

**CONTEXTUALIZATION OF THE CONSTRAINTS AFFECTING
COMPETENCY BASED CURRICULUM IMPLEMENTATION
AMONG PRE-PRIMARY SCHOOLS IN EMBU COUNTY, KENYA**

BY

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DECLARATION

I hereby declare that this thesis is entirely my own work and has not been submitted to any other university or institution for certification. I have properly included referenced sources to support this thesis. Any text, data (including spoken words), graphics, images, or tables taken from external sources, including the internet, have been duly credited, with references provided in line with the current APA guidelines and in compliance with anti-plagiarism regulations.

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DEDICATION

I dedicate this research undertaking to my children, Faith Muthoni, Fetryn Fanaka, and Finnah Mwende, with the hope of inspiring and igniting their aspirations for future academic pursuits.

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LIST OF ABBREVIATIONS AND ACRONYMS

CBC	: Competency-Based Curriculum
CBE	: Competency-Based Education
KCPE	: Kenya Certificate of Primary Education
KICD	: Kenya Institute of Curriculum Development
KNUT	: Kenya National Union of Teachers
MOE	: Ministry of Education
NACOSTI	: National Commission for Science & Technology and Innovation.
PP1	: Pre-primary One
PP2	: Pre-primary Two
SPSS	: Statistical Package for the Social Sciences
STEM	: Science Technology Engineering And Mathematics
TVET	: Technical And Vocational Educational Training
UNESCO	: United Nations Educational, Scientific and Cultural Organization

ABSTRACT

Curriculum reforms are a continuous aspect of any nation's education system, and their success requires a well-defined implementation strategy. Shifting societal dynamics—spanning socioeconomic, cultural, and technological domains—demand such reforms to ensure education remains relevant and responsive. In Kenya, the education system is currently transitioning from the 8-4-4 structure to the new 2-6-3-3-3 Competency-Based Curriculum (CBC). However, this shift has been met with various implementation challenges. This study aimed to investigate the contextual constraints affecting the effective implementation of CBC, with a focus on Embu County, Kenya. An ex post facto research design was employed to guide the study. An exploratory survey methodology was employed in this study, guided by the following objectives: to assess differences in the implementation of the Competency-Based Curriculum (CBC) between public and private pre-primary schools in Embu County; to examine the correlation between the availability of instructional resources and CBC implementation; to explore the relationship between teachers' competencies in CBC and its implementation; and to analyze the impact of school infrastructure on CBC implementation in pre-primary schools. The study was anchored in Gross's (1971) Theory of Curriculum Implementation. The target population included all pre-primary schools in Embu County, with the respondents comprising pre-primary school teachers and head teachers. Embu County was selected purposively, while a 10% sample size of the population was drawn through simple random sampling. Data collection tools included questionnaires, observation checklists, and interview schedules. Two pre-primary schools were selected for the pilot study and were subsequently excluded from the main study sample. The test-retest method was employed to determine the reliability of the

research instruments, with a Cronbach's Alpha coefficient of 0.75 deemed acceptable. The study hypotheses were tested using the Pearson Correlation Coefficient. Qualitative data were transcribed, analyzed, and presented thematically. The study findings are presented using tables and figures for clarity and ease of interpretation. The study found that the implementation of the Competency-Based Curriculum (CBC) was below expected levels. It also revealed that public pre-primary schools outperformed private pre-primary schools in the implementation of CBC. Additionally, the study highlighted inconsistencies in teachers' ability to implement the curriculum effectively, despite the majority having undergone training. Other challenges identified included inadequate school infrastructure and a shortage of instructional materials. The study recommended that the government intensify its efforts in providing essential resources and offering CBC training for teachers. It also emphasized the importance of increased support from parents and the wider community in backing government initiatives aimed at enhancing infrastructure and instructional materials, as a means to achieving the goals of the Competency-Based Curriculum (CBC). Furthermore, teachers were encouraged to adopt strategies for resource mobilization and to make use of locally available materials. The study suggested that further research should investigate additional factors influencing effective curriculum implementation, particularly those beyond teacher training and infrastructure. In conclusion, the study underscored that teacher competence, access to instructional resources, and adequate infrastructure are critical to the successful implementation of CBC.

CHAPTER ONE

INTRODUCTION AND CONTEXTUALIZATION OF THE STUDY

1.0 Introduction

This section outlines the key components addressed in the study. It begins with a detailed overview of the background to the research, followed by the problem statement, the purpose of the study, specific objectives, and the guiding research questions. The significance of the study is also highlighted, demonstrating its relevance to various stakeholders. Additionally, the section discusses the study's limitations, delimitation, and underlying assumptions. It concludes with a comprehensive explanation of the theoretical and conceptual frameworks that underpin the research.

1.1 Background of to the Study

In the 21st century, skills-based education has gained significant prominence on a global scale. Competence-based curriculum (CBC) or competence-based education (CBE), also known as competence-based learning (CBL), is emerging as a prominent approach worldwide. Research conducted by Anderson-Levitt (2023) across countries like Sweden, France, Russia, Kosovo, the USA, Uruguay, and China highlights that competence-based approaches in education have emerged as a significant international educational policy concept in recent decades. The Global economies are quickly shifting from knowledge-based curricula to more hands-on experience programmes that promote active, innovative thinking, creativity and problem solving in the learner. These are just among other useful competencies acquired and required in the current socioeconomic dispensation.

According to Njeng'ere and Ji (2017) a competency refers to the aptitude to effectively apply skills, knowledge, ethics, and attitudes in different defined real-life contexts, including educational, work-related, personal, or professional development. UNESCO (2014), as cited by Anderson-Levitt and Gardinier, (2023) defines competency as the possession and demonstration of knowledge, understanding, skills, attitudes, and behaviour necessary to carry out a specific task. Competence-based education prioritizes the acquisition of a specific set of valuable knowledge, skills, and competencies that serve as stepping stones for learners to advance to more complex subjects. In contrast, content-based education emphasizes the memorization of information without significant opportunities for applying knowledge.

Research continues to underscore that education plays a vital role in transforming societies by reducing poverty levels and enhancing economic development (IBE-UNESCO, 2014). The increasing need for technology, the acquisition of twenty-first-century skills, and the globalization of the labour market have all influenced the dynamics of the learning and teaching process. In response, numerous countries are swiftly transforming their education systems to ensure that learners possess the necessary competencies for a prosperous life (Amunga et al., 2020). Consequently, many nations have embraced competency-based teaching and learning approaches, aiming to equip individuals with the essential knowledge, skills, and attitudes required for personal and social development (Ogula et al., 2023).

The implementation of the Competence-Based Curriculum had its origins in the United States of America during the 1960s (Takahashi et al., 2011). Initially, the competency-based approach was introduced in teachers' training colleges as part of efforts to reform teacher education. The education system later evolved in the 19th century by preparing students for the world of work as well as society through helping them achieve competence through developing prescribed competencies. The United States has since witnessed the implementation of several concepts related to competency-based education, including competency-based assessments, across different educational levels (Njeng'ere & Ji, 2017). Johnstone and Soares (2014) assert that Competency-Based Education is a transformative force, referring to it as a disruptive innovation. According to their perspective, Competency-Based Education (CBE) fundamentally reshapes the educational landscape by emphasizing the mastery and practical application of essential knowledge and skills in real-world contexts. This approach establishes connections between academic learning and employment markets, leading to a clearer comprehension of the competencies necessary for students to thrive in both their professional careers and personal lives.

According to Cheptoo and Ramadas (2019) education in Africa is still due to change due to the technological advancement and globalization. They additionally contend that numerous African countries are facing challenges in keeping up with international standards and the advancements of the knowledge economy. Hence the adoption of Competency-Based Curriculum should be accelerated to bring new trends to the African education in order to be at par with the global community. CBC emphasis is laid on

competencies among the graduates that are fundamental in employment and the job market. This means that Africa needs to rethink and realign the adopted CBC to the African context. As member countries of the East African community embraced the Competency-Based Curriculum framework, several nations have followed suit by adopting competency-based curriculum and assessment Approaches. For instance, Rwanda has implemented Competency-Based Curriculum in her education system. The nation has made significant progress in transitioning from a content-based curriculum to a competency-based curriculum, marking a shift from solely acquiring content to emphasizing the acquisition of knowledge and skills (Ngendahayo & Askill-Williams, 2016).

In Tanzania, CBE was introduced first in secondary school education in 2005 and subsequently in primary schools in 2006 (The World Bank, 2006). However, teaching in Tanzania has remained teacher centred rather than competency-based (Makunja 2015 & Mosha 2012). These beg the question as to whether implementation of CBC in Kenya could be different. What contextual constraints affect Implementation of CBC in Kenya? Various factors may interplay on curriculum implementation globally, regionally and locally, as may be the case. Therefore, such factors must be contextualized to enable informed mitigation measures to be put in place.

In their study, Komba and Mwandanji (2015) examined the factors impacting the successful implementation of the Competency-Based Education (CBE) in Tanzania. They discovered that there was a limited utilization of appropriate competency-based pedagogical approaches and assessments. This was primarily attributed to a lack of

comprehensive teacher training on the implementation of the new curriculum. Furthermore, inadequate availability of instructional materials and inadequate school infrastructure were identified as contributing factors to this issue. According to Makunja (2015) successful implementation of curriculum involves proper and thoughtful planning and interplay of many factors such as the presence of adequate teaching and learning resources, teachers' competencies, and the quality of school infrastructure. Based on the *Curriculum Implementation Theory* proposed by Gross et al. (1971), effective implementation of an educational program relies on managing support facilities, the competence of implementer, the capability of teachers, and the clarity of the innovation. This means that successful curriculum implementation requires adequate resources and prepared teachers who are in terms of changes that exist in a curriculum.

Kenya underwent a significant transition from the 8-4-4 system of education to the Competency-Based Curriculum (2-6-3-3-3) in 2017. This transformation aimed to enhance the quality of education and promote the acquisition of competencies among students. The implementation of the Competency-Based Curriculum (CBC) aimed to equip learners with essential key competencies that could be applied in real-life situations, as envisioned by the Kenya Institute of Curriculum Development (KICD, 2017).

The Competency-Based Curriculum embraces a learner-centered pedagogy, utilizes formative assessment approaches, and emphasizes the practical application of knowledge in real-life contexts (Kaviti, 2018). This shift necessitates a transformation in the teaching and learning process, moving away from mere memorization of content knowledge

towards acquiring skills and competencies that are valuable for solving real-life problems (The World Bank, 2006). In the Competency-Based approach, learners are anticipated to engage with learning resources and actively construct meaning from them. It, therefore, would mean that pedagogical approaches be attuned to learner-centered (KNUT, 2019; Momanyi & Rop, 2019). In the Competency-Based approach, learners are encouraged to assume responsibility for their own learning through direct exploration and hands-on experience. Simultaneously, teachers are tasked with designing effective learning activities that facilitate the development of specific competencies. It is within this context that the present study aims to examine the contextual constraints hindering the effective implementation of the Competency-Based Curriculum (CBC).

Since the introduction of the Competency-Based Curriculum (CBC) in 2017, research conducted in Kenya has indicated a limited utilization of Competency-Based teaching and assessment methods in pre-primary schools (Waweru, 2018). In a study conducted by Onyango (2017) in the Homa Bay County, it was found that the availability of instructional resources, trained teachers, and teaching methods had a significant impact on the successful implementation of the Kiswahili curriculum in primary schools. Additionally, it is crucial to investigate the implementation of the Competency-Based Curriculum (CBC) at pre-primary grades, as these early stages serve as the foundation upon which subsequent learning is built. Availability and quality of instructional materials like textbooks, stationery, and teacher preparedness together could significantly affect the extent of curriculum implementation (Yara & Otieno, 2010).

Rutere (2012) conducted a study in Imenti South District on the effects of teacher-related factors on the implementation of an integrated curriculum. The findings revealed that teachers who had received training were better equipped with the necessary skills and knowledge to implement the integrated curriculum compared to those who had not undergone such training. Furthermore, Rutere reported that untrained teachers lacked confidence in their teaching, which consequently led to subpar curriculum implementation. The reviewed literature highlights several factors that may influence curriculum implementation. It is therefore essential to investigate these factors further and contextualize them specifically at the foundational level—pre-primary grades. Existing studies, such as the KNUT report of 2019 (as cited by Waweru, 2018), suggest a slow or limited uptake of the Competency-Based Curriculum (CBC). However, previous research has not sufficiently explored the contextual constraints that impact on implementation of CBC. Consequently, this study aims to identify the specific contextual constraints affecting the implementation of the CBC in pre-primary schools in Kenya."

1.2 Statement of the Problem

The Competency-Based Curriculum (CBC) is a recently introduced Education Curriculum in Kenya with a 2:6:3:3:3 system. Its implementation began in 2018, starting with the lower primary grades. This new structure replaces the long-standing 8:4:4 system, which had been in place for over three decades, albeit with various adjustments over the years. The CBC aims to equip learners with critical thinking skills, encourage collaborative learning, nurture creativity, and empower students to solve real-life problems effectively.

Despite these intended benefits, its implementation has been met with both significant support and widespread criticism in equal measure..

The literature and media reveal widespread discontent among citizens regarding the viability of the Competency-Based Curriculum (CBC). A 2019 study by the Kenya National Union of Teachers (KNUT) found limited use of CBC approaches in teaching and learning activities across schools nationwide. Similarly, Waweru (2018) noted low uptake of CBC implementation in most Kenyan schools. This raises critical questions: Is CBC being implemented effectively in Kenya? At which levels are challenges most pronounced? What constraints hinder its smooth implementation? While numerous factors influence curriculum implementation, existing studies have primarily focused on general challenges rather than situating them in specific contexts. Additionally, much of the research has centered on lower primary school grades. To address this gap, the current study aimed to explore the contextual constraints affecting the implementation of CBC in pre-primary school centers in Embu County, Kenya.

1.3 Purpose of the Study

The purpose of this study was to contextualize the constraints on the implementation of the Competence-Based Curriculum (CBC) among pre-primary schools in Embu County. It aimed at contextualizing the constraints that hinder the smooth implementation of CBC in the county. The specific contextual constraints investigated included the availability and utilization of instructional resources, teacher competence in CBC, and the state of school infrastructure.

1.3.1 Objectives of the Study

The following objectives were used in the current study. The study was to;

- i. Establish the difference in implementation of CBC between public and private pre-primary schools in Embu County
- ii. Determine the relationship between availability of instructional resources on implementation of CBC in pre-primary schools in Embu County.
- iii. Explore the relationship between teachers' competencies in CBC and its implementation in pre-primary schools in Embu County.
- iv. Analyse the effects of school infrastructure on implementation of CBC in pre-primary schools in Embu County.

1.3.2 The Null Hypotheses

The null hypotheses of the study are outlined below.

H0₁: There is no significant difference in the implementation of CBC between public and private pre-primary schools in Embu County.

H0₂: There is no significant relationship between availability of instructional resources and implementation of CBC in pre-primary schools.

H0₃: There no significant relationship between teachers' competency in CBC and its implementation among pre-primary schools.

H0₄: There is no significant relationship between school infrastructure and implementation of CBC among pre-primary schools.

1.4 Significance of the Study

The study envisages that findings hereof could be useful in informing key Education stakeholders as under;

- County Government could collect relevant data on the extent of CBC implementation in pre-primary schools within the county and identify the challenges hindering its effective execution. Counties may allocate more resources and focus on the pre-primary level, thereby strengthening the foundation for learners at this critical stage. Furthermore, counties could use the findings of this study to develop strategies aimed at enhancing teachers' capacity and ensuring the successful implementation of the CBC
- Kenya Institute of Curriculum Development(KICD) may find the findings insightful in providing pertinent information to help in the orientation and training of teachers and preparation of learning materials on the new curriculum and also provide vital lessons pertaining to CBC roll-out at county level.
- The Ministry of Education (MOE) and the Teachers' Service Commission (TSC) may use the findings to design retooling programmes that focus on teacher preparation and resource mobilization and allocation for effective implementation and uptake of CBC at pre-primary school level being the foundational grades.
- Policy makers may use these findings to institute policy intervention measures that are aimed at addressing gaps in the implementation process.

