identify animals in real life. Utilization of the available instructional resources was therefore low.

In relation to School F, the pupils were taken out of the school to identify and point out the main features between home and school. The utilization of nature walks for teaching and learning environmental activities was therefore excellent. In school G, the findings revealed that only one instructional resource was used. The lesson could have utilized other types of resources such as wind socks, wind vane and feathers in addition to what was used in the lesson to instill more knowledge on weather/direction of the wind.

The findings are consistent with previous research, such as the study conducted by Van Petegen et al. (2017), which revealed that educators in Zimbabwe recognise the significance of environmental education. However, they allocate minimal instructional time to this subject due to challenges in utilising available teaching resources and integrating environmental education content into their curriculum. Another contributing factor is that while certain governments, such as those in Hong Kong and the United Kingdom, recognised the urgency of environmental education, they did not prioritise it by making it mandatory and integrated across various subjects. Instead, each school had the autonomy to decide whether or not to incorporate environmental education into their curriculum (Ko & Lee, 2003).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter gives a summary of the findings in relation to the availability and utilization of instructional resources in teaching and learning environmental activities in schools within Uasin Gishu County. It further draws conclusions and recommendations for the study.

5.2 Demographic Characteristics of the Respondents

Female teachers were higher in proportion among the sampled respondents. However, majority of the head teachers were male constituting up to 85% of the total respondents.

In general, most teachers sampled were aged between 26 to 55 years (92.4%) even though majority of the head teachers were aged 36-55 years. From the study the teachers and head teachers were young and energetic to implement environmental activities since majorities are below the age of fifty five.

It was established that majority of the primary school teachers had ECDE certificate (57.5%) followed by P1 training (15.0%) and then Diploma in ECDE (7.5%) while the lowest number of teachers had bachelors degree (2.5%). On the other hand, most of the head teachers had diploma in education (40.0%) followed by head teachers attaining diploma in ECDE (25%), and then certificate in ECDE (15%). The important of these findings are evidence. The ECDE courses and PI courses seem to be different entities as P1 course given to teachers prepares them to teach subject areas while the ECDE courses prepare teachers to teach activity areas. This is supported by MoEST (2000) which

highlighted that the lower primary school activity areas are structured in subjects and are formal while in pre-primary activity areas are used instead.

The findings of the study were that 51% (30/60) of the respondents had a working experience between 0-6 years, another 29% (17/60) of the respondents had a working experience between 7-12 years. Another 16% (10/60) of the respondents had a working experience between 13-18 years and finally, 4% (3/60) of the respondents had working experience of over 19 years.

5.3 Instructional Resources Available For Teaching and Learning Environmental Activities

On availability instructional resources, the study showed high availability of school based instructional resources which includes environmental text books displays and exhibits collections, school garden for growing plants, however museums and fish ponds were not available in many schools.

On community based instructional resources, the study found that market, art gallery, hospital and gym was available for teaching and learning environmental activities, however City/town museum, reading center was not available for teaching and learning environmental activities.

Nature trips based instructional resources was available in majority of the schools. It was found that hills/mountains, Mining areas/manufacturing companies, Rivers, Valleys, Green fields, Forests and Agricultural farms were available in majority of the schools for teaching and learning environmental activities.

On human resources, the study found out that chiefs, members of county assemblies, businessmen, agriculturalists and historians were available in majority of the schools.

5.4 Utilization of Instructional Resources Available For Teaching and Learning Environmental Activities

On utilization of instructional resources, study revealed that utilization of school based instructional resources was not to the expected level. It was noted that Environmental text books Displays and exhibits of collections School garden was utilized by the teachers and pupils in teaching and learning environmental activities. However, museums and fishponds were not utilized. This could be attributed by the fact that these resources were not available in majority of the schools under the study.

The findings showed that market was highly utilized in teaching and learning of environmental activities, art gallery, hospital and gym was also highly utilized at 63% of the respondents showing utilization rate, however city/town museum, reading centered was not utilized, the extent of utilization was indicated by 18% of the respondents which was very low.

On nature trips based instructional resources, the study found out that utilization was highest in Hills/mountains, Rivers, Valleys, Green fields, Forests and agricultural farms, however this utilization was low in mining areas/manufacturing companies.

