TEACHERS' PEDAGOGICAL APPROACHES ON LEARNERS ACQUISITION OF CREATIVITY AND IMAGINATION IN IMPLEMENTATION OF COMPETENCY BASED CURRICULUM IN PRIVATE PRIMARY SCHOOLS IN EMBU WEST SUB-COUNTY KENYA

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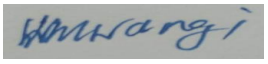
DECLARATION

This thesis is my original work and has not been presented for a degree award in any other institution.

Signature:  Date: 23/08/2024

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This thesis is dedicated to my beloved parents, Mr. Joseph Mwangi and Mrs. Mary Wandia Mwangi, and to my siblings, Godfrey, Nicholas, Martin, James, Monica, Regina, and Irene.

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ABBREVIATIONS AND ACRONYMS

CBC Competency Based Curriculum

EBT Examination-Based Teaching

IBL Inquiry-Based Learning

KICD Kenya Institute of Curriculum Development

KNEC Kenya National Examination Council

QASO Quality Assurance and Standards Officer

SPSS Statistical Package for the Social Sciences

ABSTRACT

This study aimed at finding out the influence of teachers' pedagogical approaches on learners' acquisition of creativity and imagination skills in the implementation of competency based curriculum in private primary schools in Embu West Sub-County, Kenya. The objectives were: to examine the extent to which the problem-solving teaching approach influences learners in acquisition of creativity and imagination skills, to establish how the investigative teaching approach influences learners' acquisition of creativity and imagination skills and to establish how the group learning approach influences learners' acquisition of creativity and imagination skills. The study was anchored on constructivism theory (Dewey, 1938). The study used a concurrent design in the mixed methods approach. The study used a cross-sectional survey design. The target population was 18 private primary schools, 18 head teachers, 412 teachers, and one Quality Assurance and Standards Officer (QASO). Probability and non-probability sampling was used to select the participants. The study used simple random sampling to select 16 out of 18 private primary schools. Purposive sampling was used to include all 16 head teachers and one QASO. The study used proportionate and simple random sampling to select 203 out of 412 teachers. Data collection tools were questionnaires for teachers and in-depth interview guide for head teachers and the QASO. The research instruments were reviewed for validity by the researcher's supervisors. Quantitative data was analyzed using the Statistical Package for Social Science Version 25. Frequencies and percentages were presented using bar graphs, tables, and pie charts. Descriptive statistics were used to analyze the quantitative data, while Qualitative data was analyzed through thematic analysis and presented in the form of themes, narratives, and direct quotations. The study revealed that teachers' use of pedagogical approaches such as problem-solving, investigation, and group learning influences learners' acquisition of creativity and imagination skills in the implementation of the competency-based curriculum (CBC). The study concluded that teachers in Embu West Sub-county do not effectively present learners with problems to discuss and do not effectively guide learners in conducting experiments, which hinders the development of creativity and imagination among learners. It was recommended that the government implement comprehensive professional development and training programs for teachers focused on problem-solving and investigative teaching approaches. These programs should equip teachers with the skills and strategies needed to effectively present learners with problems to discuss and solve, as well as to guide them in conducting experiments that foster creativity and imagination.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Teachers' pedagogical approaches refer to the various methods, strategies, and techniques that educators use to facilitate learning in the classroom. As noted by Rodrigo (2017), pedagogical approaches encompass how teachers plan and deliver instruction, engage students in the learning process, assess their progress, and create supportive learning environments. Ruofel (2023) contended that pedagogical approaches can include traditional methods such as lectures, demonstrations, and drills, as well as more modern and innovative practices such as inquiry-based learning, problem solving, investigative, project-based learning, and group learning.

A study by Zamira (2023) contended that teachers may integrate technology, differentiated instruction, hands-on activities, and collaborative learning opportunities into their pedagogical approaches to meet the diverse needs of students and promote deeper understanding and retention of knowledge. Teachers' pedagogical approaches play a crucial role in shaping the learning experiences of leaners and helping them enhance creativity and imagination. A cross-case study on medium instruction research in China, Japan, and the Netherlands was conducted by Lijie and Lorna (2023), revealing that teachers play a pivotal role in fostering creativity and imagination among students through their pedagogical approaches.

By incorporating interactive, problem-solving, and investigative learning methods, teachers can stimulate students' curiosity and encourage them to think critically and creatively (Zamira, 2023). The investigative teaching approach allows students to explore topics of interest, ask questions, and seek solutions, thereby nurturing their imaginative thinking. This approach provides opportunities for students to engage in hands-on activities, collaborate with peers, and

unleash their creativity while working towards tangible outcomes. Teachers who adopt problem-solving, investigative, and group learning approaches empower learners to take ownership of their learning journey, allowing them to express themselves freely and explore diverse perspectives that enhance creativity and imagination.

Importance of developing creativity and imagination in learners has attracted attention from both policymakers and educators. In Kenya, this led to the introduction of competency-based curriculum (CBC), which places creativity and imagination at its center. The CBC in Kenya emphasizes what learners are expected to do rather than what they are expected to know (Koskei & Chepchumba, 2020). This implies that learning activities and environments are chosen so that learners can apply the knowledge, skills, and attitudes they acquire to situations they encounter in everyday life. Creativity has been viewed as one of the major competencies an individual can use to cope with the rapidly changing world (Sternberg, 2017), and in recent years it has emerged as a major theme in education policy in many nations. Policy documents in many countries, such as Australia, Canada, the United Kingdom, China, and Singapore, have demonstrated the need to nurture students' creativity through education (Craft, 2017; National Science Board, 2017). The use of various pedagogical approaches enhances learners' acquisition of the core competencies enshrined in CBC. Creativity and imagination are the abilities to form new images and sensations in the mind of the learner and to turn them into reality (KICD, 2022).

In creativity and imagination, learners imagine things that are not real and form pictures in their minds. The imagined things are those that have neither been seen nor experienced, but the learners will turn those pictures into real things (Ferencei, 2018). Creativity and imagination may also refer to the power of forming mental images of things not wholly perceived in reality and creating physical representations of those images. Imagination happens and remains in the mind, while creativity takes imagination to the next level, whereby something new and valuable is formed.

In a learning environment, creativity is not limited to the invention of things but encompasses all acts and thoughts that trigger critical thinking to propel a learner's mind to a more productive and accountable future (Mwasiaji, 2020). Maina and Rosemary (2019) argue that to trigger national innovation and propel national economies to higher levels, there is a need for learners to be encouraged to imagine things. Kampaylis and Berki (2019) asserted that creativity can be taught and developed in any classroom environment by any teacher though there are factors that enhance students' creativity, like use of open-ended questions, engaging learners in meaningful and authentic activities, and collaboration.