1.5 Delimitation and Limitation of the Study

The limitations and scope of this study are discussed in the subsequent section.

1.5.1 Limitations of the Study

The large size of Embu County posed potential challenges for coverage, but a substantial sample was utilized to address this issue. Financial constraints were also a concern; however, they were mitigated by employing cost-effective data collection methods. To minimize time-related pressures, data collection was conducted during school terms.

1.5.2 Delimitation of the Study

The study targeted public and private preschools in Embu County, selecting a representative sample comprising 10% of the schools. This approach enabled the researcher to collect and manage data effectively.

1.6 Assumption of the Study

The study was conducted under the assumption that;

- i. All participants had the necessary information and were willing to take part in the study.
- ii. Primary school head teachers could guarantee the researcher the needed permission to conduct the study.

1.7 Theoretical and Conceptual Framework

1.7.1 Theoretical Framework

The current study was informed by the Curriculum Implementation Theory developed by Gross et.al (1971). Gross explains that implementation of any curriculum should be based

on elements including but not limited to; teacher capacity, available facilities and compatible innovation. The following elements can be explained in the following manner.

The clarity of the curriculum is crucial as it provides the necessary guidance for smooth implementation by the implementer. The implementer, particularly the teacher, must possess awareness of the current trends and changes in the curriculum. Without this knowledge, the implementation of the curriculum would be ineffective. Additionally, it is essential to ensure the availability of necessary resources for implementing the new curriculum. Furthermore, adequate emphasis should be placed on enhancing teachers' capacity to manage the implementation process through relevant training on the new curriculum. By providing a curriculum implementer with the necessary knowledge and skills, they will be adequately prepared to effectively implement the curriculum. Consequently, it is crucial for teachers to possess the required competence to successfully implement the curriculum. The management support of facilities, according to this theory, implies that school management should avail relevant resources such as instructional materials and facilities which can facilitate effective Implementation of the Curriculum. The theory is applicable to this study as the factors proposed by Gross are also applicable to the implementation of the Competency-Based Curriculum in pre-primary schools.

According to the theory, the effective implementation of a curriculum relies on teachers possessing the necessary skills and understanding of how to implement it. Therefore, the objective of this study was to investigate the influence of contextual factors, including teacher-related factors, on the implementation of CBC in pre-primary schools. The theory

further emphasizes the importance of having adequate and appropriate resources and facilities for the successful implementation of a curriculum. Gross argues that without adequate resources and facilities, a curriculum is bound to fail. Based on this principle, the present study aimed to investigate the impact of instructional resource availability and school infrastructure on the implementation of CBC in pre-primary schools.

1.7.2 Conceptual Framework

This subsection presents the conceptual framework that illustrates the relationships between the independent and dependent variables. The interaction of the study variables therewith results in outcomes of implementation of CBC as illustrated in the conceptual diagram in Figure 1.

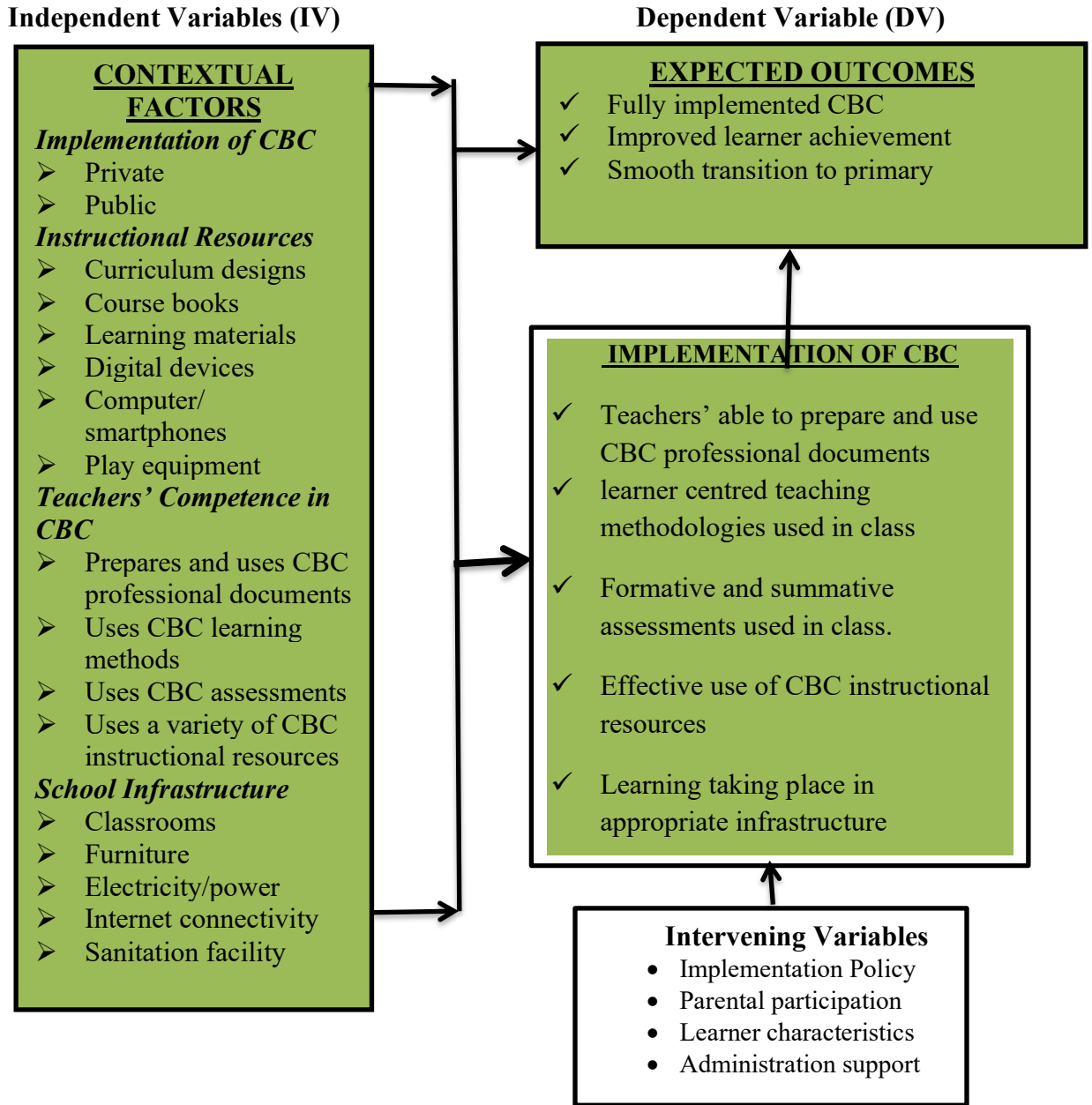
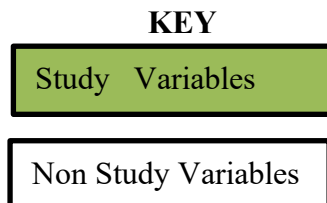


Figure 1: The Conceptual Framework Diagram



1.8 Operational Definition of Terms

Availability of Instructional resources : Requisite teaching and learning materials and equipment.

Class size: Number of pupils in classrooms against one teacher as opposed to the recommended class ratio.

Competencies or skills in learners: competencies or skills that learners need to demonstrate mastery of in order to progress

Contextual constraints: Specific challenges or conditions that hinder implementation of CBC in Embu County.

Implementation of CBC: Embracing of CBC content and pedagogical approaches.

School infrastructure : institutional physical facilities that support CBC implementation.

Teachers' Competence: refers to the ability of teachers to effectively design, implement, and facilitate learning experiences that develop the competencies outlined in the curriculum.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0. Introduction

This chapter presents a thematic review of the relevant literature pertaining to the study. The review encompasses a comprehensive approach, starting from global and international perspectives and gradually narrowing down to regional and local contexts. The researcher finally summarizes chapter by highlighting the gaps addressed in the literature. These are the gaps the study addressed.

2.1 Implementation of the Competency-Based Curriculum (CBC)

Globally, there is a growing trend towards aligning Education with the skills needed in the 21st century. Internationally, there is a rapid adoption of competency-based education in educational programs. This shift is driven by the changing societal needs, and many advanced nations have embraced competency-based education as a solution to address these evolving needs. According to Amutabi (2019), the CBC is characterized as an educational system that emphasizes individual learner needs and potential, where content delivery is tailored accordingly. Learning therefore should be flexible and shifts according to the learners' needs, thus making it largely learner-centered education. The CBC fosters a collaborative learning process where learners and instructors work together as partners. They actively engage in seeking answers and solutions to both simple and complex learning expectations that are beneficial to humanity.

Competency-Based Curriculum is characterized as a practical and experiential approach to learning and training. It encourages learners to actively engage in hands-on activities, enabling them to enhance their problem-solving skills as they progress. In CBC, the emphasis is not solely on exams but rather on assessing competency through various methods. These assessments aim to ensure that learners are not only acquiring knowledge but also improving their skills and abilities in their respective areas of study. In the United Kingdom, majority of the schools have invested in the redesigning of innovative curriculum (Byrne et al., 2013). Majority of schools in the United Kingdom have adopted CBC, beginning with curriculum planning that aligns with 21st-century requirements and emphasizes the learner-centered approach outlined by Tyler 1949 and Taba 1962 in terms of the aims and objectives of CBC. By opting to develop and implement CBC, schools in the UK demonstrate their intention to cultivate active citizens capable of comprehending and engaging in democratic processes within their local, national, and global communities. This approach aims to foster a sustainable social world through the active participation of individuals.

In Spain, the Spanish Education Act of 2006, outlines and emphasize on the core competencies as key elements of the curriculum and evaluation. The present competencies for Primary Education in Spain encompass language, mathematics, science and technology, ICT, as well as social and civic education. The Department of Education in Spain, along with the Education Departments of regional governments, advocates for the inclusion of basic competencies as a fundamental element of the curriculum. The Department of Education in Spain, in collaboration with regional Education Departments, supports the

integration of fundamental competencies as a crucial component of the curriculum. In Spain, education is regarded as a lifelong learning process that emphasizes the need for adaptability and flexibility to cater to the diverse capacities, interests, and needs of students, as well as the evolving dynamics of society . CBC follows a problem solving approach and endeavour to address and avoid gender discrimination (Granados-Sánchez et al., 2015).

In the New Zealand curriculum, CBC lays more emphasis on supporting the learners in acquiring desirable useful competencies that are necessary for the current socioeconomic dynamics in society. Teachers, as agents of change, are entrusted with the responsibility of striking a balance between the emerging competency-based curriculum approaches and the societal demands and needs of the learners, according to Harris (2017) CBC proponents argue that the programme is more inclusive of the useful competencies, a shift from traditional memorization of content. It is also seen as the vehicle countries could use to empower their human capital with skills, knowledge and values for national development.

A report by UNESCO (2019) highlights the positive outcomes of CBC. While there is a common belief that schools are often resistant to change, it is important to note that some countries have successfully implemented CBC, demonstrating that change is indeed achievable. In the US, the Department of Education and related accredited learning institutions are slowly but yet successively aligning their processes and expectations regarding competency-based education.

Akinrinola (2020) contends that the regional perspective of CBC highlights the importance of developing the skills and competencies necessary for individuals to excel in their careers. In this regard most developing countries and especially the African states struggle to be abreast with these new demands which have been necessitated by the technological advancement and globalization. While this fact reigns, most African countries which are trying to adopt CBC are pressing on albeit with a myriad of challenges. The implementation of CBC in Cameroon was driven by the objective of producing graduates equipped with the essential knowledge, skills, and attitudes required to address the economic challenges of the contemporary society (Cheptoo R & Ramadas, 2019).

According to Cheptoo and Ramadas (2019), it is argued that CBC facilitates the alignment of education with the evolving social and economic demands of the community. It promotes the mastery of skills and knowledge, fostering self-confidence in problem-solving, which is highly valuable in the job market. The implementation of CBC in Africa has witnessed notable success, and the Republic of Rwanda stands as a prominent example. CBC in Rwanda was implemented in primary schools in an effort to transform education in the country hence contributing to high standards and levels of achievement among learners. A study by Ndiokubwayo et al. (2018) explains that the introduction of CBC in Rwanda was purposed to provide a new curriculum framework that could link theory to practice hence to avoid dichotomy between knowing "that" and knowing "how". This move intends to raise the capabilities of learners and employability skills of graduates and enhance the practical application of knowledge.

Kafyulilo et al. (2013) reports that in Tanzania implementation of CBC has had to face various challenges. This indicates that the implementation of CBC worldwide is accompanied by initial challenges and hurdles that countries need to address in order to achieve successful implementation of competency-based education. A separate research conducted in Tanzania examined the challenges associated with implementing a competence-based curriculum in secondary schools. The study revealed that a significant majority (86%) of the teachers interviewed lacked a comprehensive understanding of the objectives of a competence-based curriculum. Furthermore, the study found that a significant majority (78%) of the reviewed lesson plans did not demonstrate the characteristics of a competence-based lesson plan. Additionally, the level of student engagement in classroom activities, as observed by the researchers, was generally quite low. These findings highlight the challenges that teachers faced in implementing a competence-based curriculum in the selected schools, Komba and Mwandaji (2015).

The implementation of Kenya's CBC began in 2018, aiming to address the contemporary demands of the job market, which prioritize functional competencies over a knowledge and content-based curriculum framework. This is because the CBC emphasizes the abilities and achievements of learners, rather than solely focusing on their expected knowledge (Isaboke, Mweru, et al., 2021; Njeng'ere & Ji, 2017).

The implementation of CBC employed a phased approach starting with all Pre-primary school centres and lower primary grades (G1-G3). The shift is informed by national values, including but not limited to; Love, Responsibility, Respect, national Unity, Peace,

Patriotism and Integrity. CBC represents a shift in perspective towards fostering the acquisition of essential learning outcomes or competencies that each learner should cultivate. These competencies encompass effective communication and collaboration, the development of critical thinking and problem-solving abilities, a high level of imagination and creativity, citizenship, learning to learn, self-efficacy, and digital literacy.

CBC differs from the defunct 8:4:4 system of education in the manner that promotes smooth transitional structure from one grade to another. For instance, Early Childhood Development Education (ECDE) is structured into two levels: Pre-primary 1 and Pre-primary 2, commonly referred to as PP1 and PP2. In the same vein, the primary education system now designates its various academic stages as grades. We have grades 1-3 forming lower primary and grades 4-6 forming upper primary whereas grades 7-9 comprises of junior secondary and grades 10-12 is the senior secondary school. Under this system *subjects* are now referred to as *learning areas*, *topics/sub-topics* are now known as *strands/sub-strands* while *learning outcomes* replaces *lesson objectives*. The implementation of the Competency-Based Curriculum in schools in Kenya has the objective of providing learners with practical skills and knowledge to apply in real-life situations. However, there have been challenges in effectively implementing the curriculum in Kenyan schools, as highlighted by KNUT, 2019 (Isaboke et al., 2021).

Momanyi and Rop (2019) conducted a study to examine the implementation of the Competency-Based Curriculum in Kenyan schools and found that teachers were insufficiently prepared for its implementation. This means that there is a need to understand

whether Implementation of CBC is on the success track or not. The Curriculum is said to be important for countries working to become middle and high industrialized economies because of its emphasis on competencies rather than knowledge and sheer memory of facts. Recognizing that Competency-Based Education (CBE) represents a shift in thinking within the Kenyan education system, as outlined by the Kenya Institute of Curriculum Development (KICD) under the guidance of the Ministry of Education in 2017, it became evident that a reassessment of the role of higher learning institutions was necessary to accommodate this new educational paradigm in Kenya.