On utilization of human resources in teaching and learning environmental activities, it was found that chiefs, businessmen and agriculturalists were highly utilized by majority of the schools, however despite availability of members of county assemblies and historians were not utilized by most of the schools.

5.5 Physical Facilities Available in the Teaching and Learning of environmental activities

On physical facilities, the study found that collections for example shells and gems were available in majority of the schools, however important facilities for teaching and learning environmental activities such as minerals and clippings were not available in many schools.

On replicas, the study revealed that globe was available in many schools for teaching and learning environmental activities as it was reported by majority 70.5% of the respondents however, dioramas, models and miniatures was reported by most respondents as not available in their schools.

On living things, the study found out that very important facilities for teaching and learning environmental activities were not available in majority of the schools. Living things like live pets, kind of plant species and small animals/insects were not available in majority of the schools. Devices such as measuring instruments and simple machines were available in majority of the schools for teaching and learning environmental activities.

5.6 Utilization of the Available physical facilities in teaching and learning environmental activities.

On utilization of available facilities, study found out that despite the high availability of collections such as shells, gems in majority of the schools, utilization was still low. On replicas it was found that dioramas, models and miniatures was highly utilized, the globe was partially utilized despite its high availability in majority of the schools.

On living things, the study found out that live pets were highly utilized, despite its low availability. Under utilization of devices was also reported in the study despite its high availability.

On observation environmental textbooks, kites, printing blocks, soils, water, grass, were found to be the most available however, pupils' text books, pictures, containers were still lacking in the schools under the study, laboratories were completely not found in the schools.

On lesson plan observation analysis, the study revealed that majority of the lessons were taught with instructional resources which cannot fully instill the knowledge required, for example some teachers utilized the use of text books where they could have applied nature walks. Generally on observation it was found that most instructional resources were available but underutilized.

5.7 Conclusions

From the findings the study concluded that instructional resources availability varied according to the types of the resources. Environmental text books were available in most of the ECDE schools, nature trips and human resources were also readily available in the school community. Other essential resources for teaching and learning environmental activities such as seeds/seedlings, animals/insects were the least available in the schools and all at dismal.

On utilization of instructional resources, the study concluded that utilization was low in some instructional resources and average in others for instance, Environmental text books, displays and exhibits of collections School garden was utilized by the teachers and

pupils in teaching and learning Environmental activities. However, museums and fishponds were not utilized despite the fact that they were available.

On availability of physical resources, the study concluded that the most important physical resources such as living things like live pets, kind of plant species and small animals/insects were not available in majority of the schools. Devices such as measuring instruments and simple machines were available in majority of the schools for teaching and learning environmental activities.

On utilization, the study concluded that utilization was low in most of the physical resources available in the schools. It was noted that most of the available resources were not very relevant in teaching and learning environmental activities while those which were not available are very significant in effective teaching and learning of the subject.

5.8 Recommendations

Based on the foregoing discussion of the findings and conclusion, the following implications and recommendations are offered to head teachers, educators and the government regarding the teaching of environmental activities at the ECDEs.

Therefore the following recommendations were made:

- i. The government in collaboration with the community should provide enough instructional resources and physical facilities to enhance the teaching and learning of Environmental activities.
- ii. The Ministry of Education in collaboration with ECDE officers should conduct more seminars, workshops and conferences for environmental activities curriculum for the teachers. All pre-school teachers in public pre-school should be

trained on utilization of the available resources in the teaching of Environmental activities.

- iii. A centre for teaching learning resources should be created from the district level down to the zonal level to boost Competence based curriculum. Teachers can be allowed to visit the resource centers with their learners to learn. This centre should be fully equipped with audio-visual and electronic facilities to enhance teaching and learning of Environmental activities.
- iv. It was observed that important instructional resources which were relevant for teaching and learning environmental activities were not available, therefore the government in collaboration with the Ministry of Education should equip schools with instructional resources and facilities relevant to the Competence Based Curriculum (CBC)

5.9 Recommendations for future research

To bring more light into the issue investigated in this study, it was suggests that the following studies be conducted:

- i. A similar study covering the whole of Kenya to find out if the findings for this study hold true for the whole republic.
- ii. A similar study involving the other institutional factors, which may affect teaching of Environmental activities to the pupils.
- iii. This study should be replicated to a wider population of pre-schools in Uasin Gishu County to establish factors influencing teaching of environmental activities.