Starko (2019) and Furman (2018) recommended thirteen higher-level thinking models that help foster creativity. These include observing, imagining, analogizing, abstracting, and patterning. Besides this, Starko (2019) argued that teachers need to incorporate a thorough, well-thought-out, pre-planned, and practical teaching-learning approach. Research has also shown that group/teamwork, cooperative learning, and the use of open-ended problems rather than closed-ended problems present an important way of triggering the growth of creativity among learners (Schamel & Ayers, 2022).

Therefore, to foster creativity and imagination in teaching, a teacher should ensure there is creative teaching, with varying pedagogical approaches. Mwarari (2020) mentioned that students should be encouraged to experience and live the knowledge as opposed to merely knowing it. In the CBC environment, the teaching strategies employed by teachers and the resources used should engage the learners in meaningful and playful experiments (Kampaylis & Berki, 2019). For this to be achieved and for learners to understand knowledge in a creative way, teachers can encourage students to seek new alternative examples. Furthermore, teachers can encourage students to construct existing concepts for their peers through exposure to ideas that conflict and engage them in debate before arriving at a conclusion (Kampaylis & Berki, 2019). Cheng (2022) suggests that different concepts and knowledge can be presented in the form of role-playing, drama, music, pictures, poems, and stories. Then students would be given a situation and the opportunity to find new ways to explain the phenomena, make predictions, solve problems, or state what is not known.

Creativity and imagination have attracted attention and funding from European Union member states in the last couple of decades (Symeonidis, 2021). Empirical research shows that schools in Europe are encouraged to find ways in which creativity and imagination can be entrenched in the minds of learners at an early stage (Isaksen, 2021). In Scotland, for example, state authorities are keen on exploring how individual school environments meet the creativity criteria of physical learning, pedagogical learning, time, availability of resources, and the ability of learners to forge meaningful relationships with peers and teachers (Traianou & Jones, 2019). Garcia and Mukhopadhyay (2019) state that in France, imagination appears to be active among learners from an early age and is seen as instrumental in learning and problem-solving. Garcia

and Mukhopadhyay (2019) added that children's creative imagination is strengthened by tasks that involve narrative and drawing abilities for participants between the ages of 8 and 12 years.

McLeod (2020) conducted a study in the United States of America (USA) about creating a classroom environment that promotes positive behavior. The study revealed that teachers in USA plan lessons and provide tools that give students options, voice, and choice in order to enable them to be creative. All constraints on creativity are eliminated in order to give students space and a framework within which they can be creative. For example, allow students to write and direct their own play. Further, teachers encourage divergent thinking that allows students to see a problem or concept from many perspectives and helps them generate numerous viable solutions, fostering innovation and creativity (Landri, 2021; Mertanen et al, 2020). Plus, because there's no right or wrong answer, it encourages open-mindedness, leading to better solutions. Overall creativity and imagination in American schools are meant to enable learners to develop their cognitive faculties, develop their motor skills, enhance their understanding of concepts, and build better communication skills (Mertanen et al., 2020).

Asia, Singapore and South Korea are good examples of countries emphasizing creativity, critical thinking, and character building in their curriculum (Kassim, 2017; Ong, & Tan, 2020). Since 2009, Korea expects its schools to foster creativity as part of quality subject-based learning but also to devote almost 10% of overall school time to projects and other transversal activities that foster creativity. As for Singapore, their "desired outcomes of education" include critical and inventive thinking as well as social and emotional competences (Ismail, & Muhammad, 2019). At the end of secondary school, among other things, students are expected to be "resilient in the face of adversity", "innovative and enterprising" as well as "able to think critically and communicate persuasively". Teachers have developed common criteria to monitor their students'

progress in "critical thinking" and "creative and inventive thinking". Among its multiple projects, the schools also ask pupils to engage in genuine innovation activities, including creativity and other skills for innovation in national curriculum, which is a helpful starting point for them to be taken seriously in school (Ismail et al., 2019).

In Africa, there has been an overreliance on the use of teacher-centered learning and teaching, where the teacher generates and delivers lessons in lecture-based models (National University of Rwanda, 2015; Ndihokubwayo & Habiyaremye, 2018). This outcome-based curriculum is examination-based and places good grades ahead of learning and skills. However, research now shows that African countries are embracing CBC, which places skills and competencies ahead of examination. Leading in the list is Kenya, South Africa, Rwanda, Ghana, and Nigeria. In South Africa and Nigeria, the need to develop students' creative abilities is a fundamental component of the national curriculum (Nilsson, 2020). The aim is to promote a culture of creativity and imagination among learners at all levels by developing a systematic approach to learning and teaching that involves convergent as well as divergent thinking (McLellan, 2022). As a result, schools in South Africa, Ghana, and Nigeria are making use of cognitive and non-standard tasks, experimental research, and design tasks requiring a non-standard logical approach in order to stimulate knowledge (Ramankulov, 2020).

In Rwanda, the national curriculum places a lot of emphasis on imagination as one of the most important tools a child can possess and encourages schools to cultivate it. The modern Rwandese schools, as noted by the Rwanda Education Board (2017), requires learners to develop creative solutions, be capable of creative self-development, and see creativity as a springboard, which gives them an advantage in everyday activities. To drive the quest for creativity and imagination among students in Rwanda, the government reviewed the national curriculum to

incorporate creativity and imagination, provided improved learning materials, improved the teacher-to-learner ratio, and increased investment in ICT for schools (Rwanda Education Board, 2017).

In Kenya, the government emphasizes creativity in the National Education Policy 2020 and introduced a new curriculum incorporating creative learning (Ministry of Education, 2020). The overriding goal of the CBC is to nurture creativity, high-order thinking, and other skills for innovation among learners. The government has been making significant efforts to move the country from the traditional grade-based system in order to equip the workforce with the skills needed to fuel innovation-driven economic growth (Njoroge & Changeiywo, 2019).

Although Mulenga & Kabombwe (2019) found questions being asked about the costs and preparedness of schools and teachers to implement the new curriculum, there is enough evidence of schools making individual efforts to achieve the aspirations of CBC. Gitahi (2019) asserted that the Kenyan model of entrenching creativity and imagination among learners has two levels. First, it is intrinsic to the learning process of all learners at all ages across the curriculum, where creativity is a means of knowledge creation meant to support and enhance self-learning. Second, promoting creativity in and beyond education settings helps children, youth, and other learners to unearth their resources in multiple disciplines and subject areas while developing their capacity to brainstorm and cast a fresh look on every day (Gitahi, 2019; Githinji, 2011; Abobo & Orodho, 2018). To achieve this, Abobo & Orodho (2018) argued that interventions targeted at improving creative thinking that involve all stakeholders. In addition, a study by Sifuna and Obonyo (2019) about Competency Based Curriculum in Primary Schools in Kenya - Prospects and Challenges of Implementation reported that teacher-centered pedagogy that has been in place for decades must be eliminated through teacher training and orientation in order to pave the way for

innovative ideas. To entrench creativity and imagination as a pedagogical approach, the author added that there is a need to adapt new teaching methods and build safe educational environments that support the overall ability of learners to exercise their imagination and experimentation. As Waweru (2018) noted, there seems to be a direct relationship between the availability of resources (human and physical) and the adoption of creativity as a genealogical approach.