Competency-based education places a primary emphasis on the acquisition of competencies that equip learners to effectively navigate real-life challenges. Additionally, CBE prioritizes the attainment of desired learning outcomes that facilitate behavioral change and enable individuals to effectively tackle real-world tasks. It is therefore assumed that higher learning institutions in Kenya are to provide clear pathways and specializations to help individuals pursue their careers hence providing market informed courses (KICD, 2017). Kenya is currently implementing the CBC as a means to harness the potential of its rapidly growing population. The CBC is an educational system that prioritizes the abilities and achievements of learners, rather than solely focusing on their knowledge and understanding (Isaboke et al., 2021; Njeng'ere & Ji, 2017).

2.2 Differences in Implementation of CBC in Public and Private Pre-primary Schools

The implementation of CBC in early childhood education (preschools) presents distinct challenges and opportunities depending on whether the institution is public or private.

Research studies have highlighted these differences, focusing on teacher preparedness, resources, curriculum delivery, and parental involvement, all of which shape the effectiveness of CBC implementation.

One of the most significant factors that influences the success of CBC implementation is teacher preparedness. A study by Ochieng' (2020) found that while teachers in both public and private preschools are generally aware of the CBC framework, there are notable differences in how prepared they are to implement it effectively. Teachers in private preschools tend to receive more targeted training and professional development compared to their public counterparts. Many private schools provide ongoing workshops, training programs, and even attend seminars specifically aimed at CBC, which enhances their ability to deliver the curriculum effectively (Ngugi, 2021). In contrast, teachers in public preschools often face constraints due to limited access to specialized training. The Ministry of Education has made efforts to train preschool teachers, but these initiatives have not always been consistent across the country. Public preschools in rural or underfunded areas are particularly disadvantaged, as they struggle with both teacher shortages and inadequate professional development programs (Mutisya & Kamau, 2019). As a result, public school teachers may be less equipped to adopt the learner-centered methodologies that CBC demands.

The availability of resources and infrastructure plays a pivotal role in implementing the CBC. Wambugu et al. (2022) highlight that private preschool tend to have better access to educational materials, such as learning toys, books, and digital resources, which facilitate interactive and hands-on learning, essential components of the CBC framework. With

smaller class sizes and the flexibility to purchase or develop resources that align with the CBC, private schools can provide a more conducive environment for competency development. In contrast, public preschools face significant challenges with overcrowded classrooms, limited learning materials, and outdated facilities (Odhiambo, 2020). Inadequate physical infrastructure, such as poor sanitation or lack of playgrounds, can hinder the interactive and experiential learning that CBC promotes. Research by Musyoka et al. (2019) indicates that the lack of resources in public schools results in teachers relying more on traditional methods, such as lectures and rote memorization, which do not align well with the competency-based approach.

The implementation of CBC requires a shift from traditional teaching methods to more interactive, student-centered approaches. Okumu (2021) emphasizes that private preschools, due to their flexibility and resource availability, are able to integrate various forms of assessment and instructional strategies, including project-based learning, role-playing, and peer collaboration. These strategies support the development of critical thinking, creativity, and problem-solving skills, which are core elements of the CBC. Public preschools, however, often experience limitations in curriculum delivery due to class size and teacher-to-student ratios. Juma (2020) found that public preschools tend to follow a more structured, didactic teaching approach, where teachers are primarily focused on ensuring that students are meeting minimum academic standards. This can lead to the neglect of the broader competencies, such as emotional and social development, that the CBC emphasizes. The lack of individualized attention in overcrowded classrooms further exacerbates this challenge.

Parental involvement is another key factor in the effective implementation of CBC. Njiru (2021) found that private preschools are generally more successful in engaging parents through regular communication, parent-teacher meetings, and involvement in school activities. This active collaboration helps create a learning environment that extends beyond the classroom, supporting children's competency development at home as well. Private schools are more likely to have parent-focused events that help them understand the goals of CBC, which reinforces the continuity of learning. On the other hand, Kariuki (2020) discovered that in many public preschools, particularly those in marginalized areas, parental involvement is minimal due to factors such as low literacy levels, socioeconomic barriers, and lack of time. Public preschools also tend to have less frequent communication with parents regarding the progress of their children, limiting the partnership between home and school in nurturing competencies.

The Kenyan government has taken significant steps to roll out the CBC across the country, including developing guidelines, providing curriculum documents, and offering some financial support for preschools. However, Munyua (2022) observes that while the government's support is often more substantial in public schools, its effectiveness can vary depending on the region. Monitoring and evaluation of CBC implementation is also inconsistent, particularly in rural areas where resources are scarce. In private schools, while there is less direct government intervention, they are often better equipped to handle curriculum changes due to their autonomy and ability to allocate resources towards specialized staff and training. According to Nyambura (2021), private preschools are often

quicker to adapt to educational reforms, including CBC, because of their ability to self-fund and hire qualified experts.

The implementation of the Competency-Based Curriculum (CBC) in preschools across Kenya demonstrates notable differences between public and private institutions. Comparative studies examining the implementation of CBC in these two types of schools have yielded contrasting findings, with variations depending on location. For instance, Awili and Begi (2021), in their study on the relationship between instructional leadership and CBC implementation in early childhood education in Nairobi City County, found that public schools exhibited a higher level of CBC implementation compared to private schools. This difference was attributed to the greater support that public school teachers received for CBC implementation compared to their counterparts in private schools. On the other hand, Owour (2022), in his comparative study of factors influencing CBC implementation in public and private primary schools in Mbita Sub-County, found that private schools had better access to resources, which enabled them to implement CBC more effectively than public schools.

Research by Ochieng (2020), Wambugu et al. (2022), and others underscores these disparities, highlighting the need for more consistent government support, targeted training for teachers, and resource allocation to ensure that all schools, regardless of their public or private status, can successfully implement the competency-based curriculum and foster the holistic development of young learners.

2.3. Availability of Instructional Resources and implementation of CBC.

The implementation of an educational curriculum typically involves the practical application of officially approved courses of study, syllabi, and subjects. There are several factors related to curriculum implementation, including but not limited to the availability of resources and facilities, well-trained teachers, and the school environment (Luembo et al., 2023). A study by Naz (2016) reported that availability of instructional materials did influence learners' academic achievements in *Muzaffarabad* District. The study recommended that all secondary schools should be provided with IT facilities, libraries, course books and teachers' teaching materials. The current study focused on contextual factors affecting CBC implementation at pre-primary level. According to Esongo (2017) the presence of teaching-learning resources is closely linked to the effectiveness of the school system.

The results highlight the importance of sufficient teaching and learning resources for the successful implementation of the curriculum. This understanding guided the present study, which focused on examining the availability and utilization of resources to ensure effective implementation of CBC in pre-primary schools in Embu County. In Nyamira County, a study conducted by Okongo et al. (2015) examined the availability of teaching and learning resources in preschool centres. The aim of this study was to investigate the impact of teaching and learning resources availability on the implementation of inclusive education in a preschool centre. The research employed a descriptive survey design and involved a target population of 134 head teachers, 402 preschool teachers, 12 education officers, and 938 preschool parents. The findings indicated that there was a lack of sufficient teaching

and learning resources, and this inadequacy negatively impacted the implementation of inclusive education, which also extends to the implementation of CBC.

A study conducted by Njoroge (2019) examined the impact of teaching and learning resources on the academic performance of children in lower primary school. The inadequate availability of teaching and learning resources in most schools in Kenya, especially in lower-grade primary schools, has been attributed to poor planning and corruption during the process of acquiring learning resources. The findings of the study revealed that a significant number of books used in the schools were outdated and in need of upgrading. This was true with other TLRs, which also were inadequate to guarantee effective teaching and learning process. The study therefore underscores the role TLRs play in curriculum implementation. These revelations, emphasize the very need for curriculum implementation stakeholders putting in place structures and plans of funding and providing appropriate TLRs in schools especially when rolling out a new programme of education.

According to Mang'ui et al. (2021) school environment and teacher performance are key factors in any learning institution seeking to have competitive edge with others. The objective of the study was to examine the impact of the availability of teaching and learning resources on teacher performance in public schools within Kitui county. The study focused on 400 secondary schools and involved 2417 teachers as participants. The findings of the study indicated a significant positive correlation between the availability of teaching and learning resources and teachers' performance. This essence translates to learners' learning

outcomes. The above revelations underpin the importance placed by TLRs thus the need for this study to understand its toll in CBC implementation among pre-primary schools.

A study by Gichuki (2015) on the impact of learning materials on the classroom performance of preschool children in Embu West found that 80% of private preschools had some play and learning materials, although they were insufficient. In contrast, public preschools had the least amount of materials necessary for children's play and learning. While the study focused on the availability of resources, it did not address the adequacy of these materials as a constraint in the implementation of the CBC.

2.4. Teachers' Competence and Implementation of CBC

Tutors and teachers have a crucial role in curriculum implementation as they provide essential guidance and support. They impart in learners necessary skills and concepts that help to develop their potentials (Syomwene,2013). Shifting from content-based to competency-based learning necessitates that teachers initially grasp the change in paradigm from teaching to facilitating learning. Consequently, teachers require knowledge and skills to empower learners in utilizing suitable pedagogical approaches, creating effective lesson plans, employing appropriate assessment tools, and selecting instructional materials that cater to the diverse needs of pupils (Fink et al., 2013).

In New Zealand there are new ways of thinking as far as school curricula is concerned. All curricula suggests a new thinking about how and what the student should achieve and development in the schools. There is a shift as it were in education that is now more focused

onto the future laying greater emphasis on enabling students to acquire the pertinent competencies outlined in the government's the 2007 document (Harris, 2017). This explains the need to interrogate teachers' efficacy in adopting approaches that come with the CBC in promoting skill development among the learners. This study investigated contextual factors associated with smooth CBC implementation in Embu county.

The study conducted by Sabola (2017) in Malawi highlighted that the competencies of teachers can have a substantial impact on the successful implementation of a curriculum. The findings revealed that a majority of the teachers lacked sufficient training in curriculum implementation. Esau and Mpofu (2017) conducted a review of the implementation of the new primary curriculum in Zimbabwe and found that there was inadequate implementation of the curriculum in lower primary schools due to teachers' lack of competence. The findings from Malawi and Zimbabwe highlight the importance of teachers' competency in ensuring the successful implementation of a curriculum. Based on this understanding, the present study is grounded in the significance of teachers' competence.

A survey conducted by Mulenga and Kabombwe (2019) in Zambia focused on teachers' competencies, revealing that a significant majority (67%) of History teachers lacked a sufficient understanding of the concepts of competency-based or outcome-based curriculum. This indicates that the level of preparedness among teachers was insufficient. Therefore, the study proposed that the Ministry of General Education (MoGE) should enhance and strengthen the in-service training programs as well as implement continuous professional development (CPD) initiatives for teachers. This was due to the inadequate

training of teachers. As such, they lacked the ability to implement the Curriculum (Kafyulilo et al., 2013).

The study conducted by Komba and Mwandanji (2015) in Tanzania revealed that a large proportion (86%) of teachers lacked a sufficient understanding of the Competency-Based Curriculum (CBC), as observed in the curriculum implementation. The study, therefore, recommended that regular training be provided to teachers to equip them with the necessary skills and competencies for the successful implementation of the new curriculum. The findings highlighted that teachers lacked the appropriate skills, leading them to continue using traditional methods of teaching and assessment.

In Kenya, a study conducted by Waweru (2018) examined the implementation of CBC in lower primary schools and found that 98.8% of the teachers were unprepared to implement the competency-based curriculum. This brings into question the readiness and effectiveness of teachers to implement CBC in our schools. This situation could also be applicable in the context of pre-primary schools within the CBC framework. A study by Koskei and Chepchumba (2020) in the lower primary schools in Nakuru County, Kenya established that teachers' competency influenced implementation of CBC. The findings indicated that the pedagogical competencies of teachers have a substantial impact on the overall implementation of the competency-based curriculum. The studies suggested that it is crucial to provide sufficient and effective training to facilitators and trainers, as well as regular training sessions and re-training for teachers, in order to ensure efficient implementation of the curriculum. The study specifically examined lower primary school teachers, and its findings may not be directly applicable to pre-primary schools. In a similar

vein, Mary et al. (2017) discovered that a significant portion of teachers did not employ learner-centered approaches such as inquiry, discussions, and demonstrations. As a result, the study recommended further training for teachers in learner-centered pedagogy.

Momanyi and Rop (2019) investigated lower grade education teachers' understanding of CBC and their preparedness to re-align teaching and learning approaches to the demands of CBC and their capacity to evaluate a CBC curriculum. They established that teachers are inadequately prepared for curriculum implementation. The teachers' understanding of CBC is unclear, which has affected their ability to effectively deliver and evaluate the curriculum. The study recommends that the Kenya Institute of Curriculum Development (KICD) and the Ministry of Education should organize additional training sessions to address the identified capacity gaps in pedagogy, assessment, and the preparation of teaching materials. The study specifically examined the implementation of CBC among lower primary school teachers, and its findings may not be directly applicable to pre-primary teachers. Most of the foregoing studies mainly focused on higher and lower grades, but the current study focused on pre-primary grades, which are the foundation level of curriculum implementation.

2.5 School Infrastructure and Implementation of CBC

School infrastructure is critical in the smooth functioning of a school. It includes but is not limited to the availability of clean water, electricity, classrooms, furniture, play space, internet connectivity. In competency-based education reforms, students are expected to show their mastery of competencies through assessments that require the application of

knowledge. If necessary, students are given additional time and personalized instruction to achieve mastery. Therefore, effective implementation of the curriculum involves a complex interplay of various factors, as shown by the study conducted by (Scheopner Torres et al., 2018).

Muneja (2015) conducted a study to explore the experiences of secondary school teachers in Tanzania regarding the implementation of competency-based education (CBE). The findings revealed that the implementation of CBE encountered several challenges, primarily the lack of quality textbooks and adequate infrastructure.

Wambua and Samuel (2019) conducted a study in Machakos County, Kenya, to examine the constraints affecting the successful implementation of the competency-based curriculum and found that teachers were not adequately prepared for the implementation of the new curriculum, and there was also a lack of adequate infrastructure. The current study interrogated availability of infrastructural as a constraints in implementation of CBC. Ngeno et al. (2021) conducted a study to investigate the possible correlation between the availability of physical infrastructure and the implementation of the competency-based curriculum. The study included Curriculum Support Officers (CSOs), head teachers, and grade one teachers as its target participants. The findings of the study indicated that the availability of infrastructure had a moderately positive influence on the implementation of CBC, with a correlation coefficient of 0.36.

In Kenya, the Ministry of Education (MoE) report cited by Karanja (2018) recommends class sizes for different school grade levels.. At the pre-primary school level, the

recommended teacher-pupil ratio is 1:25, Due to the government's decree on 100% transition and enforcement of compulsory basic education programmers, pupils' enrolment has increased tremendously with ratios as high as 1:50 in preschool The classrooms have not been equally increased to factor in this increased enrolment. This scenario directly or indirectly will definitely have an implication on the infrastructural and other pertinent resources. The availability of adequate school infrastructure is crucial in implementation of CBC.

2.6. Summary and Gaps in Reviewed Literature

The aim of this study was to explore the contextual constraints affecting the implementation of the Competency-Based Curriculum (CBC) in pre-primary schools in Kenya, with a particular focus on Embu County. The county has consistently recorded low performance in national assessments related to early years CBC implementation. A review of existing literature revealed significant research gaps, as most studies have concentrated on CBC implementation at the primary and secondary school levels, with limited in-depth research addressing its implementation in preschools.. Among other findings, Esongo (2017) highlighted the correlation between the availability of teaching-learning resources and the overall efficiency of the school system. This study emphasized the importance of having sufficient teaching and learning resources to ensure the effective implementation of the curriculum in schools.

Availability of and adequate TLRs has also been identified as an impediment to effective content delivery by teachers in most secondary schools. However, the majority of the

reviewed studies primarily concentrated on primary and secondary schools. This knowledge gap prompted the current study, which specifically explores the availability of resources for the effective implementation of CBC at the pre-primary school level in Embu County. Similarly, Waweru (2018) conducted a study on the implementation of CBC in lower primary schools in Kenya, revealing that an astonishing 98.8% of the teachers lacked adequate preparation to implement the competency-based Curriculum.