- iv. Further research should be carried out to identify teaching methods that could be effective in teaching of Environmental activities curriculum.

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APPENDICES

APPENDIX I: INTRODUCTORY LETTER

Dear Sir/Madam,

I am Leah Kongai student from Moi University, Department of Curriculum, Instruction and Educational Media. I am carrying out a research “**Availability and utilization of resources in teaching and learning of environmental activities in early childhood development and education in Uasin Gishu County Kenya**”. I kindly request for your voluntary participation in the study by providing information requested below. Your responses will be treated with utmost confidentiality and will strictly be used for academic purposes.

Thank you

Leah Kongai

APPENDIX II: QUESTIONNAIRE FOR TEACHERS/HEAD-TEACHERS

This questionnaire aims at establishing the **Availability and Utilization of Resources for Teaching of Environmental activities in ECDEs in Uasin Gishu County**. Information you give be treated in confidence. Please give honest information about situation in ECDEs in which you teach. Your co-operation is highly appreciated.

Section A: Background Information

Tick (√) appropriate answer where alternative answers are provided;

OR Write answer in space provided.

1. What is your professional qualification?

Certificate in ECDE () Diploma in ECDE ()

Bachelor of Education degree () P1 (certificate) () Bachelor of

Education degree ()

Others (specify).....

2. What is your gender?

Male () Female ()

3. What is your Age

<26 years () 26-35 () 36-55 () > 55 ()

Section B: Instructional Resources Available in the teaching and learning of environmental activities

Indicate the instructional resources available in teaching and learning of Environmental activities in your school

Resource	Available	Unavailable
School Based instructional Resources		
Environmental text books		
Displays and exhibits of collections		
School garden for growing plants		
Museum		
Fish ponds		
Community Based Instructional Resources		
City/town museum, reading center,		
Art gallery, hospital, gym		
Nature trips based instructional resources		
Hills/mountains		
Mining areas/manufacturing companies		
Rivers		
Valleys		
Green fields		
Forests		
Agricultural farms		
Human Resources		
Chiefs		
Members of County assemblies		
Businessmen		
Agriculturalists		
Historians		

SECTION B: Utilization of the available instructional resources in teaching and learning environmental activities

Indicate the level of utilization of the available resources in the teaching and learning of environmental activities

Resource	Highly utilized	Utilized	Not utilized
School Based instructional Resources			
Environmental text books			
Displays and exhibits of collections			
School garden for growing plants			
Museum			
Fish ponds			
Community Based Instructional Resources			
City/town museum, reading center,			
Art gallery, hospital, gym			
Nature trips based instructional resources			
Hills/mountains			
Mining areas/manufacturing companies			
Rivers			
Valleys			
Green fields			
Forests			
Agricultural farms			
Human Resources			
Chiefs			
Members of County assemblies			
Businessmen			
Agriculturalists			
Historians			

SECTION D: Physical Facilities Available in the Teaching and Learning of Environmental activities

Physical Facilities	Available	Unavailable
Collections		
Shells		
Gems		
Minerals		
Clippings		
Replicas		
Globe		
Dioramas		
Models		
Miniatures		
Living things		
Live pets		
Kinds of plants species		
Small animals/insects		
Devices		
Measuring instruments		
Simple machines		

SECTION E: Utilization of available physical facilities in the teaching and learning of Environmental activities

Physical Facilities	Highly utilized	Utilized	Not Utilized
Collections			
Shells			
Gems			
Minerals			
Clippings			
Replicas			
Globe			
Dioramas			
Models			
Miniatures			
Living things			
Live pets			
Kinds of plants species			
Small animals/insects			
Devices			
Measuring instruments			
Simple machines			

**APPENDIX III: OBSERVATION CHECKLIST ON AVAILABILITY AND
UTILIZATION OF RESOURCES IN THE TEACHING AND LEARNING OF
ENVIRONMENTAL ACTIVITIES**