The implantation of CBC aspires to ensure that learners gain the ability to apply knowledge, skills, attitudes, and values in the course of study (Abobo & Orodho, 2018). It is for this reason that the pedagogical approaches used by teachers are placed at the center of their implementation (Bredo, 2019). To trigger creativity and imagination among students, teachers need to use a variety of learner-centered methods of instruction for the achievement of core CBC competences, improve knowledge retention, shape student attitudes, improve analytical skills, and promote interaction between teachers and learners (Kenya Institute of Curriculum Development, 2018; Battelle for Kids, 2019). When compared with traditional delivery models of teaching and learning that focus only on pre-existing knowledge or skills, creativity and imagination remain open to the unknown, to that which has yet to be discovered (KICD, 2018).

The CBC is being implemented (2-6-3-3 system) to replace the 8-4-4 education system. The implementation of CBC hinges on the report of the task force on the realignment of the education sector with the Kenyan Constitution 2010, released in 2012 (Rok, 2012). The task force recommended a structure of 2 years of pre-primary, 6 years of primary (3 years lower and 3 years upper), 6 years of secondary (3 years junior and 3 years senior), 2 years minimum of middle-level colleges, and 3 years minimum of university education. The rationale for the revised structure was to ensure learners acquire competencies and skills that will enable them to

meet the human resource aspirations of Vision 2030. CBC is being implemented to do away with examination-based teaching (EBT) that focuses on grades and shift towards learner-centered learning that places knowledge acquisition and application at the center of learning (Amunga &Were, 2020). To fully focus on this, CBC addresses the pedagogical approaches of teachers and provides various creative teaching methods, including project work, practical laboratory experiences, expeditions, and inquiry, among others (Momanyi & Rop, 2019; Wanzala, 2018).

Muricho and Chang'ach (2018) found that the use of creativity and imagination in classrooms may result in better educational outcomes compared to regular teaching methods. In a study about Revisiting Education Reform in Kenya: A Case of Competency-Based Curriculum, M'mboga (2021) reported that the use of creativity and imagination enables learners to take responsibility for their own learning through direct exploration and experience, while their teachers are expected to design effective learning activities geared towards the development of these specific competencies. Koskei and Chepchumba (2020) argued that teachers fail to use the creativity and imagination method due to its demand for time and pressure from school authorities to complete the syllabus. Ondimu (2018) established that resource constraints among schools discourage the use of creative methods, forcing schools to resort to the well-known lecture method. CBC was introduced with the aim of establishing an education system that could lead to independent thinking, critical reasoning, and creativity among the learners, along with teaching approaches to equip the students to tackle the challenges of life (Kaviti, 2018; Ganira & Odundo, 2018; Koskei & Chepchumba, 2020). The introduction of the CBC heralds a new era that involves major pedagogical changes that alter the learning process. For example, Makunja (2016) argued that CBC-based pedagogical approaches adequately define the content

(knowledge, skills, values, and attitudes) and context (education, work, personal, or professional development) with the aim of improving educational outcome.

The full implementation of CBC seeks to radically transform the approaches, tools, and methods used in teaching and learning by moving the learners to the center of the learning process. Njoroge et al. Njoroge and Changeiywo (2019) indicated that the teachers' choice of the method of instruction is important in informing the nature and depth of skills acquired. The readiness and willingness of teachers to shift towards the use of pedagogical approaches including problem solving, investigation, and group learning that can enhance creativity and imagination, as recommended by the CBC, have come under sharp criticism. Proponents argue that it is a sure way of achieving the intended core competencies, while opponents concern themselves with the cost involved (Koskei & Chepchumba, 2020).

Embu West Sub-County is home to a number of private primary schools. They are all mixed primary schools and some have both day and boarding facilities. All these private primary schools are registered with the ministry of education and they offer the Kenyan national system of education. The Embu West Sub-County Director of Education's report (2021) indicated that in the process of implementing CBC, the development of creativity and imagination has been a challenge. In the report, the author noted that learners in these schools experience a limited range of ideas, lack originality in ideas, and struggle to adapt or think creatively when faced with new or unexpected situations. As learners express difficulties with demonstrations of creativity and imagination, it is not clear if this challenge emanates from the pedagogical approaches applied in the implementation of CBC. Thus, the need for the current study.

1.2 Statement of the Problem

To develop the core competencies enshrined in the implementation of CBC, teachers are required to apply different pedagogical approaches such as problem solving, investigation, and group learning. In Asia, Singapore and South Korea are among examples of countries emphasizing creativity, critical thinking, and character building in their curriculum (Kassim, 2017; Ho, Ong, & Tan, 2020). Korea expects its schools to foster creativity as part of quality subject-based learning. Thus, school heads encourage teachers to use projects and other transversal activities that foster creativity among the learners.

In Kenya, despite the immense benefits that are found in the use of different pedagogical approaches, many teachers are uncertain about how they could incorporate pedagogical approaches that can foster creativity and imagination among the learners. Muchiri and Rosana (2022) reported that in response to the challenges teachers were experiencing in the implementation of CBC and the development of core competencies, particularly creativity and imagination, the government is ensuring that teachers get professionally trained on the required skills. Regardless of the government's effort to train teachers, there have been complaints from stakeholders in private primary schools in Embu West Sub-County concerning the ineffectiveness of learners' acquisition of the core competencies enshrined in the CBC, and in particular, creativity and imagination skills. If creativity and imagination skills are not cultivated among learners, there will be a decrease in adaptability and innovation, as well as limited career opportunities for them. Numerous contemporary job roles necessitate creative thinking, whether in technology, arts, business, or other sectors. Without nurturing creativity and imagination, students could find themselves inadequately prepared for such careers, resulting in constrained prospects.

These factors, coupled with the insufficient evidence of how teachers' pedagogical approaches foster creativity and imagination, have necessitated the current study, which sought to find out the influence of teachers' pedagogical approaches on learners' acquisition of creativity and imagination in the implementation of CBC in private primary schools in Embu West Sub-County, Kenya.

1.3 General Objective of the Study

To investigate the influence of teachers' pedagogical approaches on learners' acquisition of creativity and imagination skills in the implementation of competence-based curriculum in private primary schools in Embu West Sub-County, Kenya.