Regarding primary school grade teachers, this aspect was addressed. Additionally, Momanyi and Rop (2019) conducted a study investigating the extent of implementation of the CBC in Kenyan schools, revealing the inadequate preparedness of teachers. While studies have addressed the preparedness of primary school teachers, the readiness of pre-primary teachers who play a foundational role in the education system has largely been overlooked. In response to this gap, the current study seeks to explore the preparedness of pre-primary teachers for CBC implementation.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.0 Introduction

This chapter provides a comprehensive overview of the research methodology employed in the study. It includes a detailed description of the research design, variables, study location, target population, sampling techniques, and the determined sample size. Similarly, the researcher provides details on the data instruments used, the pilot study conducted, as well as the reliability and validity of the study instruments. Further, it

describes how data collected was analyzed. Finally, it presents the ethical and logistical considerations.

3.1 Research Design

This study utilized an Ex-Post-Facto research design to investigate contextual constraints that may influence the implementation of the CBC in pre-primary school centers in Embu County, Kenya. *Ex -post facto* study or after-the-fact research is a category of research design in which the investigation starts after the fact has occurred without interference from the researcher. It is a design where the study tries to predict the causes on the basis of actions that have already occurred; the researcher cannot manipulate or change the already occurred actions or behaviour. The chosen design was deemed appropriate for the current study as it was not possible for the researcher to manipulate the study variables that had already produced their effects.

3.2 Research Methodology

In this study, a mixed methods approach incorporating both qualitative and quantitative methods was employed to gather relevant data. Qualitative methods were utilized to gather data from the study subjects using qualitative data techniques. This data was then triangulated to assess the level of CBC implementation in the study area. The study collected and organized quantitative data for analysis, aiming to assess the impact of specific study variables and groups of variables in relation to the study objectives.

Inferential statistics were employed to determine the extent of influence of the independent variables.

3.3 Study Variables

Independent variables to this study were; difference in implementation of CBC in public and private preschools ,availability of instructional resources, teacher-competency in CBC and school infrastructure. The indicators used in the study included teachers' proficiency in creating CBC professional records, utilization of CBC teaching, learning, and assessment approaches, and their ability to employ a diverse range of CBC instructional resources. Additionally, indicators for school infrastructure encompassed the availability of sufficient classrooms, sanitation facilities, and furniture. Connectivity to electricity and internet were also considered as indicators.

In the current study, the dependent variable was implementation of CBC in pre-primary schools. This was measured through indicators such as the availability and utilization of CBC professional documents by teachers, the implementation of learner-centered teaching pedagogy to facilitate learning, and the use of formative and summative assessments for children's evaluation. Effective use of CBC instructional resources and learning taking place in appropriate infrastructure.

3.4 Study Locale

The study was conducted in Embu County, which was purposely selected as the research site. This choice was informed by National assessment reports on monitoring learner

achievement at Grade 3, which revealed that in 2018, Embu County exhibited lower literacy and numeracy levels compared to the national average for the first cohort of CBC implementation. Numeracy and literacy skills are fundamental learning outcomes in the early grades, with a National assessment of general learning outcomes conducted at Grade 3. For example, the National Assessment of Mathematics Competency revealed that Embu County experienced the largest national decline, dropping by 25.25% from 26.1% in 2016 (before CBC) to 0.9% in 2018 (after the introduction of CBC). A similar pattern emerged in English, where pupils' attainment of level four competency fell by 41.4 percentage points, from 43.3% in 2016 to 1.9% in 2018 (KNEC, 2020). These findings suggest that the county may be among those struggling with the implementation of CBC. The current study was driven by these concerning trends in early learning achievements in Embu county.

3.5 Target Population

The scope of this study encompassed both public and private pre-primary schools in Embu County, totaling to 394 public schools and 221 private schools. . All 615 head teachers and 615 PP2 teachers were included, resulting in a total target population of 1,230, as detailed in table 1 .

3.6 Sampling Techniques and Sample Size

In this section the researcher discusses the sampling techniques used in the study and describes the sample size.

3.6.1 Sampling Technique

The study employed purposive sampling to select the study locale, which involved targeting all pre-primary school centers in the county. The researcher employed a simple

random sampling approach to select a sample size of 10% of pre-primary school centers, encompassing both public and private schools. Each category of pre-primary schools comprised a 10% sample size. The sampling frame below illustrates the sampling and sample size.

3.6.2 Sample Size

The table below illustrates the sampling and sample size. The percentage of the sample size is also computed and presented.

Table 1

Sampling Frame

HEADTEACHERS			
	Target population	Sample size	%
Public	394	40	10%
Private	221	22	10%
Sub-total	615	62	10%
preschoolTEACHERS (PP2)			
Public	394	40	10%
Private	221	22	10%
Sub-total	615	62	10%
Total	1230	124	10%

The study sample included a total of 62 PP2 teachers—40 from public preschools and 22 from private preschools—as well as 62 headteachers, comprising the same distribution: 40 from public preschools and 22 from private preschools.

3.7 Research Instruments

The researcher employed three data collection tools, namely a questionnaire, interview schedule, and observation check-list, to gather data on the contextual constraints affecting the implementation of CBC in pre-primary school centres in Embu County. To collect information on teachers' training and competence as well as teacher-child ratio to determine class size, a questionnaire was administered to pre-primary school teachers. As Gitiha et

al. (2024) highlighted, questionnaires are effective in gathering large amounts of information from a considerable number of individuals within a short period of time.

Interviews schedule was used to obtain information from head teachers on school infrastructure, instructional resources and the constraints affecting of CBC implementation. Cresswell (2012) explains that interviews can collect sufficient and accurate information since researchers can ask follow-up questions for clarifications to the questions. This informed the use of interview schedules for more accurate data.

The researcher employed an observation check-list to gather information regarding various aspects of CBC implementation, such as the adequacy of teaching-learning resources. According to Orodho (2009), observation check-lists are recommended as they allow researchers to gather factual information that can be promptly recorded and compiled for analysis. The study endeavored to obtain information on the implementation of and the contextual factors affecting its implementation among pre-primary school centres in Embu County.

3.8 Pilot Study

In the pilot study, two pre-primary schools, one private and one public, were selected to assess the efficacy of the research instruments. This allowed the researcher to evaluate the feasibility and reliability of the instruments. The schools that participated in the pilot study were not included in the final study sample. Mugenda and Mugenda (2013) emphasize the

importance of piloting research instruments as it enables the researcher to assess the validity and reliability of the instruments and identify any potential ambiguities.

3.9 Validity and Reliability

The following sections outline the procedures for assessing the validity and reliability of the research.

3.9.1 Validity of the Instruments

The researcher established content validity by ensuring that the instruments effectively captured all the items that aligned with the objectives of the study. Content validity evaluates the degree to which a test accurately represents all dimensions of the construct being measured. To ensure valid results, the content of a test, survey, or measurement method should encompass all relevant aspects of the subject under examination. The researcher in consultation with experts constructed data instruments cognizant of the fact that all aspects to be measured had been duly covered.

3.9.2 Reliability of the Instruments

The reliability of the data instruments was assessed using the test-retest technique. The researcher administered the questionnaire to pre-primary school teachers from two pilot public and private schools to measure the consistency and stability of the responses over time. The two schools involved in the tests were not included in the study sample. The results obtained from the tests were computed and compared using Cronbach's alpha coefficient test. A coefficient of $\mu \geq 0.75$ was obtained and deemed acceptable.

3.10 Data Collection Procedures

Once the necessary authorizations were obtained, the researcher collected data from the sample schools by visiting the pre-primary centers during the mornings. The questionnaire was distributed to the participating pre-primary school teachers, who were asked to complete and return it on the same day to maximize on the response rate. While they filled the questionnaires, the researcher sought audience with the head teachers or their representatives for an interview in their offices on CBC implementation constraints. All these were kept brief and precise to avoid apathy from the respondents. Afterwards the researcher, with the assistance of one of the teachers, conducted classroom observations in the Pp 2 preschool classes to assess various indicators of implementation of CBC, the availability of teaching-learning resources, and the teacher-to-child ratio. On average, observing two schools per day was effective.

3.11 Data Analysis

The data generated included both quantitative and qualitative data. Quantitative data was analyzed using T-test and the Pearson Correlation analysis. Qualitative data were transcribed, analyzed, and thematically presented. Verbatim quotes were discussed and conclusions drawn. The findings were discussed thematically, aligned with the study objectives, and presented using figures, frequency tables, and graphs.

3.11.1 Alternative Hypotheses

The alternative hypotheses of the study were;

Ha₁: There is a significant difference in the implementation of CBC between public and private pre-primary schools in Embu County.

Ha₂: There is a significant relationship between availability of instructional resources and implementation of CBC in pre-primary schools.

Ha₃: There a significant relationship between teachers' competency in CBC and its implementation among pre-primary schools.

Ha₄: There is a significant relationship between school infrastructure and implementation of CBC among pre-primary schools.

3.12 Logistical and Ethical Considerations

The logistical and ethical considerations adhered in the study are explained below.

3.12.1 Logistical Considerations

The researcher ensured due diligence of good research practice is adhered to before and after the study. The required permissions were secured from the Graduate School at Kenyatta University and the National Commission for Science, Technology, and Innovation (NACOSTI) in compliance with the study requirements. Following these authorizations, the researcher sought additional approval from the County Education Directors' office to conduct data collection in pre-primary schools within the county.

3.12.2 Ethical Considerations

The researcher adhered to the highest standards of best practices during data collection in the field. All participants' rights and space was guaranteed and ensured. Ethical considerations including but not limited to participation consent, privacy, anonymity, confidentiality were adhered to before, during and after the study. Participants were informed about the voluntary nature of their participation and were asked to provide consent by completing a consent form. They were assured that all information provided would remain confidential and be used exclusively for research purposes. To maintain confidentiality, questionnaires and schools sampled were coded. The collected data was securely stored on google drive and utilized solely for research purposes.

CHAPTER FOUR

FINDINGS, PRESENTATIONS AND DISCUSSIONS

4.0. Introduction

In this chapter, the results, findings, and discussions of the study are presented. The researcher organizes the findings thematically based on the study hypotheses. The study aimed to achieve the following objectives:

- i. Establish the difference in implementation of CBC between public and private pre-primary schools in Embu County
- ii. Determine the relationship between availability and use of instructional resources on implementation of CBC in pre-primary schools in Embu County.
- iii. Explore the relationship between teachers' competencies in CBC and its implementation in pre-primary schools in Embu County.
- iv. Analyze the effects of school infrastructure on implementation of CBC in pre-primary schools in Embu County.

4.1 Demographic Information

This section presents details regarding the participants' characteristics, including the type of preschool, gender, training and experience, and age. The researcher describes each of them as provided below.

4.1.1 Type of School

The distribution of preschools by management type, whether private or public, is depicted in Table 2.

Table 2:

Distribution of Preschools as Per Type of Management

Type of School		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Public	40	64.5	64.5	64.5
	Private	22	35.5	35.5	100.0
	Total	62	100.0	100.0	

From the table 2, it can be deduced that majority of the preschools sampled were public (64.5%) while private preschools accounted for a smaller percentage (35.5%). This means that most of the preschools are managed and run by the public/government. The government focuses more resources on public schools hence its expected that implementation of CBC is well funded and managed in public schools. Figure 4.1 below illustrates the distribution of preschools per type of management.

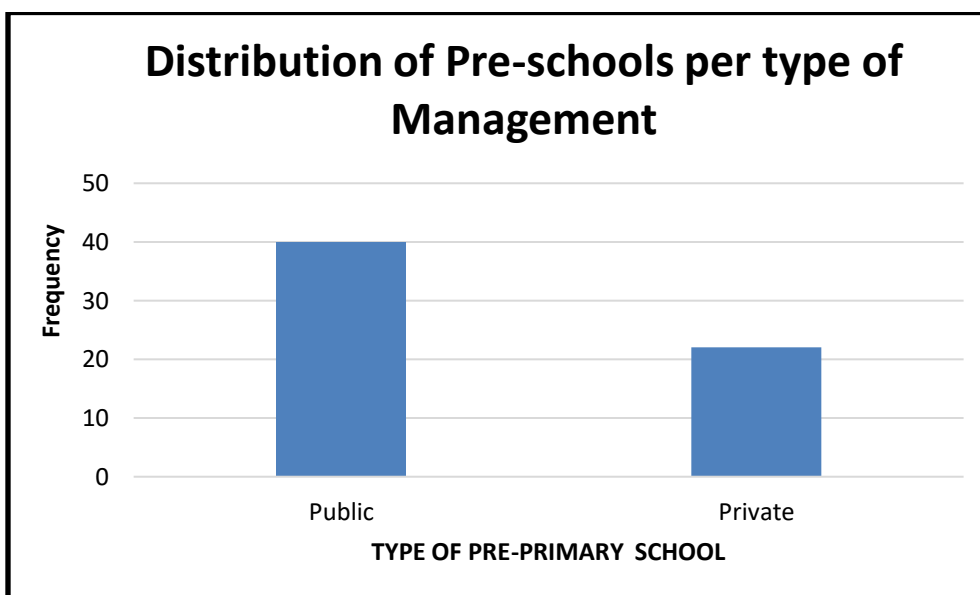


Figure 2: Distribution of preschool centers Per Type of Management

Figure 2 above indicates that preschools were not equally distributed in terms of type of management. There were more public than privately run pre-primary schools.

4.1.2 Gender Distribution

The study sought to establish the gender distribution of the respondents.

Table 3 presents the distribution of teachers as per gender.

Table 3: Gender Distribution of Pre-Primary School Teachers

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	5	8.1	8.1	8.1
	Female	57	91.9	91.9	100.0
	Total	62	100.0	100.0	

Table 3 above indicates that a large proportion of the respondents were female teachers 91.9% , highlighting that the male gender has yet to make significant strides in the field of children's services. The same data is visually represented in Figure 3.

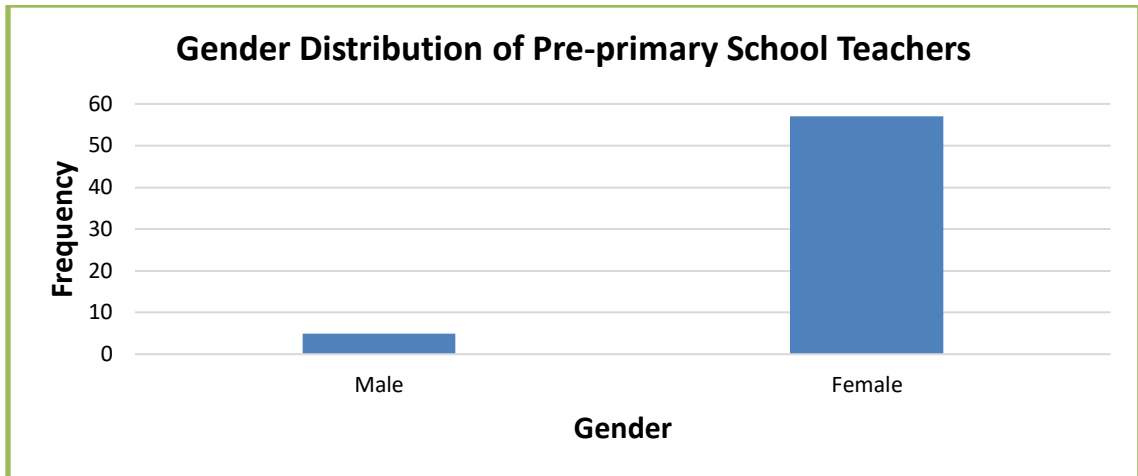


Figure 3: Distribution of Pre-Primary School Teachers Per Gender

Figure 4.2 provides information on gender distribution among male and female teachers. In the county, there were a higher number of female pre-primary school teachers compared to male teachers. This raises the question of whether both the boy child and the girl child have sufficient father figures. The boy needs to model the male teacher in the event some do not enjoy the privilege of both parents.

4.1.3 Professional Training Levels of Pre-primary School Teachers

The table 4 presents teachers' professional distribution among the pre-primary schools in Embu county.