Indicate using a tick (√) whether any of the following instructional resources are available and utilized in the school for teaching and learning of environmental activities

RESOURCE	Available	Not available
Teachers environmental text books		
Pupils environmental textbooks		
Cards/card games		
Printing blocks		
Containers		
Propellers		
Kites		
Soils		
Water		
Grass		
Pictures		
Laboratory		

APPENDIX IV: LESSON OBSERVATION SCHEDULE

School: _____

Name of the teachers: _____

Class: _____

Date: _____

Sub-topic: _____

Availability and utilization of resources during instruction

Introduction

Lesson development

Conclusion

Remarks

APPENDIX V: PHOTOGRAPHY



A picture showing outdoor activities on environmental activities

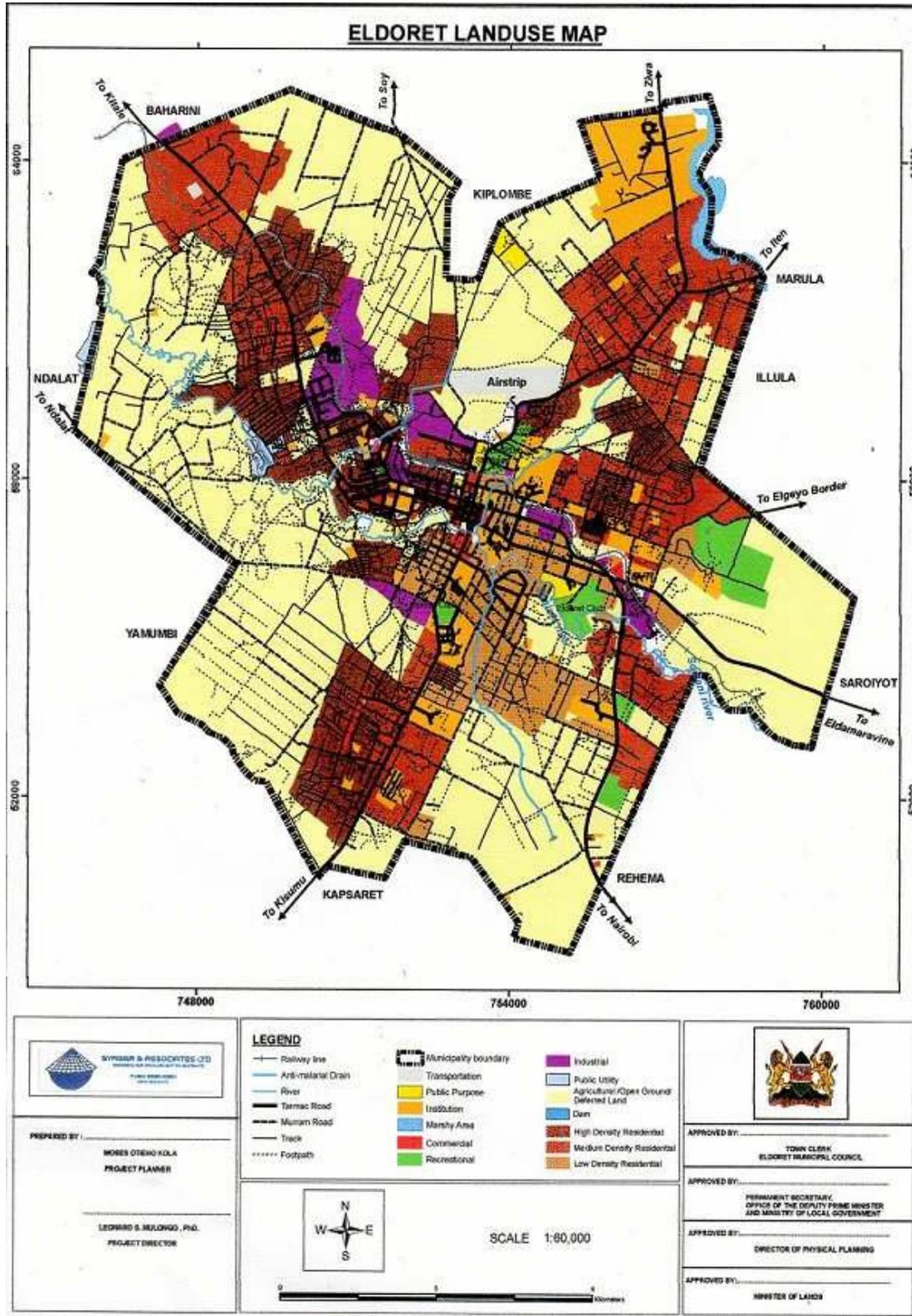


This photo identifies the lack of instructional facilities which include lack of charts and textbooks.



Pupils' utilization of outside instructions like nature works lacks in the school.

APPENDIX VI: MAP OF UASIN GISHU COUNTY



APPENDIX VII: RESEARCH PERMITS

CONDITIONS

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



REPUBLIC OF KENYA

RESEARCH CLEARANCE
PERMIT

GPK60553mt(10/2011)

(CONDITIONS - see back page)

Research Permit No. NCST/RRI/12/1/SS 011/1

THIS IS TO CERTIFY THAT:

Date of issue 15th May, 2012

Prof./Dr./Mr./Mrs./Miss/Institution

Fee received

KSH. 500

Leah Kongai
of (Address) Moi University

P.O.Box 3900-30100, Eldoret,
has been permitted to conduct research in

Location
Uasin Gishu District
Rift Valley Province



on the topic: An investigation into the
availability and utilization of science
instructional resources: A case of public
ECDE centres in Eldoret Municipality.

Applicant's
Signature

Secretary
National Council for
Science & Technology

for a period ending: 31st December, 2012.

**APPENDIX VIII: RESEARCH PERMITS FROM THE NATIONAL COUNCIL
FOR SCIENCE AND TECHNOLOGY**

REPUBLIC OF KENYA



NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telephone: 254-020-2213471, 2241349
254-020-310571, 2213123, 2219420