1.3.1 Specific Objectives of the Study

This study was guided by the following specific objectives:

i. To examine the extent to which teachers' application of problem-solving teaching approaches influences learners' acquisition of creativity and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County, Kenya.
ii. To determine how the teachers' application of an investigative teaching approach influences learners' acquisition of creativity and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County, Kenya.
iii. To find out how teachers' use of group learning approaches to teaching influences learners' acquisition of creativity and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County, Kenya.

1.4 Research Questions

The study was guided by the following research questions:

i. How does problem-solving approach influence learners' acquisition of creativity and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County, Kenya?

ii. To what extent does application of an investigative approach influence learners' acquisition of creativity and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County, Kenya?

iii. How does use of group learning approach influence learners' acquisition of creativity and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County, Kenya?

1.5 Significance of the Study

The findings of the current study may be useful to Kenya Institute of Curriculum Development (KICD) curriculum developers as they review primary school syllabuses and instructional objectives in the direction of competency-based education. The information obtained from the study may help the Kenya National Examination Council (KNEC) improve its methodology for assessing learning outcomes and make it more comprehensive. The findings of this study may also be useful to the Quality Assurance and Standard Officer (QASO) and to the Sub-county director of education Embu West Sub-County, as they will contain empirical evidence-based methods, group learning that teachers can use to ensure the acquisition of creativity among learners. The findings of the study may benefit the head teachers in a number of ways, for example, by understanding how different teaching methods influence pupils' creative thinking and imaginative abilities. The head teacher can make informed decisions regarding

curriculum development, teacher in-service training, and instructional practices. For example, if certain pedagogical approaches are found to be particularly effective in fostering creativity, the head teacher can encourage their widespread adoption across classrooms. The findings can also inform professional development initiatives for teachers, providing guidance on best practices for cultivating creativity and imagination in pupils.

Teachers, who are the implementers of the CBC in their various schools, may find this research useful as it may provide them with empirical evidence regarding the effectiveness of different teaching methods such as group leaning in fostering creativity and imagination among pupils. Armed with this knowledge, teachers can tailor their instructional strategies to better engage pupils and enhance their learning outcomes. The findings of this study may be of benefit to leaners as they will have opportunities to engage in activities and experiences that stimulate their creative thinking and imaginative capacities. When learners are actively involved in creative and imaginative activities, they are more likely to be enthusiastic about learning and take ownership of their educational journey. In a rapidly changing world, the ability to think creatively and imaginatively is crucial for adapting to new situations and addressing noble challenges. Learners who develop these skills may be better equipped to face uncertainties and innovate in their personal and professional lives.

Parents play a vital role in their child's education. Research on pedagogical approaches can provide them with insights into the teaching methods used in schools. This knowledge can empower parents to make informed decisions about their child's education and choose schools or programs that align with their values and goals. Parents can collaborate with teachers to support their child's creative and imaginative development at home. They can incorporate activities and discussions that promote these skills, creating a holistic learning environment that extends

beyond the classroom. Armed with knowledge about the importance of creativity and imagination in education, parents can advocate for well-rounded curriculum that prioritize these skills. They can engage in meaningful conversations with schools and policymakers to ensure that educational systems address the holistic development of students. When parents are aware of the educational strategies used by teachers, it fosters better communication and collaboration between parents and educators. This partnership enhances the overall educational experience for the learners.

The community may also benefit by having holistic individual with knowledge and skills to succeed in a highly competitive world. The study may also be useful for future research as a frame of reference for teacher pedagogical approaches used in CBC implementation. The current study may benefit the researcher by providing a solid foundation on which to build ideas and opinions concerning teacher pedagogical approaches.

1.6 Scope and Delimitations of the Study

This study was conducted in Embu West Sub-County, in private primary schools. This is because the acquisition of core competencies among the learners in the implementation of CBC in Embu West Sub-County in most private primary schools has been faced with challenges. The study focused on head teachers, teachers, and the Embu West Sub-County Quality Assurance and Standard Officer. Though there are other pedagogical approaches that can be employed by teachers to foster creativity and imagination, the current study focused on problem solving, investigation, group learning, as well as availability of instructional materials in relation to how they influence learners' acquisition of creativity and imagination skills.

1.7 Theoretical Framework

The theoretical framework serves as the foundational structure that underpins and sustains a research study's theory. It presents and elucidates the theoretical underpinnings that provide an explanation for the existence of the research problem being investigated (Shepherd, 2019). Consequently, the present study will be rooted in constructivism theory, initially formulated by Dewey in 1938. In conjunction with this theory, the Dimension Model, devised by Felder and Silverman in 1988, will be incorporated. This integration aims to mitigate the limitations of one theory by leveraging on the strengths of the other.

1.7.1.1 Constructivist Theory

The constructivism theory of learning holds that knowledge is actively constructed by organizing subjects, not passively received from the environment (Lerman, 2012). According to Odundo and Gunga (2013), constructivism is a cognitive theory that stimulates an individual learner to process stimuli from the environment and the resultant cognitive structures that allow the learner to build and produce adaptive behavior. The social interaction of a learner within the environment provides opportunities to become aware of differences in perspective and offers intrinsic motivation to adapt these into schemata (Qingtang, 2022).

According to Lerman (2012), constructivist theory does not dictate how one should teach. However, it does make it incumbent upon the teacher to deal with each learner as an individual, to value diversity of perspective, and to recognize that the learner is a direct reflection of his or her life experiences. A person's education is an element of related involvements, mental structures, and convictions that are utilized to translate articles and occasions (Bredo, 2014). Bredo (2014) further stresses that learners do not acquire knowledge and understanding by passively perceiving them within a direct process of knowledge transmission but rather

construct new understandings and knowledge through experience and by integrating new information with what they already know. This type of learning is enhanced by applying pedagogical approaches that foster creativity and imagination where the learner is at the center of learning.

1.7.1.2 Strengths of Constructivist Theory

The greatest strength of constructivist theory in teaching and learning activities is that it fosters the development of creativity and imagination abilities in a learner. These activities are based on the premise that comprehension is a gradual, emerging process in which readers grow in comprehension abilities by processing texts in a generative manner, building on their own experiences, knowledge, and values. This theory provides effective teaching and learning strategies for learners who learn best in a hands-on environment and helps them better relate the information learned in the classroom to their lives. The constructivism theory also caters to the learners' prior knowledge and encourages teachers to spend more time on the learners' favorite topics without interfering with the learning process. In a constructivist classroom, learners often work in groups to attempt projects and perform experiments in order to move from the known to the unknown.