Table 4:

Professional Training Levels of Pre-primary School Teachers

Training levels		Frequency	Percent	Valid	Cumulativ
Valid	Certificate	12	19.4	19.4	19.4
	Diploma	37	59.7	59.7	79.0
	BED	12	19.4	19.4	98.4
	Masters	1	1.6	1.6	100.0
	Total	62	100.0	100.0	

Table 4 shows that the majority of the teaching staff held a diploma, accounting for 59.7%, while 19.4% held a B.Ed degree, and only 1.6% had a master's degree. It is encouraging that most of the teachers (59.7%) have received at least diploma-level training. This indicates that a significant proportion of teachers are equipped with the necessary skills to understand and effectively implement the competency-based curriculum in their schools.

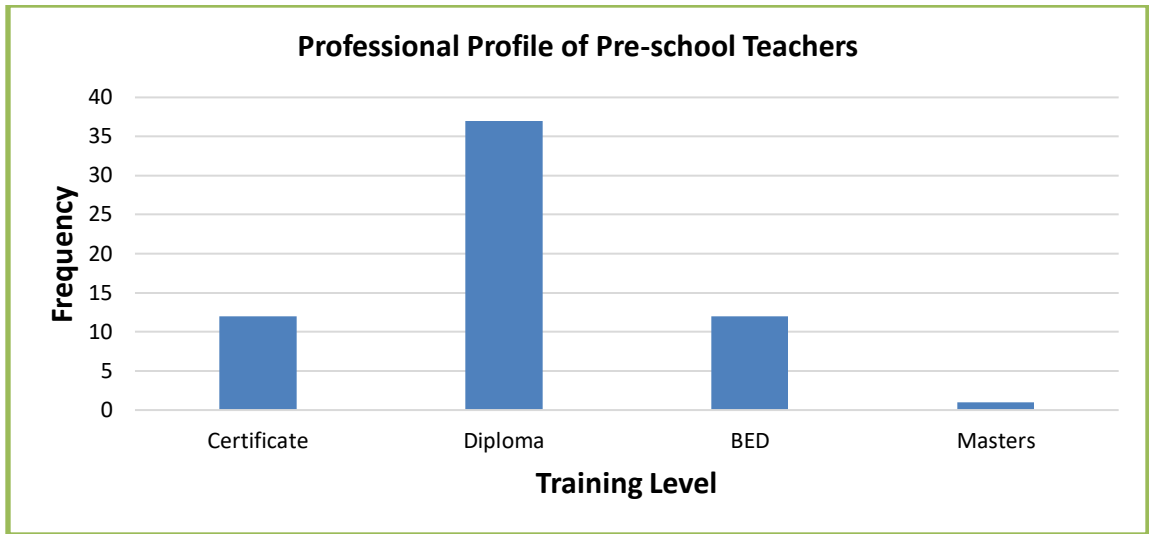


Figure 4: Professional Profile of preschool Teachers

Figure 4 presents the professional profile of the preschool teachers. It affirms as early observed that most of the teachers at this level hold a diploma certificate while those with degree and certificate qualifications are equal at 19.4%. this underscores the fact that even at pre-primary school teachers have progressed to degree attainment which is likely to have a positive impact in curriculum delivery and childcare services.

4.1.4 preschool Teachers' Teaching Experience

Table 5 presents the distribution of teachers based on their years of teaching experience. The illustrations present teachers' experience between - 5 to 20+ years of teaching..

Table 5
preschool Teachers' Teaching Experience

Teaching Experience		Frequency	%	Valid %	Σ%
Valid	Less than 5 Years	7	11.3	11.3	11.3
	6-10 Years	13	21.0	21.0	32.3
	11-15 Years	18	29.0	29.0	61.3
	16-20 Years	13	21.0	21.0	82.3
	Over 20 Years	11	17.7	17.7	100.0
	Total	62	100.0	100.0	

As shown in table 5 above, the majority of teachers (29%) had between 11 and 15 years of teaching experience. 21% of teachers had less than 10 years of experience, while 21% had between 16 and 20 years of experience. A smaller proportion of teachers (17.7%) had over 20 years of teaching experience. Teacher experience plays a significant role in their ability to adapt to new knowledge and teaching methods, such as those envisioned in the CBC. The data is further summarized in Figure 5.

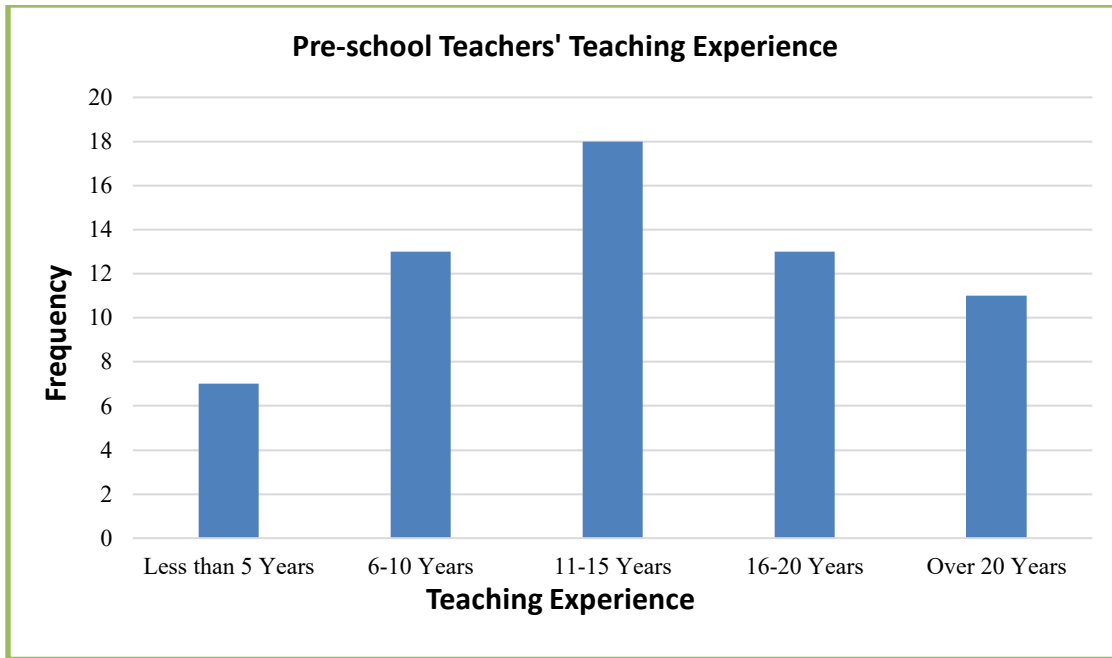


Figure 5 : Distribution of teachers based on years of experience

Figure 5 show that most teachers have between 6 and 20 years of teaching experience, while those with less than 6 years or more than 20 years of experience represent smaller percentages. Research has demonstrated a strong correlation between teacher experience and student achievement in both formative and summative assessments. Akala (2021) conducted a study on teachers' experience' influence on learners' achievement in the national examination. The study highlights the importance of teachers' competence in utilizing various instructional approaches for effective content delivery within the classroom. Additionally, it emphasizes that experience equips teachers with the necessary skills and competencies to engage with students and maintain discipline both inside and outside the classroom.

Imonje and Wandera (2019) A descriptive research study was conducted in Machakos County, Kenya, to analyze the effect of teachers' teaching experience on students' performance in English during the Kenya Certificate of Primary Examination (KCPE). The findings revealed a steady improvement in students' performance, with the mean score increasing from 45.8% to 53.2%, in correlation with teachers' experience, which ranged from 4 to 20 years. Teachers with more experience tended to achieve higher mean scores for their students' performance. The study concluded that teachers' experience had a significant impact on students' overall academic performance.

4.1.5 Age groups of Respondents

The researcher sought to analyze how respondents were distributed across various age categories. The age distribution of the respondents is shown in table 6.

Table 6:

Distribution of preschool Teachers Per Age Group

		Age Bracket			
		Frequency	%	Valid %	Σ%
Valid	Below 25	6	9.7	9.7	9.7
	26-30 Years	2	3.2	3.2	12.9
	31-35 Years	22	35.5	35.5	48.4
	36-40 Years	11	17.7	17.7	66.1
	41-45 Years	13	21.0	21.0	87.1
	46-50 Years	3	4.8	4.8	91.9
	51 and Above Years	5	8.1	8.1	100.0
	Total	62	100.0	100.0	

As shown in table 6, the majority of pre-primary school teachers were over 31 years of age. This suggests that the teachers were generally mature, with some being old enough to be parents of the pre-primary school children. This is encouraging, as many are likely young parents with experience in caring for and handling pre-primary school learners. The information is further illustrated in Figure 4.5 .

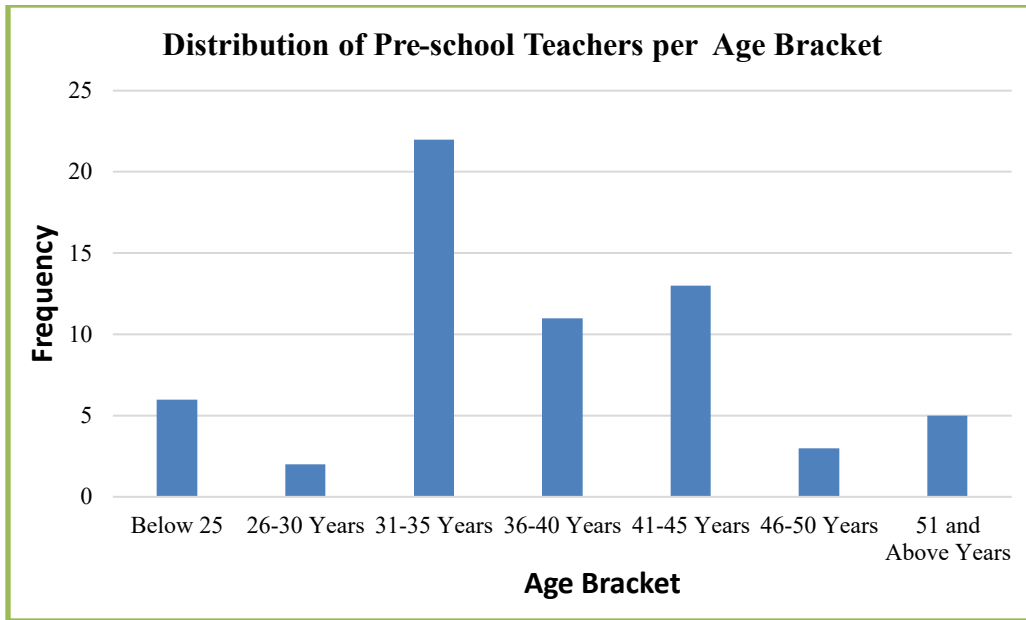


Figure 6: Distribution of preschool Teacher Per Age-Bracket

It is The results in Figure 6 clearly show that the majority of teachers were aged between 31 and 35, with those aged 36 to 45 making up the largest portion of the teacher population. Overall, it can be concluded that most teachers in pre-primary school grades are experienced individuals, well-equipped to manage children effectively due to their age. Research suggests that teachers with more experience tend to perform better than those with less experience, which is often linked to their chronological age. Imonje and Wandera (2019) found a gradual improvement in candidates' performance, with a +7.4 standard deviation in favor of teacher experience, which is often associated with age. This study aligns with the observation that most pre-primary teachers in Embu County are over 30 years old, positioning them well to manage the implementation of CBC at this level.

4.2 Implementation of CBC in Pre-primary Schools

To assess how implementation of CBC was being carried out in preschools the researcher conducted classroom observations using an observation checklist on teachers teaching in PP2 classes. The summarized results are presented in Table 7.

Table 7:

Implementation of CBC in Pre-primary schools.

Implementation of CBC					
	N	Min	Max	Mean	Std.
i. Draws CBC schemes of work	62	1	3	2.74	.510
ii. Develops CBC lesson plans	62	1	3	2.56	.643
iii. Uses CBC lesson plans	62	1	3	2.35	.680
iv. Uses learner centred approaches in teaching	62	1	3	2.66	.571
v. Understands the CBC core values	62	1	3	2.31	.692
vi. Uses competency based assessments	62	1	3	2.29	.755
vii. Keeps up-to date individual records	62	1	3	2.53	.646
viii. Engages learners in hands on experience activities	62	1	3	2.60	.613
ix. Infuses pertinent and contemporary issues	62	1	3	2.32	.647
x. Employs collaborative learning	62	1	3	2.69	.531
xi. Promotes critical thinking	62	1	3	2.39	.636
xii. Uses individualized learning	62	1	3	2.24	.803
xiii. Uses criterion assessment	62	1	3	2.05	.858
xiv. Uses formative evaluations	62	1	3	2.34	.676
xv. Promotes creativity and imagination	62	1	3	2.53	.646
xvi. Engages parents in enhancing learning activities	62	1	3	2.26	.571
xvii. Uses digital devices to enhance learning	62	1	3	1.37	.683
Valid N (listwise)	62			2.36	

A scale of 1 to 3 was used, where 1 represented "never," 2 indicated "rarely," and 3 denoted "always." The individual mean scores show implementation ranged from rarely to always. This is indicative of the fact that most teachers rarely used the indicators above in effectively planning and implementing CBC. On planning it was observed that developing schemes of work had the highest mean at 2.74 from classroom observations and from public and private teacher's responses at mean of 2.67 and 2.86 respectively. Use of digital devices to enhance learning scored the lowest in both teacher's responses and from classroom observations.

Development of lesson plans had a higher mean 2.56 than use of the lesson plans at 2.35 during actual classroom teaching, this may be an indication that the teachers ensure that they have the lesson plans in place due to external and internal supervisor's requirements and not necessarily for use in class.

In Akala (2021's) examination of implementation of CBC challenges, several obstacles to successful implementation were identified. These obstacles include a lack of sufficient human and material resources, a mismatch between content and pedagogical practices, and limited public participation of stakeholders. It was concluded that, CBC implementation was done haphazardly without due preparation hence recommended that schools be adequately funded both and be provided with the necessary infrastructure. These studies do agree with the current study that implementation of CBC has faced various challenges that so far impede its proper implementation.

Overly Implementation of CBC is not off the teething and implementation challenges. Extensive research has revealed significant gaps and challenges in the implementation of the competency-based curriculum in Kenya. Robert and Owala (2021) argues that, challenges such as inadequate learning and teaching materials are key impediments to effective CBC implementation due to inadequate planning. These challenges could negatively affect the smooth implementation of CBC as they frustrate both parents and teacher's efforts as key stakeholders.

Supporting the findings of this study is a research conducted by Sadeq et al. (2021), which examined the factors contributing to the successful implementation of the competency-based curriculum in the English content by teachers in the field. The study utilized a mixed-method design, incorporating both quantitative and qualitative data collection methods. The results of the study indicated that teachers generally held a positive perspective towards the CBC. However, the implementation of CBC encountered various obstacles. The main recommendation was for the government to embrace proper curriculum change procedures and strategies. This therefore means that implementation of CBC can be an expensive venture that requires a colossal amount of resources and preparation.

4.3 Implementation of CBC in Public and Private Pre-primary Schools

The first objective of this study was ;

To establish the difference in implementation of CBC between public and private pre-primary schools in Embu County

To achieve the objective the researcher used questionnaires to collect data from PP2 teachers in private and public preschools. The following table 4.7 presents the results thereof in means and standard deviation.