Fax: 254-020-318245, 318249
When replying please quote
secretary@ncst.go.ke

P.O. Box 30623-00100
NAIROBI-KENYA
Website: www.ncst.go.ke

Our Ref: **NCST/RRI/12/1/SS 011/1421** Date: **15th May 2012**

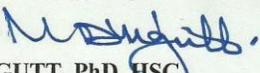
Leah Kongai
Mi University
P.O.Box 3900-30100
Eldoret

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“An investigation into the availability and utilisation of science instructional resources: A case of public ECDE centres in Eldoret Municipality.”* I am pleased to inform you that you have been authorized to undertake research in **Uasin Gishu District** for a period ending **31st December, 2012.**

You are advised to report to **the District Commissioner and the District Education Officer, Uasin Gishu District** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.



DR. M. K. RUGUTT, PhD, HSC.
DEPUTY COUNCIL SECRETARY

Copy to:

The District Commissioner
The District Education Officer
Uasin Gishu District.

“The National Council for Science and Technology is Committed to the Promotion of Science and Technology for National Development.”

**APPENDIX IX: RESEARCH PERMITS FROM THE MUNICIPAL COUNCIL OF
ELDORET**

**Municipal Council of Eldoret
Municipal Education Office**

Email: info@eldoretmunicipal.go.ke or
emcmun@gmail.com or
mceldoret@localgovernment.go.ke
Website: www.eldoretmunicipal.go.ke
Wireless: 020 2329037
Fax: +254-053-2062884



P.O BOX 40,
Eldoret, 30100,
KENYA.
Tel: +254-052061330
+254-052032603
+254-052062208

YOUR REF:
OUR REF: EMC/ED/A1/V/33

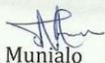
24th May, 2012

Leah Kongai
MOI UNIVERSITY

RE: RESEARCH AUTHORIZATION

Following authorization by the National Council for Science and Technology vide letter NCST/RR1/12/1/SS011/1421, I am pleased to inform you that this office has granted you permission to visit schools within the municipality for purposes of carrying out the research.

Please note that after the research you will be expected to share the findings with us.


Pius W. Munialo
MUNICIPAL EDUCATION OFFICER