1.7.1.3 Weaknesses of Constructivist Theory

Theory advocates the abolishment of the system that encourages rote memorization, standardized testing, and a one-size-fits-all approach to learning, focusing primarily on academic achievement and examination scores. In contrast, the theory favors a system that develops a holistic set of competencies and skills in learners, moving away from a purely content-focused curriculum. It emphasizes personalized learning experiences, learner-centered approaches, and the integration of real-world applications, fostering critical thinking, problem-solving, creativity,

and collaboration, which are at the core of CBC. The theory favors the CBC, which places greater emphasis on continuous assessment, practical learning experiences, and individualized support for learners, aiming to prepare them for diverse pathways beyond traditional academic pursuits. However, without standardized grading and evaluations, teachers may not know which students are struggling, which is a weakness of the theory.

1.7.1.4 Application of Constructivists Theory to the Study

The rationale for using this theory is to support pupils learning in order to acquire creativity and imagination skills, as it motivates the learner by removing the conventional teaching strategies that make the teaching and learning process boring and less motivating. The constructivist theory to be adopted in the study is a social constructivist approach to learning and provides learners with an opportunity to construct knowledge at an individual level. This inclusion underlies the assumption that communication, experimentation, and collaboration are fundamental to learning. The role of the teacher is to facilitate learning, and pupil learn from their peers in groups. Importantly, this theory has been used in many studies in science across grade levels (Etudor & Samuel, 2011; Lee, 2010; Tosa, 2011). This theory is broad enough and widens pupil engagement in the learning process from elementary to middle school; it allows pupils to progressively build on prior knowledge and apply it to "make sense of their world" from a constructivist perspective. The other rationale for using constructivism theory for this study is that it will guide our research to conceptualize how teachers should use teaching approaches that enhance their learners' logical and conceptual growth. Pupils should be allowed to construct knowledge by being active participants in learning and investigation.

Constructivist theory provides an analytical lens for a holistic approach to teaching and learning. To answer the research questions from multiple perspectives, this theory helped to

explore the process, implementation, and outcomes of the implementation of the competency-based curriculum. Finally, constructivist theory provides a theoretical framework for the present study to investigate the issues related to current teaching and learning. This was achieved by investigating the influence of a teacher's pedagogical approaches on learners' acquisition of creativity and imagination skills and performance in the implementation of a competence-based curriculum in private primary schools in Embu West Sub-County.

1.7. 2 Dimension Model

The study will be anchored on the Dimension Model developed by Felder and Silverman in 1988. The model by Felder and Silverman (1988) categorized learners into four dimensions based on their preferred learning styles. A learning style refers to an individual's preferred and most effective way of acquiring and processing information. It reflects the various ways people approach learning tasks, comprehend new information, and engage with educational content. Learning styles are often thought to play a role in how people best understand and retain knowledge. While teachers ensure learners acquire creativity and imagination skills in the implementation of competence-based curriculum, they also need to ensure the pedagogical approaches applied align with the Individual learning styles of the learners (Wang and Ming (2020). Learning styles are important to consider in effective pedagogical practices because different students learn in different ways. Each student has certain specific characteristics and therefore prefers a specific method of learning. The model proposes four dimensions for learners.

The first dimension distinguishes between an active and a reflective way of learning. This dimension reflects a person's preference for active engagement in the learning process versus a preference for reflecting on the material. Active learners tend to participate actively in discussions, prefer group activities, and enjoy hands-on experiences. Reflective learners, on the

other hand, prefer to think deeply about the material, often preferring solitary study and contemplation. Tesfaye and Kassegn (2015) argued that active learners tend to value a cooperative learning environment, and such learners should be guided by the teacher and given material that they can discuss with their peers.

The second category distinguishes between sensing and intuitive learners: Sensing learners prefer concrete and factual information, relying on their five senses to grasp concepts. They tend to be practical and detail-oriented. Intuitive learners are more comfortable with abstract and theoretical concepts. They are imaginative and tend to focus on the big picture. The third dimension distinguishes between visual and verbal learners. Visual learners learn better through images, diagrams, and visual aids. They often remember information better when it's presented in a visual format. Verbal learners, on the other hand, learn better through written or spoken explanations. They often excel in activities involving reading, writing, and group discussions.

The fourth dimension distinguishes between sequential and global learners. This dimension pertains to how learners approach the organization of information. Sequential learners prefer to learn in a linear and step-by-step manner. They build their understanding incrementally and are comfortable with structured learning paths. Global learners, on the other hand, prefer to see the big picture first and then fill in the details. They tend to be creative and can sometimes struggle with following rigidly structured learning sequences. Felder and Silverman's model suggests that individuals have varying preferences along each of these dimensions. The idea behind the model is that understanding a learner's preferences can help the teacher tailor their teaching pedagogy to better match the student's learning style, ultimately enhancing the learning experience and performance (Ocampo & Siahaan, 2023).

1.7.2.1 Strengths of the Dimension Model

The model by Felder and Silverman (1988) has various strengths: The model acknowledges the diversity of learning preferences and styles among individuals. It emphasizes that people have different strengths and preferences, which can help teachers design more inclusive teaching pedagogies. The model also allows flexibility in teaching. Teachers can use this model to adapt their teaching pedagogies to a broader range of learning styles in their classrooms. This can enhance the effectiveness of instruction and improve students overall acquisition of creativity and imagination. The model doesn't categorize learners into rigid boxes but instead presents a spectrum along each dimension. This approach acknowledges that individuals may exhibit a mix of preferences and can adapt their learning style depending on the context. The Dimensional Model encourages learners to reflect on their own learning preferences and become more self-aware of how they process information. This self-awareness can lead to better study strategies and improved learning experiences. The model provides practical insights that teachers can easily apply to their teaching pedagogies, such as incorporating a mix of active and reflective activities or catering to both sensing and intuitive learners in lesson plans.

1.7.2.2 Weaknesses of Dimension Model

While the Dimension Model by Felder and Silverman has been widely used in educational contexts to understand and tailor teaching methods to different learning styles, it has also faced criticism and scrutiny. Critics such as Sabine and Silvia (2007) argue that the model oversimplifies the complex nature of learning styles by reducing them to just four dimensions. In reality, learning styles are likely to be more diverse and nuanced, and trying to pigeonhole individuals into these categories might not capture the full complexity of how people learn. The model categorizes individuals into fixed categories, implying that a person's learning style

remains constant over time and across all learning situations. However, researchers such as Droper and Waldman (2018) suggest that learning styles can be context-dependent and evolve as learners gain experience and adapt to new environments.

1.7.2.3 Application of Dimension Model to the Study

This study investigates the influence of teachers' pedagogical approaches on learners' acquisition of creativity and imagination skills in the implementation of competence-based curriculum. The Dimension Model holds that teachers' pedagogical approaches need to consider the various learning dimensions of the diverse learners in the class. This model is relevant to the current study in a way that when designing pedagogical approaches by the teachers involve tailoring teaching methods to accommodate various learning styles. Thus, teachers can apply this model by designing a variety of classroom activities that cater to different learning preferences. For example, incorporating group discussions and hands-on projects can engage both active and reflective learners. Providing a mix of visual aids and written explanations can support both visual and verbal learners.