Table 8:

Implementation of CBC in Public Pre-primary Schools

Implementation of CBC in Public Pre-primary Schools					
	N	Min	Max	Mean	Std. Dev.
i. Draws CBC schemes of work	40	1	3	2.67	.572
ii. Develops CBC lesson plans	40	1	3	2.43	.712
iii. Uses CBC lesson plans	40	1	3	2.47	.716
iv. Uses learner centred approaches in teaching	40	1	3	2.55	.597
v. Understands the CBC core values	40	1	3	2.48	.640
vi. Evaluates learners using competency based assessments	40	1	3	2.55	.597
vii. Keeps up-to date individual records	40	1	3	2.35	.662
viii. Engages learners in hands on experience activities	40	1	3	2.58	.594
ix. Infuses pertinent and contemporary issues in lessons	40	1	3	2.48	.640
x. Employs collaborative learning	40	1	3	2.62	.586

xi. Promotes critical thinking	40	1	3	2.63	.540
xii. Uses individualized learning	40	1	3	2.48	.640
xiii. Uses criterion assessment	40	1	3	2.43	.712
xiv. Uses formative evaluation rubrics	40	1	3	2.48	.640
xv. Promotes creativity and imagination	40	1	3	2.37	.628
xvi. Engages parents in enhancing learning activities at home	40	1	3	2.45	.552
Valid N (listwise)	40			2.44	

Table 8 illustrates responses on the extent to which CBC was being implemented at the public pre-primary grades. It can be observed that, on a scale of 1 to 3, where 1 represents "never," 2 indicates "sometimes," and 3 denotes "always," the mean scores across the items fall within the "sometimes" range. No response to any of the behaviour sought scored a 3 to indicate always. This implied that the implementation of CBC could be described as below expectations. Of particular interest is on the development and use of CBC lesson plans which was rated at 2.43 and 2.47 respectively. On average these means at score 2 which reflects sometimes, hence a low level of lesson planning hence poor implementation of CBC. The lowest mean was on keeping of up-to-date individual records of learners, this negates on of the core areas of CBA that keeping of assessment records of learners. In contrast, the data regarding the implementation of CBC in private pre-primary schools is presented in table (Table 9).

Table 9: Implementation of CBC in Private Pre-primary Schools

Implementation of CBC in Private Pre-primary Schools Mean Scores					
	N	Min	Max	Mean	Std. Dev
i. Draws CBC schemes of work	22	2	3	2.86	.468
ii. Develops CBC lesson plans	22	2	3	2.82	.395
iii. Uses CBC lesson plans	22	1	3	2.14	.560
iv. Uses learner-centered approaches in teaching	22	1	3	2.86	.468
v. Understands the CBC core values	22	1	3	2.00	.756
vi. Evaluates learners using competency based	22	1	3	1.82	.795
vii. Keeps up-to date individual records	22	1	3	2.86	.468
viii. Engages learners in hands on experience	22	1	3	2.64	.658
ix. Infuses pertinent and contemporary issues in	22	1	3	2.05	.575
x. Employs collaborative learning	22	2	3	2.82	.395
xi. Promotes critical thinking	22	1	3	1.95	.575
xii. Uses individualized learning	22	1	3	1.82	.853
xiii. Uses criterion assessment	22	1	3	1.36	.581
xiv. Uses formative evaluations	22	1	3	2.09	.684
xv. Promotes creativity and imagination	22	1	3	2.64	.658
xvi. Engages parents in enhancing learning activities	22	1	3	1.91	.426
xvii. Uses digital devices to enhance learning	22	1	2	1.05	.213
Valid N (listwise)	22			2.22	

The same 1-3 scale was used to measure the extent of CBC implementation in private pre-primary schools. On this scale, 1 referred to "never," 2 to "sometimes," and 3 to "always" for responses to specific items. Three items were rated always (3) namely drawing schemes of work, use of lesson plans and use of learner centred approaches. Accordingly, the overall means for public and private (tables 7 and 8 above) pre-primary school teachers' levels of implementation of CBC were computed at 2.44 and 2.22 respectively. The average score for the implementation of CBC among teachers in public pre-primary schools was higher compared to that of teachers in private schools. However, teachers in private schools performed better than those in public schools in areas such as developing schemes of work

and lesson plans, utilizing learner-centered approaches, and maintaining up-to-date individual records, with mean scores above 2.8. To test the difference between public and private pre-primary schools in terms of the implementation of CBC, the researcher formulated the following null hypothesis:

H₀: There is no significant difference in the implementation of CBC between public and private pre-primary schools in Embu County.

Table 10 presents the results of the t-test conducted to determine if there is a significant difference in the implementation of CBC between public and private pre-primary schools in Embu County.

Table 10:

Implementation of CBC Between Public and Private Pre-primary Schools

Independent Samples Test										
		Levene's Test for Equality of		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error	95% Confidence Interval of the Difference	
									Lower	Upper
CBC	Equal variances assumed	12.3	.001	2.2	60	.033	.228	.105	.018	.437
	Equal variances not assumed			2.7	59.0	.011	.228	.086	.054	.401

As seen in table 10 above, there was a mean difference of 0.228 in the implementation of CBC between public and private pre-primary schools. The p-value of 0.033 indicates a slight significance in the difference of CBC implementation between the two types of schools, with a significance level of $P=0.001$. Therefore, based on the results, the null hypothesis was rejected, and it can be concluded that public pre-primary schools outperformed private pre-primary schools in the implementation of CBC.

The implementation of the Competency-Based Curriculum (CBC) in preschools across Kenya varies significantly between public and private institutions. Comparative studies have revealed contrasting findings, often influenced by location. For example, Awili and Begi (2021) explored the relationship between instructional leadership and CBC implementation in early childhood education in Nairobi City County, concluding that public schools demonstrated a higher level of CBC implementation than private schools. This was attributed to the greater support public school teachers received in implementing CBC. Conversely, Owour (2022), in a study on factors influencing CBC implementation in public and private primary schools in Mbita Sub-County, found that private schools had better access to resources, enabling them to implement CBC more effectively than public schools.

Further research by Ochieng (2020), Wambugu et al. (2022), and others highlights these disparities, emphasizing the need for consistent government support, targeted teacher training, and equitable resource allocation. Such measures are essential to ensure that all

schools, regardless of their public or private status, can effectively implement the competency-based curriculum and promote the holistic development of young learners.

4.4 Availability of Instructional Resources and implementation of CBC

The second objective of this study aimed to;

Determine the relationship between availability of instructional resources on implementation of CBC in pre-primary schools in Embu County.

To achieve the objective the researcher administered a questionnaire to pre-primary teachers as also carried out classroom observation to triangulate the information provided in the questionnaire. The following table illustrates the results of computed means and standard deviations.

Table 11:

Availability of Instructional Resources in Pre-primary schools

Availability and of Instructional Resources					
	N	Min	Max	Mean	Std.
i. CBC designs	62	1	3	2.82	.463
ii. Teachers guidebooks	62	1	3	2.71	.524
iii. Mathematics Activities	62	1	3	2.60	.527
iv. Language Activities course Books	62	1	3	2.60	.527
v. Environmental Activities Course Books	62	1	3	2.45	.592

vi. Science Activities Course Books	62	1	3	2.40	.586
vii. Religious Education Activities Course Books	62	1	3	2.35	.630
viii. Psycho-motor and Creative Activities Course Books	62	1	3	2.08	.753
ix. Digital devices	62	1	3	1.18	.426
x. Charts flash cards	62	1	3	2.32	.594
xi. Play equipment	62	1	3	1.94	.721
xii. Valid N (listwise)	62			2.31	

On a scale of 1-3, where 1 represented "adequate," 2 indicated "inadequate," and 3 meant "not available," the computed mean scores show that only the use of CBC designs (2.82), teachers' guide books (2.71), and the use of mathematics and language activity course books (2.60) were rated above average. The mean scores from the aforementioned table indicate that there was a lack of sufficient instructional resources for the successful implementation of the competency-based curriculum in pre-primary schools. The overall means of Implementation of CBC and availability of resources were calculated at 2.31. The overall mean score shows that availability of instructional resources was inadequate hence constrains the implementation of CBC.

It was further observed that on course books, mathematics and language course books had a higher score at a mean of 2.60 than other activity areas at 2.45, 2.40, 2.35, 2.08 for

environmental, science, religious education and psycho-motor activities respectively. This could be an indication that there is preference for the two activity areas both in resource allocation and teaching. This finding aligns with the research conducted by Konca and İlhan (2021), which examined the preferences of preschool teachers and the views of parents regarding learning activities in preschool classrooms in Turkey. The study involved a sample of 25 preschool teachers and 33 parents of preschool children. The findings indicated that preschool teachers showed a higher preference for art, mathematics, and literacy activities, while science, drama, and body movement activities were less frequently implemented in early childhood classrooms.

Further the researcher formulated and tested the null hypothesis using correlation analysis (Pearson correlation)

H0₂: There is no significant relationship between the availability of instructional resources and the implementation of the Competency Based Curriculum in pre-primary schools.

The correlation results on the relationship between the availability of instructional resources and the implementation of the competency based curriculum in the schools are presented in Table 12

Table 12:

Availability of instructional resources and implementation of CBC.

Instructional Resources and Implementation Of CBC			
		Implementation of CBC	Availability of instructional resources
Implementation of CBC	Pearson Correlation	1	.250*
	Sig. (2-tailed)		.050
	N	62	62
Availability and use of instructional resources	Pearson Correlation	.250*	1
	Sig. (2-tailed)	.050	1
	N	62	62
*Correlation is significant at the 0.05 level (2-tailed).			

From the table 12, it is evident that the correlation coefficient between the availability and use of instructional resources and the implementation of the CBC was 0.250, with a corresponding p-value of 0.050. The findings indicate that there was a significant relationship between the availability of instructional resources and the implementation of the CBC. On this basis the alternative hypothesis was thus accepted. This underscores the role instructional resources play in effective curriculum implementation. These findings are consistent with the results of Mwita and Onyango (2022), who conducted a study focusing on the impact of the availability and use of instructional resources on the implementation of the competency based curriculum in lower primary grade teachers (grades 1, 2 & 3) in selected public primary schools located in Migori County. The study

findings revealed a noteworthy correlation between the adequacy of teaching/learning resources and the implementation of CBC. This suggests that the availability of appropriate teaching/learning resources positively contributes to the successful implementation of CBC.

Wambua (2019) conducted a study in Machakos County to investigate the constraints affecting the successful implementation of the Competency Based Curriculum (CBC). The findings of the study revealed that there was a lack of adequate teaching and learning resources in lower primary schools, which posed challenges to the effective implementation of the new curriculum. Chepkemei et al. (2022) also conducted a study on Implementation of CBC in the face of Covid19. The aim of the study was to assess the readiness of schools in implementing the competency-based curriculum and to examine the availability and sufficiency of teaching and learning resources during the COVID-19 pandemic. The findings indicated that schools lacked the necessary teaching and learning materials for the successful implementation of the competency-based curriculum. The study suggested that the government should prioritize the provision of adequate teaching and learning resources to ensure a seamless implementation of the CBC across all schools.

Amunga et al. (2020) conducted an analysis of the teacher-parent relationship as a crucial factor in the successful implementation of the CBC in Kenya. According to the researchers, teachers highlighted several challenges affecting the implementation of the CBC. Among these challenges were the lack of teaching/learning materials and an insufficient number of

trained teachers. The findings of the current study align with the aforementioned research, as it also identified the availability and adequacy of instructional resources as one of the obstacles to the successful implementation of the competency-based curriculum in Kenya. Additionally, Mwita and Onyango (2022) conducted a study focusing on the impact of the availability and use of instructional resources on the implementation of the competency based curriculum. The study specifically targeted lower primary grade teachers (grades 1, 2 & 3) in selected public primary schools located in Migori County.

Data for the study were collected through the use of questionnaires and interview schedules. The study findings revealed a noteworthy correlation between the adequacy of teaching/learning resources and the implementation of CBC. This suggests that the availability of appropriate teaching/learning resources positively contributes to the successful implementation of CBC.

4.5 Teacher-Competencies and Implementation of CBC

The importance of teacher-competency in rolling out a curriculum cannot be overstretched.

The third objective of the study aimed to explore the relationship between teachers' competencies in CBC and its implementation in pre-primary schools in Embu County.

The study examined the levels of competencies among teachers regarding the effective implementation of the new CBC curriculum. The responses of the participants are summarized in Table 13.

Table 13:

Teachers Competencies in CBC

Teachers Competencies in CBC					
	N	Min	Ma	Mea	Std.
i. Make CBC schemes of work	62	1	4	3.50	.594
ii. Design CBC lesson plan	62	3	4	3.56	.500
iii. Use CBC lesson plans in class	62	2	4	3.24	.564
iv. Use learner centred approaches in teaching	62	1	4	3.44	.668
v. Understands the CBC core values	62	2	4	3.10	.670
vi. Evaluate learners using competency based assessments	62	1	4	2.84	.772
vii. Keep up-to date individual records	62	1	4	3.26	.808
viii. Engage learners in hands on experience activities	62	2	4	3.27	.682
ix. Infuse pertinent and contemporary issues in lessons	62	1	4	2.89	.791
x. Employ collaborative learning	62	1	4	3.32	.825
xi. Promote critical thinking	62	2	4	3.10	.593
xii. Use individualized learning	62	1	4	2.98	.757
xiii. Use criterion assessment	62	1	4	2.60	.757
xiv. Use formative evaluations	61	1	4	3.02	.671
xv. Promotes creativity and imagination	62	1	4	3.34	.700
xvi. Engage parents in enhancing learning activities at	62	1	4	3.03	.701
xvii. Use digital devices to enhance learning	62	1	4	2.02	.932
Valid N (listwise)	61			3.10	

Table 13 displays the teachers' responses, where they were asked to rate their competency level on a scale from 1 to 4. On this scale, 1 means "strongly disagree," 2 means "disagree," 3 means "agree," and 4 means "strongly agree." The individual mean scores reveal that teachers' competencies in CBC varied, ranging from disagreement to strong agreement. This suggests that only a few teachers strongly disagreed, indicating that most teachers were moderately competent in implementing CBC.

The overall mean average score show that teachers' competency in CBC was at 3.10 this is in contrast with low levels of Implementation of CBC mean computed in table 4.6 at a mean of 2.36. The mean scores do not align with the levels of implementation of CBC, considering that the study also found that most teachers reported receiving training on CBC. This is need for a more elaborate research to unveil the factors other than teacher training that influence implementation of CBC at pre- primary school grades since the teachers were found to have been trained and had competencies in CBC but was not reflected in levels of implementation. Komba and Mwandanji (2015) conducted a case study to examine the challenges faced by teachers in implementing the competence-based curriculum in secondary schools in Tanzania. The study's findings revealed that teachers encountered various challenges, which hindered the effective implementation of the competence-based curriculum in the teaching and learning process.

To examine the relationship between teacher competencies and the implementation of CBC, a Pearson correlation analysis was conducted to assess the significance of this relationship. In order to accomplish this, the researcher formulated and tested the following null hypothesis.

H0₃: There no significant relationship between teachers' competency in CBC and its implementation among pre-primary schools.

The researcher conducted Pearson's correlation analysis to test this hypothesis, and the results are presented in table 14, showing the computed Pearson correlation coefficients.

Table 14:
Teachers' Competencies in CBC and its Implementation

Teachers' Competencies in CBC			
		Implementation of CBC	Teachers Competencies in CBC
Implementation of CBC	Pearson Correlation	1	.513**
	Sig. (2-tailed)		.000
	N	62	61
Teachers Competencies in CBC	Pearson Correlation	.513**	1
	Sig. (2-tailed)	.000	
	N	61	61
**. Correlation is significant at the 0.01 level (2-tailed).			

Based on the computation presented in Table 14, there is a correlation coefficient of 0.513 between teacher competency in CBC and the implementation of CBC, indicating a moderate positive relationship. The associated p-value of 0.000 signifies that this correlation is significant. The results obtained indicate a significant relationship between teacher competence and the implementation of the Competency-Based Curriculum (CBC). This suggests that teacher competence is a crucial factor in effective curriculum implementation. As a result, the null hypothesis was rejected, confirming that teacher

competence has a meaningful impact on the successful execution of CBC in pre-primary schools.

Isaboke et al. (2021) conducted a similar study on the implementation of CBC and identified lack of adequate teacher training as one of the obstacles encountered in implementing CBC in urban areas of Kenya. This means that even teachers in urban areas were ill-prepared to implement CBC Curriculum. It is therefore arguable that by and large teacher preparation for implementation of CBC is not sufficient.