Assessment methods can also be diversified, including both practical and theoretical assessments. Teachers can also present content using a combination of visual aids, textual explanations, and hands-on demonstrations. This accommodates learners with varying preferences for how they consume information. For instance, visual learners may benefit from diagrams and videos, while verbal learners may appreciate detailed explanations. Providing instructional materials in multiple formats can help address diverse learning styles. This might include written materials, videos, interactive simulations, and more. This allows students to choose the format that suits their learning preferences. Designing activities that allow students to approach topics both sequentially and globally can be effective. For instance, presenting an

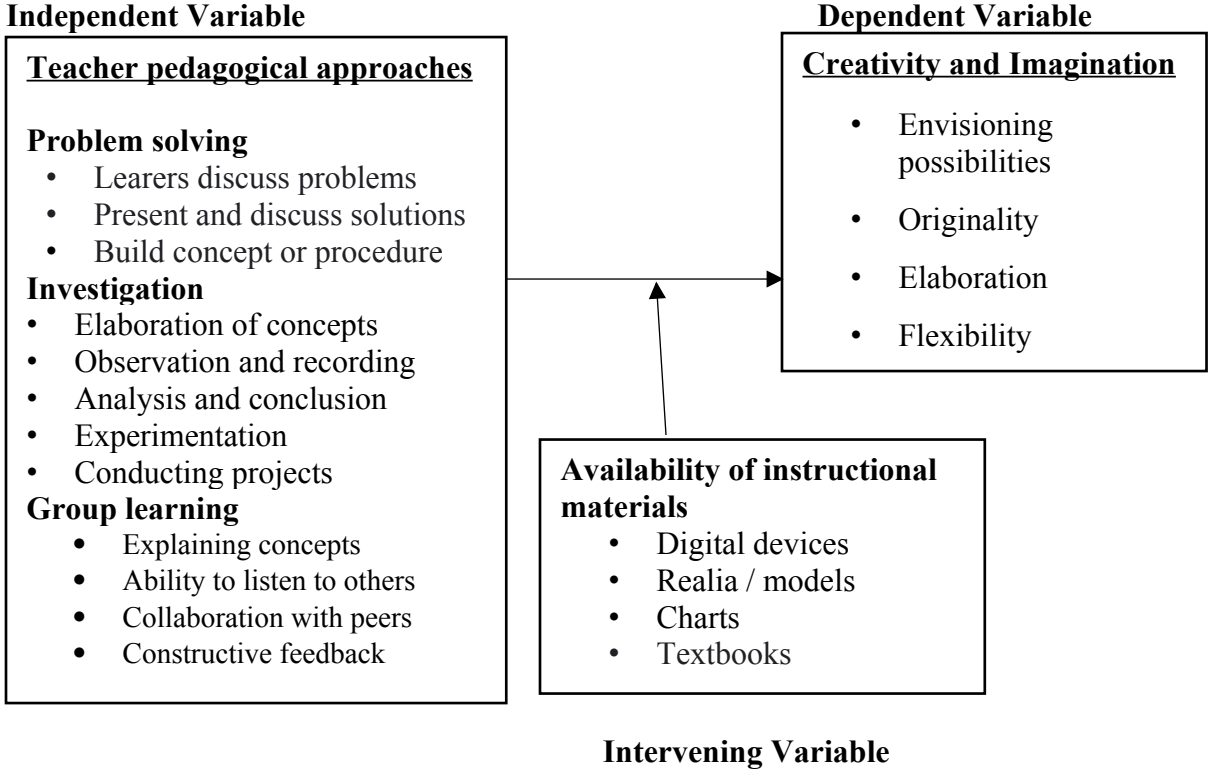
overview of a concept before diving into details can cater to global learners, while breaking down complex topics into step-by-step components can accommodate sequential learners. With such a diversified way of presenting information, learners with different learning styles can develop their creativity and imagination.

1.8 Conceptual Framework

Orodho (2009) defined a conceptual framework as a graphical illustration of the relationship among variables in research. Figure 1 is a conceptual framework that shows the relationship between teachers' pedagogical approaches and learners' acquisition of creativity and imagination skills in the implementation of competency-based curriculum.

Figure 1

Relationship between Teacher Pedagogical Approaches and the Development of Creativity and Imagination



Source: ***Researcher (2024)***

As shown in Figure 1, the independent variable of the current study is teachers' pedagogical approaches. These approaches include problem solving, investigation, and group learning. Problem solving will be indicated by a teacher's use of real-life problems that learners are supposed to solve, generate solutions to the problems, and draw lessons. Problem-solving as a teaching approach is assumed to provide opportunities for learners to exercise their creativity and imagination. It fosters critical thinking, promotes out-of-the-box ideas, and empowers learners to think independently and explore new concepts (Fashay, 2022). By embracing challenges and integrating real-world relevance, learners develop creative problem-solving skills that can be applied in various domains throughout their lives.

The investigation approach will be indicated by the use of case studies, where learners investigate their causes and effects, draw conclusions, and learn lessons from them. The investigative approach to teaching is assumed to empower students to actively explore, question, and discover knowledge. By nurturing curiosity, problem-solving skills, independence, collaboration, interdisciplinary connections, and hands-on experiences, this approach creates fertile ground for fostering creativity and imagination among learners.

Group learning will be indicated by the use of well-structured student groups to accomplish tasks. A task can be an expedition or an investigation in nature. The study assumes that group teaching approaches provide a conducive environment for fostering creativity and imagination among learners. By promoting diverse perspectives, collaboration, constructive feedback, risk-taking, and social interaction, these approaches empower students to unleash their creative potential and develop valuable skills for problem-solving and innovation. The intervening variable is the availability of instructional materials. The instructional materials were

looked at in relation to how they enable the development of creativity and imagination in the implementation of competency-based curriculum in private primary schools in Embu West Sub-County.

1.9 Operational Definition of Key Terms

Competence: This refers to the ability, skill, or capability of a learner to effectively and efficiently perform tasks, solve problems, achieve goals, or handle specific situations. It encompasses the practical application of knowledge and the capacity to execute tasks successfully.

Creativity: This refers to the ability to generate new ideas, concepts, or solutions that are original and valuable. It involves thinking divergently and exploring alternative perspectives.

Group learning: This is teaching approach that involves students working together in small groups to achieve a common learning goal. In this approach, students collaborate on tasks or assignments, with each member of the group contributing their ideas, skills, and knowledge. Group learning encourages active participation, peer interaction, and shared responsibility for learning outcomes.