In this study, which focused on teacher preparedness in implementing CBC in Nairobi City County, it was found that a significant portion (65.9%) of the target population lacked the necessary competencies to effectively implement CBC. Only 34.1% of the teachers were trained on CBC. This implies that teachers' competency remains a concern in relation to the effective implementation of CBC.

A study conducted by Ngeno et al. (2021) examined the attitudes of grade 1 teachers towards the implementation of the Competence-Based Curriculum in Primary Schools in Kericho County. Due to the dissatisfaction expressed by educational stakeholders regarding the slow implementation of the new curriculum, the study was conducted. The research findings demonstrated a noteworthy and positive correlation between teachers' attitudes and the successful implementation of the CBC. It was noted that teachers had a negative attitude towards CBC. This can be attributed to the low level of teacher preparation on handling and appreciating CBC content and pedagogy which emphasizes on hands-on-experience learning. Similarly, Wambua (2019) established that there was lack of proper teacher-preparation for the roll out of the new CBC curriculum. They

observed that CBC may have been rolled out in a hurry not considering teachers' readiness in terms of training and involvement. It is instructive that teacher-factor is considered a fore before any implementation of the curriculum.

In the 2015/2016 financial year calendar, under the supervision of the World Bank, Kuwait significantly increased its budget for education. This was done with the aim of initiating curriculum reforms and facilitating the adoption and implementation of a CBC on a global scale. Like other nations globally the issue of unemployment and job market necessitated this drastic move. However, the outcomes thereof were not all pleasant without controversies as the curriculum did not meet policy-makers' expectations plus the teachers. A study conducted to follow up on the successes and challenges faced by Implementation of CBC in Kuwait revealed that teachers generally exhibited positive attitudes and views on CBC, but there were several obstacles which hindered CBC efficacy in Kuwait. This revelation shows that CBC faces both contextual and extraneous obstacles globally as cited by Sadeq et al. (2021) this underscores the current study position that the Implementation of CBC is far from being smooth in pre-primary school. The above studies concur that there is a continuing need to strengthen teacher training in order to retool and enhance their capacity to effectively implement the Competency-Based Curriculum in Kenya. Adequate and ongoing professional development is essential to equip teachers with the necessary skills, knowledge, and pedagogical approaches required for successful CBC delivery, particularly at the pre-primary level.

4.5.1. Preschool Teachers training on CBC

The researcher further assessed teachers' perceptions regarding the adequacy of the CBC training they had received. Their responses were analyzed and presented in Tables 4.14 and 4.15. These provided insight into how well teachers felt prepared to implement CBC, highlighting areas of strength as well as gaps that may require additional support or training.

Table 15:

Training on Competency Based Curriculum

Training on CBC					
		Fre	%	Valid	Cumulative %
Valid	Inadequate	15	24.2	24.2	24.2
	Somehow adequate	13	21.0	21.0	45.2
	Adequate	30	48.4	48.4	93.5
	Quite adequate	4	6.5	6.5	100.0
	Total	62	100.0	100.0	

Based on the information presented in table 15, the data reveals that a majority—48% of the teachers—confirmed having received sufficient training on the Competency-Based Curriculum (CBC). However, 24.2% of the respondents indicated that they had not received adequate training, which in turn impacted their ability to effectively implement the curriculum. This suggests that while progress has been made in teacher training, there remains a significant proportion of preschool teachers who require further support to fully grasp and apply CBC principles in their classrooms.

Similarly, the researcher sought to assess the level of proficiency demonstrated by preschoolteachers in interpreting and utilizing the Competency-Based Curriculum (CBC) designs during their teaching practices. The CBC relies on structured content area designs that guide instruction, and teachers are expected to be adequately trained to interpret and apply these designs effectively in the classroom. Interpretation of curriculum designs is a vital aspect of teaching, as it directly influences how learning experiences are planned and delivered.

To evaluate this, a four-tier scale—*inadequate, somehow adequate, adequate,* and *quite adequate*—was used. The responses from the teachers were summarized and presented in Table 16 .

Table 16:

Training on interpretation of CBC designs

Training on Interpretation of CBC Designs					
		Frequency	Percent	Valid Percent	Cumulative Percentage
Valid	Inadequate	9	14.5	14.5	14.5
	Somehow Adequate	12	19.4	19.4	33.9
	Adequate	28	45.2	45.2	79.0
	Quite Adequate	13	21.0	21.0	100.0
	Total	62	100.0	100.0	

Based on the information presented in Table 16, it can be noted that a significant majority of teachers received sufficient training on CBC curriculum designs. Relatively, those who could adequately interpret the designs were 21% which means that they could competently use the designs. This suggests that 79% of teachers were not sufficiently competent in the interpretation and use of the CBC designs, which could explain the low levels of CBC implementation. Similar responses were observed regarding other areas of training, such as training on CBC professional documents, learner-centered pedagogical methods, competency-based assessment, and the creation of an inclusive learning environment. The lack of adequate training in these crucial areas likely contributes to the challenges teachers

face in effectively delivering the CBC, further hindering its full implementation in pre-primary schools.

The findings align with the study conducted by Wambua (2019) in Machakos County, which examined the implementation of the CBC curriculum. The study revealed that teacher preparation was insufficient both during and prior to the introduction of the new CBC curriculum.

4.6 School Infrastructure and Implementation of CBC

The fourth objective involved analyzing the effects of school infrastructure on implementation of CBC in pre-primary schools in Embu County.

Information was gathered from the headteachers of the respective schools regarding the infrastructure necessary for the smooth implementation of the CBC. The outcomes of their responses are displayed in Table 17 .

Table 17:

Availability of School Infrastructure

	N	Min	Max	Mean	Std.Dev.
i. Pre-primary school Classrooms	62	1	3	1.92	.275
ii. Spacious classrooms for indoor activities	62	1	3	1.68	.471
iii. Windows and ventilation spaces	62	1	3	1.85	.355
iv. preschool Chairs	62	1	3	1.92	.275
v. preschool Tables	62	1	3	1.92	.275
vi. Playgrounds	62	1	3	1.71	.458
vii. Clean water and sanitation	62	1	3	1.82	.385
viii. Preschool appropriate Toilets	62	1	3	1.56	.500
ix. Safe Outdoor play equipment	62	1	3	1.44	.500
x. Electricity/ power	62	1	3	1.65	.482
Xi. Internet connectivity	62	1	3	1.30	.462
Xii. Different learning areas	62	1	2	1.65	.482
Valid N (listwise)	62			1.69	

On a scale of 1-3, where 1 represented "not available," 2 indicated "available but not adequate," and 3 meant "available and adequate," the mean scores for individual items revealed that the availability of school infrastructure ranged from "not available" to "available but not adequate." The findings showed that most preschools had classrooms equipped with child-sized chairs and tables, with a mean score of 1.92, though these were

not considered adequate. Classrooms were generally available, with a mean score of 1.92, but some were not up to standard and lacked sufficient space, as indicated by a mean score of 1.68. This suggests that while there is basic infrastructure in place, the quality and size of classrooms remain a challenge, potentially hindering the effective implementation of the CBC.

The lowest mean scores were for internet access, outdoor play equipment, and electricity connectivity, with scores of 1.30, 1.44, and 1.65, respectively. The low electricity and internet availability explain the limited digital integration in the implementation of the CBC, while the absence of outdoor play equipment leads to reduced participation in psychomotor activities. The overall mean score for the availability of appropriate infrastructure was 1.69, suggesting that the school infrastructure is inadequate for effective implementation of CBC. To explore the relationship between school infrastructure and CBC implementation a null hypothesis was developed and tested..

H04: There is no significant relationship between school infrastructure implementation of CBC among pre-primary schools.

To achieve this a Pearson correlation was run and the results are illustrated in table 18.

Table 18:

Availability of school infrastructure and implementation of CBC

Correlation between availability of school infrastructure and implementation of CBC in pre-primary schools			
		Implementation of CBC	Availability of school infrastructure
Implementation of CBC	Pearson Correlation	1	-.222
	Sig. (2-tailed)		.088
	N	62	60
Availability of school infrastructure	Pearson Correlation	-.222	1
	Sig. (2-tailed)	.088	
	N	60	60

According to the data presented in Table 18, the correlation coefficient between the availability of school infrastructure and the implementation of CBC was -0.222, with a p-value of 0.088. This indicates a negative relationship between school infrastructure and CBC implementation. However, the correlation was not statistically significant ($p > 0.05$, 0.088). These results suggest that there is no significant relationship between the availability of school infrastructure and the implementation of CBC. As a result it can be concluded that the availability of sufficient school infrastructure may not significantly impact curriculum implementation. Therefore, the null hypothesis (H_{a4}) was accepted,

which states that there is no significant relationship between the availability of school infrastructure and the implementation of CBC in Embu County, while the alternative hypothesis was rejected.

The study differs with Isaboke et al. (2022) that found out that school infrastructure influences CBC implementation. Learning resources and school infrastructure is one of major indicators of government and community's level of preparedness for Implementation of CBC and enhanced learner performance (Isaboke, Mweru, et al., 2021; Wambua, 2019). Another study by Ngeno et al., (2021) investigated the relationship between availability of adequate physical facilities and the implementation of CBC in public primary schools in Chemosit, Kericho County Kenya. The study findings revealed that physical infrastructure had a moderate positive influence on effective CBC implementation at a significance value of 0.029.

Akala (2021) argues that, in addition to poor infrastructure and limited human resources, CBC also faces challenges such as inadequate preparation from stakeholders and a lack of alignment between content and pedagogical knowledge among implementers. This suggests that meeting basic infrastructure standards does not necessarily lead to improved learning outcomes.

Several studies conducted in Kenya have highlighted the numerous accomplishments of the CBC, such as achieving 100% enrolment. However, this high enrollments portend a challenge on infrastructure needs of the curriculum. According to the findings by Robert and Owala (2021) there are several challenges present in the implementation of the CBC. These challenges include inadequate human resources, teacher under-staffing, lack of

parental support, issues with the curriculum structure, and the presence of large class sizes, among other obstacles. This is about adequacy and availability of the necessary physical and human resource. On the same issue of adequacy of school infrastructure, head teachers' Interview responses indicated that most schools did not have adequate infrastructure to support seamless implementation of the new curriculum.

Mokaya, (2013), conducted a study on the influence of school infrastructure on students' academic outcomes. The study was motivated by the realization that school infrastructure plays a key role in ensuring effective teaching and learning in schools. The study focused on secondary schools in Kajiado county. The researcher analyzed various elements of infrastructure including but not limited to absence or availability of open fields, games equipment, classrooms, laboratories, halls, dormitories and sanitation facilities. The study findings revealed that improved academic achievement was significantly associated with adequate school infrastructure including spaced classrooms, adequate and ample spacing in the libraries, science laboratories, adequate water and sanitation facilities and enough engagement in co-curricular activities.

The findings of these studies contrast with those of the current research, which identified a negative correlation between school infrastructure and the implementation of CBC at the pre-primary level in Embu County. This suggests that while school infrastructure is an important factor in curriculum implementation, it may not necessarily translate into improved learning outcomes. The lack of a statistically significant relationship indicates that other factors may play a more substantial role in the successful implementation of CBC. Further research is needed to explore the impact of infrastructure on CBC

implementation in preschools in Embu county by including a larger sample size and expanding the geographic scope of the study. Additionally, examining other external variables could provide a more comprehensive understanding of the factors influencing CBC implementation in Embu County.

4.7 Qualitative Findings

For the qualitative data, the researcher interviewed headteachers to gather their views on school infrastructure and its impact on the implementation of CBC. Some of their responses are presented and discussed below

On the question; how would you respond to the question;

“ to what extent have school infrastructure affected the smooth implementation of CBC in your school?”

One headteacher responded;

“my response is as good as yours, good and adequate infrastructure would influence not only the teaching process but also the learning outcomes. One key component of infrastructure is electricity and internet connectivity. These are major drivers of teaching and learning. As you may notice our school lacks in both...”

The researcher computed a cumulative score of 66.1%, indicating severe inadequacy in the necessary school infrastructure. The findings highlight that the lack of sufficient space for all learning areas had a detrimental impact on the implementation of the CBC. This

insufficiency of appropriate infrastructure, particularly in terms of space, may hinder the effective delivery of the curriculum, as it limits the ability to create an environment conducive to the learner-centered approaches emphasized by CBC..

According to the research conducted by Wambua (2019) in Machakos County, it was found that the infrastructure of schools played a significant role in the successful implementation of the new competency-based curriculum. There is need to address concerns regarding school infrastructure, teacher preparedness, and overall environmental readiness. On whether all the pre-primary school teachers had been inducted on CBC, the head teacher remarked;

“Not yet, since even those of lower primary grades have not all been trained on CBC. Only few teachers have experienced CBC as required for smooth roll-out of the new curriculum”.

The existing studies examining the implementation of CBC align on the factors that impact its effectiveness in schools. Isaboke, et al. (2021) investigated the challenges encountered by teachers in public pre-primary schools in Nairobi City County when complementing the new CBC. The results revealed that the implementation of CBC faced obstacles due to various factors, including the insufficiency of adequate learning facilities. These include but not limited to school infrastructure and teaching learning resources. This study too underscores the importance of adequate school infrastructure as a key tenet for curriculum roll-out at preschool level.

Other studies on the subject also highlight the lack of sufficient resources as a significant barrier to the implementation of CBC in Kenya. According to Momanyi and Rop (2019),

there have been notable gaps in the preparation and subsequent publication of course-books, leading to delays in their availability. This situation presents a challenge to the intended seamless implementation of the competency-based curriculum in the majority of schools in Kenya. In her analysis of available secondary data, Akala (2021) argues that besides poor infrastructure and human resource, CBC faced the challenge inadequate preparation by stakeholders' participation and in-congruence content and pedagogical knowledge among implementers. These assertions paint a dim picture on the successes of the Implementation of CBC. The government at the National and County level should leverage on this revelation and put in mitigate measures to make Implementation of CBC smooth in all schools in Kenya.

On whether the pre-primary school teachers had competence and capacity to implementing CBC as trained the headteacher remarks

"They have received adequate training and appear to follow the CBC guidelines in their planning, using teacher-centered methods. As a result, the children are learning effectively, and by grade one, they can read, write, and perform simple arithmetic. My teachers are diploma-trained, so they have the capacity to implement the CBC."

Preschool teachers' competence in the implementation of the Competency-Based Curriculum (CBC) is crucial for the successful delivery of early childhood education. Research suggests that teachers' competence plays a vital role in how well CBC is implemented in classrooms, as it directly affects children's learning outcomes. Adequate training and continuous professional development are key factors in ensuring that

preschool teachers can effectively implement CBC. Teachers need to be well-versed in the principles of CBC, which emphasize skills development, critical thinking, and personalized learning. According to Akala (2021), many teachers face challenges in implementing CBC due to insufficient training and support from stakeholders, leading to difficulties in delivering the curriculum effectively

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

In this section, the researcher presents a brief summary of the study's findings, derives conclusions aligned with the study objectives, and proposes recommendations based on the results. The recommendations are categorized into two parts: best practices for stakeholders and suggestions for future research.

5.1 Summary of the Findings

The study examined the implementation of the Competency-Based Curriculum (CBC) in Embu county, with a focus on teachers' ability to design, implement, and facilitate effective learning experiences for children. The findings revealed that most teachers inconsistently applied these key indicators, with mean scores ranging from "rarely" to "always" in their practices. Notably, developing schemes of work had the highest mean score (2.74), whereas the use of digital devices to enhance learning recorded the lowest (1.05) in both teacher responses and classroom observations. Additionally, although teachers frequently prepared lesson plans (mean score of 2.56), they were not consistently used during actual teaching (mean score of 2.35). This inconsistency may stem from compliance with internal and external supervisory expectations rather than a genuine instructional necessity.

The study compared the implementation of the Competency-Based Curriculum (CBC) between public and private pre-primary schools in Kenya. The findings reveal a mean difference of 0.228, with public pre-primary schools outperforming private schools in CBC

implementation. Previous studies have shown contrasting results depending on location. For instance, Awili and Begi (2021) found that public schools in Nairobi City County had better CBC implementation due to greater support for teachers, while Owour (2022) discovered that private schools in Mbita Sub-County had better access to resources, allowing for more effective CBC implementation.