Imagination: This is the cognitive process of forming mental images, sensations, or concepts that are not present to the senses. It involves the ability to visualize, conceptualize, and mentally simulate scenarios, ideas, or experiences. Imagination allows learners to explore hypothetical situations, envision possibilities, and think creatively about the world around them.

Investigation: This is an approach to teaching that requires both the teacher and the learners to be involved in asking questions that help identify problems and find appropriate solutions.

Learners are involved in problem-solving when they are engaged in exploring, discovering and investigating the world around them.

Pedagogical approaches: This refers to the methods, strategies, and techniques employed by teachers to facilitate learning and instruction in educational settings. Pedagogical approaches may include instructional methods such as problem solving, investigation and group learning.

Problem-solving: This is a pedagogical method focused on guiding students through the process of identifying, analyzing, and solving complex problems. This approach places an emphasis on engaging students in active learning experiences where they are challenged to apply their knowledge and skills to real-world situations, discuss problems and find solutions.

The investigative approach: This is a pedagogical method that emphasizes student-centered learning and hands-on exploration of topics. In this approach, students actively engage in the processes of inquiry, investigation, and discovery to develop a deeper understanding of the subject matter. Teachers guide students through investigative activities where they are encouraged to ask questions, collect data, conduct experiments, and analyze the results and make conclusions based on the findings.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter presents related literature on the influence of teachers' pedagogical approaches on learners' acquisition of creativity and imagination skills in the implementation of competence-based curriculum. The literature reviewed was guided by the research questions and was conducted in terms of global, continental, regional, and local contexts. The gaps were identified in the literature, which the study sought to fill.

2.2 Problem-solving Approach and Learners' Acquisition of Creativity and Imagination Skills

The problem-solving teaching approach has attracted the attention of scholars across the globe. Thus, Rusilowati (2021) conducted a study in the USA whose aim was to describe the effect of science, technology, engineering, and mathematics (STEM) learning on physics material applied in schools on the problem-solving abilities of students. The method used in the study was meta-analysis, in which the researcher analyzed several articles as needed. Articles were limited to the last 5 years of publication, namely 2014–2019. From the results, it was concluded that learning through the STEM approach improves students' problem solving abilities. This study only focused on STEM, an approach to learning and development that integrates the areas of science, technology, engineering, and mathematics. Different from this study, the current study focused on all learning areas as it sought to find out the influence of teachers' pedagogical approaches on learners' acquisition of creativity and imagination skills in the implementation of competence-based curriculum in private primary schools in Embu West Sub-County, Kenya.

Blanco (2022) conducted a study at the University of Cantabria in Spain. The study sought to find out the efficacy of teaching students diagnosed with autism spectrum disorder to solve word problems involving multiplication and division. A single-case, multiple-baseline design across behaviors was conducted. The study targeted teachers, students, and heads of departments at the university. The ability to solve each of the three types of multiplication problems examined (equal groups, multiplicative comparison, and Cartesian product) was addressed separately. The study found that students generalized the effects of instruction to two-step (addition and multiplication) word problems. This study revealed a geographical gap given that it was conducted in Spain, a country that has a different educational background from the current study, which will be done in Embu West Sub-County, Kenya. The study by Blanco also dealt with a special group of learners, that is, learners suffering from autism, but the current study will deal with normal pupils, hence bridging the gap.

Qianqian (2022) conducted a qualitative study in China aimed at establishing the effect of collaborative problem solving. The study revealed that in the eight-week semester, a total of 42 student teachers participated in two online collaborative learning activities. Student teachers' discourse data were collected, and the data were coded based on a collaborative problem-solving assessment model. This study used Epistemic Network Analysis (ENA) to explore the collaborative problem-solving processes of student teachers in different online collaborative learning tasks. The results showed that both the high and low academic performance groups worked to maintain positive communication, but the learners in the high academic performance groups negotiated on ideas while the learners in the low academic performance groups focused on sharing resources or ideas. Moreover, fine-grained centroid analysis on a weekly basis showed that the high academic performance groups began by maintaining positive

communication and ended by negotiating ideas, while the low academic performance groups began by sharing resources and ideas and ended by regulating problem-solving activities. Though the cited study is related to the current study, it uses qualitative approaches in the correction and analysis of data which might have been limited in the collection of data. The current study will fill this gap by using both qualitative and quantitative approached as allow complementarity of both methods to enhance the quality and authenticity of the collected data. While this study is related to the current study, this study looked at the aspect of problem solving, it lacked an informative discussion on how problem solving as a teaching approach enhanced creativity and imagination among the learners. Hence the need for the current study to fill the gap.

In a related study in Turkey, Yasemin (2022) conducted a study aimed at examining the effect of the P4C curriculum on 5- and 6-year-old children's critical thinking through philosophical inquiry and their problem-solving skills. The study group included a total of 40 children learning in kindergartens at an elementary school in Çanakkale, Turkey. The study used a quasi-experimental model with a pretest-posttest control group. The "Philosophy for Children Curriculum, prepared by interviewing two experts, was administered to the children in the experimental group for ten weeks in two sessions per week with an average total duration of 40 minutes per session. The study deployed the "Critical Thinking Scale through Philosophical Inquiry for Children 5–6 Years Old" and "Problem Solving Skills Scale for Children (PSSS)" as data collection tools. The analyzed results showed a significant difference between the pretest and posttest scores of both groups in terms of the experimental groups' critical thinking skills through philosophical inquiry within-group comparisons. Although the posttest mean score of the experimental group's critical thinking skills through philosophical inquiry was higher than

the control groups, no statistically significant difference was observed between them. Considering the comparisons of problem-solving skills within groups, a significant difference was determined between both groups' pretest and posttest scores. When the problem-solving skills were compared between groups after the test results, a significant difference was noted in favor of the experimental group. This study used a quasi-experimental model, which focuses more on cause-and-effect relationships between two or more variables, but the current study used descriptive, which helped in gathering data on a subject and understanding of a group. It used a cross-sectional survey for quantitative data and phenomenology for qualitative data that was collected using interviews.

In Ethiopia, the education system emphasizes the use of problem-solving teaching methods in order to develop learners' competencies. Ahmed (2020) conducted a study in Ethiopia which was focused on high school students' perceptions of cooperative problem-solving learning in mathematics classrooms. A case study was chosen as the research design for this study. Participants in this study were grade 11 students at Dangila preparatory high school in Awi-Zone, Ethiopia. The total number of participants was 105. The data were collected using a structured Likert scale questionnaire consisting of 15 questions that focus on cooperative problem-solving learning and an unstructured interview. The quantitative data were analyzed using one sample t-test, whereas the qualitative one was analyzed using narration on the basis of themes created as per the basic questions of this research. The results of this research showed that students had positive responses toward the implementation of cooperative problem-solving learning. The quantitative data revealed that cooperative problem-solving learning has a great effect on students' learning and, consequently, on their mathematics performance. The qualitative data disclosed the generic skills of students and helped teachers understand students'

perceptions of their experiences gained from the learning activities. The author concluded that cooperative problem-solving learning was found to be a good approach in the teaching of mathematics, as it allows students to learn mathematics easily and perform better. This study had an elaborate discussion about problem solving as a teaching method, but it was only focused on the study of mathematics. On the contrary, the current study focused on all the subject areas, which helped to bridge the gap identified in the cited study.