This study investigated the correlation between the availability of instructional resources and the implementation of CBC in pre-primary schools within Embu County. The average mean scores of 2.82 for the use of curriculum designs, 2.71 for the use of guidebooks, and 2.60 for the use of course books indicate that teachers had limited access to sufficient CBC-related resources, thereby hindering the effective implementation of the competence-based curriculum at pre-primary school grade levels. The overall mean scores showed that availability of instructional resources was inadequate hence constraint to the effective implementation of CBC. A Pearson correlation analysis was conducted to determine the relationship between the availability of instructional resources and the implementation of CBC. The results revealed a statistically significant relationship between these factors.

Additionally, the study examined teachers' competencies in CBC and the implementation of CBC in pre-primary schools.. The study found that while teachers demonstrated competency in CBC with an overall mean score of 3.10, the actual implementation remained low, with a mean score of 2.36. The study established that few teachers (11.3%) had not attended any induction or training on CBC whereas most teachers 74.2 had attended

training on CBC at least once. Besides this state of teacher preparation (training), it should be noted that teachers still felt inadequately competent to roll out CBC at the pre-primary grades. Despite most teachers receiving CBC training, the discrepancy between competency and implementation suggests the influence of other factors. Further research is needed to explore additional barriers affecting CBC implementation in pre-primary schools beyond teacher training

A correlation computation to determine degree of relationship between teacher competence and Implementation of CBC was run and the results revealed that the correlation coefficient at 0.513 with a p-value of 0.000, indicating a strong relationship, it can be concluded that there was a significant association between teacher competence and the implementation of CBC. Hence underscoring importance of teacher-competence in curriculum implementation.

Lastly this study analyzed the effects of school infrastructure implementation of CBC in pre-primary schools in Embu County. The study found that while most preschools had classrooms and child-sized furniture (mean score of 1.92), they were often inadequate, with some classrooms lacking sufficient space (mean score of 1.68). The lowest scores were recorded for internet access (1.30), outdoor play equipment (1.44), and electricity (1.65), limiting digital integration and psycho-motor activities in CBC implementation. Overall, the mean score for infrastructure availability was 1.69, indicating that school facilities are insufficient for effective CBC implementation. This research also examined the

relationship between school infrastructure and the implementation of the Competency-Based Curriculum (CBC) in Embu County. The findings reveal a negative but statistically insignificant correlation (-0.222 , $p = 0.088$) between the availability of school infrastructure and the successful implementation of CBC. As the correlation is not significant ($p > 0.05$), and therefore the null hypothesis was not rejected. Therefore, it was concluded that school infrastructure may not have a significant impact on CBC implementation in the county. This conclusion contrasts with other studies, such as Isaboke et al. (2022), which found that school infrastructure positively influences CBC implementation, and Ngeno et al. (2021), who reported a moderate positive influence of physical infrastructure on CBC implementation in Kericho County. Further research is suggested to better understand the relationship between infrastructure and curriculum implementation, especially given challenges like poor human resources and inadequate preparation.

Additionally, Mokaya (2013) found that adequate school infrastructure is positively associated with academic achievement in secondary schools, but this finding contrasts with the current study, where school infrastructure showed no clear link to CBC implementation at the pre-primary level. The study concludes that while infrastructure is crucial, its direct impact on implementation of CBC in Embu County remains unclear, and further research is needed.

On the scale of 1-3 where 1 indicated not available, 2 available but not adequate and while 3 indicated available and adequate, individual means scores indicated no school had scored 3 meaning school infrastructure was not available and adequate a necessity for smooth implementation of CBC. Examples of the infrastructure were internet connectivity, availability of electricity among others. This implies that schools suffered from infrastructural inadequacies that undermined effective CBC roll-out.

The results obtained from the hypothesis testing on the impact of school physical infrastructure on the implementation of CBC revealed a correlation coefficient of -0.222 and a p-value of 0.088. The results imply that the effect of school infrastructure on implementation of CBC was significant. This means that availability of adequate school infrastructure influenced implementation of CBC.

5.2 Conclusions of the Study

The study examined the implementation of the Competency-Based Curriculum (CBC) in Embu County, focusing on teacher competencies, instructional resources, school infrastructure, and CBC implementation levels. The findings revealed inconsistencies in teachers' ability to effectively implement CBC, despite most having received training. Developing schemes of work had the highest mean score (2.74), while the use of digital devices was the lowest (1.05). Teachers often prepared lesson plans but did not consistently use them, likely due to supervisory expectations rather than instructional needs.

A comparison of CBC implementation in public and private pre-primary schools showed that public schools performed slightly better (mean difference of 0.228), though previous

studies have shown mixed results based on location. The study also found that limited access to instructional resources hindered effective CBC implementation, with statistically significant correlation results confirming the relationship between resource availability and implementation.

Despite teachers demonstrating CBC competency (mean score of 3.10), the actual implementation remained low (2.36), suggesting additional barriers beyond training. A strong positive correlation ($r = 0.513$, $p = 0.000$) confirmed that teacher competency significantly impacts CBC implementation.

The study also analyzed the role of school infrastructure in CBC implementation. While classrooms and child-sized furniture were available, they were often inadequate. Internet access, electricity, and outdoor play equipment were particularly lacking, limiting digital integration and psycho-motor activities. The correlation between school infrastructure and CBC implementation was negative but statistically insignificant ($r = -0.222$, $p = 0.088$), implying infrastructure may not be a primary determinant of CBC implementation success.

Overall, the study concludes that teacher competence, instructional resources, and infrastructure all play a role in CBC implementation, though their impacts vary. Further research is recommended to explore additional factors influencing effective curriculum roll-out, particularly beyond teacher training and infrastructure adequacy.

5.3 Recommendations of the Study

The study put forward the following recommendations to improve the successful implementation of CBC by tackling key challenges related to teacher competency, instructional resources, infrastructure, and policy support..

- Ministry of Education/KICD should actively involve teachers in the formulation and/or review of the curriculum to foster a sense of ownership.
- KICD should sensitise teachers on published course books and other teaching and learning resources to ensure they are adequately prepared and capable of using them effectively.. Most teachers (Over 70%) could not use guidebooks and curriculum designs competently.
- County governments should provide continuous teacher professional development focusing on continuous retooling of preschool teachers on CBC .
- County Governments should take proactive measures to mobilize, provide, and enhance the necessary physical and teaching/learning infrastructure throughout the county. There is need to increase funding for CBC-related teaching materials, including curriculum designs, guidebooks, and course books. Counties also need to develop digital learning resources and provide teachers with training on how to integrate them effectively.
- Teachers should embrace improvisation and utilization of locally available resources to bridge the gap of inadequate teaching resources. Teachers play a crucial role in mobilizing and utilizing teaching/learning resources effectively.

- Policy makers/Quality assurance department should establish monitoring and evaluation frameworks to assess the effectiveness of CBC implementation in preschools and address emerging challenges as well as review and align supervisory policies to ensure lesson planning and implementation are based on instructional needs rather than administrative compliance.
- Parents and school communities should support government's effort by subsidizing government providence to ensure smooth implementation of CBC at the pre-primary school levels as the study revealed that the primary hindrance to the successful implementation of CBC was the lack of availability and adequacy of essential teaching/learning resources, as well as insufficient school physical infrastructure

5.4. Recommendation for Further Research

The researcher recommends further investigation into teacher-related factors that impact the effective implementation of the curriculum, as teachers' competence in CBC did not result in the anticipated level of implementation. The findings of this study revealed that despite the government providing teacher training on CBC, with a participation rate of over 70%, the responses from teachers regarding their competencies in the curriculum implementation indicated a lack of effective execution. This raises concerns about the additional tools and support that teachers may require to effectively implement the new curriculum. Was the content for the training packaged well?

This study was unable to establish a correlation between school infrastructure and the implementation of CBC. Therefore, further research is needed to explore the impact of infrastructure on CBC implementation, involving a larger sample size and a broader geographical area.

There is a need for large-scale research on the implementation of the Competency-Based Curriculum (CBC) in pre-primary school grades in Kenya to provide a comprehensive understanding of the current state and the factors influencing its implementation. This is particularly crucial given that CBC is a relatively new approach in Kenya's education system. Ensuring its successful adoption at the foundational level will significantly contribute to the seamless integration of this new educational framework across all levels of the education system.

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APPENDICES

Appendix A: Questionnaire for Preschool Teachers

Dear Respondent,

I am Ileri Jeremiah, a post-graduate student pursuing a Doctor of Philosophy in Early Childhood Studies. My research focuses on the implementation of Competency-Based Curriculum in pre-primary schools within Embu County.

The information that will be obtained during the data collection process will be used for academic purpose only. It is important also to note that your participation will be voluntary and the report thereof will be meant for the purpose of academics. I would wish to request for your co-operation and absolute honesty when responding to the questions.

Section A: Demographic Information

Please tick (✓) as may be appropriate to you

School type:

- i. Public ()
- ii. Private ()

Your Gender:

- i. Male ()
- ii. Female ()

Your highest professional training:

- i. Certificate ()
- ii. Diploma ()
- iii. BED ()

- iv. Masters ()
 - v. Other
-

Indicate your years of teaching Experience:

- i. Less than 5 Years ()
- ii. 6-10 Years ()
- iii. 11-15 Years ()
- iv. 16-20 Years ()
- v. over 20 Years

Your age bracket in years

- i. Below 25 ()
- ii. 26-30 ()
- iii. 31-35 ()
- iv. 36-40 ()
- v. 41-45 ()
- vi. 46-50 ()
- vii. Above 50 ()

Which level are you currently teaching

- a) PP1 ()
- b) PP2 ()

Section B.: Teachers training and competence in CBC

Teachers' training

How many times have you attended training on CBC?

- i. Four ()
- ii. Thrice ()
- iii. Twice ()
- iv. Once ()
- v. None ()

How would you describe your CBC training/induction?

- i. Quite adequate ()
- ii. Adequate ()
- iii. Somehow adequate ()
- iv. Inadequate ()

How would you rate your ability to adequately handle CBC learning areas?

- i. Very competent ()
- ii. Moderate ()
- iii. Somehow ()
- iv. Not competent ()

State how often you use CBC teaching-learning resources in teaching.

- i. Always ()
- ii. Very often ()
- iii. Sometimes ()
- iv. Not at all ()

Indicate the extent to which you agree with the following statements, please tick your correct choice. Key: SA-strongly : Agree :A –Agree :D-Disagree : SD-strongly disagree

Task	SA	A	D	SD
i. I can make CBC schemes of work				
ii. I can design CBC lesson plan				
iii. I use CBC lesson plans in class				
iv. I use learner centred approaches in teaching				
v. I Understands the CBC core values				
vi. I evaluate learners' competencies				
vii. I keeps up-to-date individual records				
viii. I engage learners in hands-on-experience				
ix. I Infuse pertinent and contemporary (PCIs) issues				
x. I employ collaborative learning				
xi. I promote critical thinking				
xii. I use individualized learning				
xiii. I use criterion assessment				
xiv. I promotes creativity and imagination				
xv. I engage parents in enhancing learning activities at				
xvi. I use digital devices to enhance learning				

Appendix B: Observation Check-list for Teachers Competence on CBC.

Classroom observation and to assess how often the teacher adequately performs the following tasks?

Task	Rarely	Sometimes	Always
i. Draws CBC schemes of work			
ii. Can develop a CBC lesson plan			
iii. Uses CBC lesson plans in class			
iv. Uses learner centred approaches in teaching			
v. Understands the CBC core values			
vi Evaluates learners' competencies			
v. Keeps up-to-date individual records			
vi. Engages learners in hands-on-experience activities			
vii. Infuses pertinent and contemporary (PCIs) issues in lessons			
viii. Employs collaborative learning			
ix. Promotes critical thinking			
x. Uses individualized learning			
xi. Uses criterion assessment			
xii. Uses formative evaluations			
xii Promotes creativity and imagination			

xiv. Engages parents in enhancing learning activities at home			
xv. Uses digital devices to enhance learning			

Availability of Instructional Resources

Use (√) to indicate the availability of the teaching/learning resources

TYPE	Availability Status		
	Available	Inadequate	Not Available
i. CBC Designs			
ii Teachers' guide books			
iii. Mathematics Activities Course			
iv. Language Activities course books			
v. Environmental Activities Course			
vi Science Activities Course Books			
vii Religious Education Activities			
viii Psycho-motor and Creative Activities Course Books			
ix Digital devices			
x Charts /flashcards			
xi Play equipment			

Teacher/Child Ratio

- i. Less than 25 children ()
- ii. 26-30 children ()
- iii. 31-35 children ()
- iv. 36-40 children ()
- v. 41-45 children ()
- vi. 46-50 children ()
- vii. Over 50 children ()

Appendix C: Head Teachers' Interview Guide

How would you assess the availability or adequacy of the following infrastructure items in your school?

Type and adequacy of infrastructure	Not Available	Available & Inadequate	Available & Adequate
i. Pre-primary school Classrooms			
ii. Spacious classrooms for indoor activities			
iii. Windows and ventilation spaces			
iv. preschool Chairs			
v. preschool writing Tables			
vi. Playgrounds			
vii. Clean water and sanitation			
viii. preschool appropriate Toilets			
ix. Safe Outdoor play equipment			
x. Electricity/power			
xi. Internet connectivity			
xii. Different learning areas			

How would you respond to the question?

- i. To what extent have school infrastructure affected smooth implementation of the CBC in your pre-primary school?

- ii. Have all your pre-primary school teachers attended any training in regard to the competency-based curriculum?

- iii. How would you describe your pre-primary school teachers' competence in implementing CBC?

- iv. What kind of digital devices are available in your school?

- v. How would you describe pre-primary school teachers' capacity to implement CBC?

Appendix D: Kenyatta University Letter of Authorization



**KENYATTA UNIVERSITY
GRADUATE SCHOOL**

E-mail: indrps@yahoo.com
dean-graduate@ku.ac.ke
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P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 57550

Internal Memo

FROM: Dean, Graduate School

DATE: 16th May, 2022

TO: Mr. Ireri J. Wangari
C/o Department of Early Childhood
& Special Needs Education.
KENYATTA UNIVERSITY

REF: ES3/28505/18

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

This is to inform you that the Graduate School Board at its meeting 4th May, 2022 approved your Ph.D. Research Proposal entitled "Contextual Constraints Affecting Implementation of Competency-Based Curriculum in Pre-Primary Schools in Embu County, Kenya".

You may now proceed with your Data collection, subject to clearance with the Director General, National Commission for Science, Technology & Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed supervision Tracking and Progress Report Forms. The Forms are available at the University's Website under Graduate School webpage downloads.

By copy of this letter, the Registrar (Academic) is hereby requested to grant you substantive registration for your Ph.D. studies.

Thank you.



JOHN M. ODONGI
FOR: DEAN, GRADUATE SCHOOL


c.c. Chairman, Department of early Childhood & Special Needs Education
Registrar (Academic) Att; Mr. Richard Chweya

Supervisors:

1. Dr. Hudson Ouko
C/o Dept. of Early Childhood & Special Needs Educ.
Kenyatta University
2. Dr. Maureen Mweru
C/o Dept. of Early Childhood & Special Needs Educ.
Kenyatta University


Appendix E: NACOSTI Research Permit


REPUBLIC OF KENYA


**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION**

RefNo: **352792** Date of Issue: **06/June/2022**


RESEARCH LICENSE




This is to Certify that Mr.. JEREMIAH WANJAU IRERI of Kenyatta University, has been licensed to conduct research in Embu on the topic: CONTEXTUAL CONSTRAINTS AFFECTING IMPLEMENTATION OF COMPETENCY -BASED CURRICULUM IN PRE-PRIMARY SCHOOLS IN EMBU COUNTY ,KENYA. for the period ending : 06/June/2023.

License No: **NACOSTI/P/22/18034**

352792
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Director General
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