A study was conducted by Nkechi (2023) to determine the effect of problem-solving and jigsaw on the academic achievement of business education students in financial accounting in universities in Anambra State, Nigeria. The study was quasi-experimental research that specifically used the pre-test and post-test non-equivalent control group designs. The population of the study was 719 business education students in universities in Anambra State, and the sample size was 123 business education students drawn from 2 universities. The Financial Accounting Achievement Test (FAAT), developed by the researcher using 300 past questions between 2020 and 2022, was used as a research instrument. FAAT was administered to business education students in both experimental and control groups. Findings revealed that using problem-solving and jigsaw instructional modes enhances business education students' academic achievement in financial accounting when compared with lecture teaching methods.

Based on the findings of the study, the researcher concluded that problem-solving and jigsaw instructional modes have the capacity to improve academic achievement in business education and financial accounting. It was therefore recommended, among others, that problem-solving and jigsaw instructional modes be formally adopted by business education teachers in universities for teaching financial accounting and other skill-based subjects to improve the academic achievement of business education students. This study is in favor of using problem

solving as the best teaching method, however, it did not look at how problem solving as a teaching technique influences the critical thinking and imagination of the learner, which is the gap that the current study sought to fill.

Another study in Nigeria was conducted by Ogundele and Ibrahim (2023) aimed at assessing how students' learning results in machine shop practice were affected by structured and think-aloud pair problem-solving instructional tactics. The subjects of the research were 80 Nigerian Certificate in Education (NCE) III metalwork technology students from all colleges of education. The Machine Shop Practice Interest Inventory (MSPII), Machine Shop Practice Cognitive Achievement and Retention Test (MSPCART), and Machine Shop Practice Psychomotor Skill Achievement Test (MSPPAT) were the instruments utilized for data collection. The study findings showed that: students who were taught Machine Shop Practice using the Think-Aloud Pair Problem-Solving instructional strategy had mean gain interest scores that were higher (29.19) than those who were taught using the Structured Problem-Solving instructional strategy, which had a mean score of 27.86; in comparison to students taught using the Think-Aloud Pair Problem-Solving instructional approach, students taught Machine Shop Practice utilizing the Structured Problem-Solving instructional method had higher mean gain retention scores of 41.37.

The study suggested, among other things, that lecturers for Machine Shop Practice should employ structured problem-solving teaching strategies to improve students' cognitive recall and think-aloud pair problem-solving instructional strategies to increase students' attention. This study suggests the use of problem solving as beneficial in learning; however, it focused on technology students from colleges of education. Different from this study by Ogundele and Ibrahim, the current study will focus on learners from private primary schools and will find out

how problem-solving teaching approaches foster creativity and imagination among learners in the implementation of CBC.

Students in secondary schools in Rwanda manifest difficulties in learning science subjects, including biology. Studies revealed that inadequate teaching methods dominated by teacher-centered traditional or conventional educational strategies are some of the factors that cause difficulties in learning, which in turn leads to poor achievements in biology. A study conducted by Manishimwe (2023) investigated the effect of inquiry-based learning (IBL), including the use of problem-solving approaches, on secondary school students' achievement in biology. There were 231 secondary school students from six schools in Rwanda that constituted the sample. A quasi-experimental quantitative approach consisting of pre- and post-tests was used for data collection. Descriptive statistics were used for data analysis. Results indicated that the mean post-test score of the experimental group was higher than the mean of its counterparts in the control group. Further, the t-test and ANCOVA were used for inferential statistics. Findings showed significant differences between experimental groups taught with IBL and control groups taught with conventional teaching methods.

The study recommends educational stakeholders use the IBL designed by the 5Es instructional model at the school level to solve problems related to poor performance in biology. From the study by Manishimwe (2023), it can be understood that Inquiry-Based Learning shifts the traditional role of the teacher from being the primary source of information to being a facilitator and guide for students' learning. Instead of simply delivering content, teachers using IBL create an environment where students can actively participate in the learning process and construct their own knowledge. Students are presented with real-world problems or scenarios that require critical thinking and problem-solving skills. They work collaboratively to analyze

the problem, generate possible solutions, and implement their ideas. The study, however, was not clear on how critical thinking and imagination can be developed among the learners, which is the gap that the current sought to fill.

In Kenya, the fundamental challenge facing the learning of mathematics in secondary schools is how to enhance students' conceptual understanding associated with the learning process. Based on this challenge, Mutange (2020) investigated the influence of using the problem-solving approach to teaching on secondary school students' mathematics achievement by school type. The purpose of the study was to determine whether the use of the problem-solving approach had any influence on students' mathematics achievement by school type. Students from one hundred and nine schools in Vihiga County formed the population of the study. Stratified random sampling was used to select twelve schools from the 109 schools. The population of the study was 1459. Form three students were selected from the twelve schools that participated in the study. The sample size of 727 students was selected from the 109 schools by the use of purposive and simple random sampling techniques. The Solomon Four-Group Design was used in the study. The respondents were assigned in their intact classes to four groups: experimental groups 1 and 3, and control groups 2 and 4. All the groups were taught the same content on the topic of commercial arithmetic.

However, groups 1 and 3 were taught using the problem-solving approach, while groups 2 and 4 were taught using conventional methods. Groups 1 and 2 were pre-tested prior to the implementation of the Problem Solving Approach treatment. Mathematics Achievement Test 1 and Mathematics Achievement Test 2 were used to collect data. Reliability coefficients of 0.795 and 0.872 were obtained for Mathematics Achievement Test 1 and Mathematics Achievement Test 2, respectively, using Cronbach's Coefficient alpha formula. After the treatment, all four

groups were post-tested. The results showed that increased student learning occurred among students in the three types of schools and more significantly in the County schools in comparison to the National and Sub-county schools when the problem-solving approach was used. The study concluded that the problem-solving approach is a more effective teaching approach for the students in the County schools in comparison to those in the National and Sub-county schools. This study focused on problem solving as the best approach to teaching mathematics. It did not look at how problem solving involves creativity and imagination; hence the need for the current study that investigated how problem-solving teaching approaches influence learners' acquisition of creativity and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County.

Matemba and Awinja (2014), in their study, sought to determine the relationship between problem-solving approaches and academic performance and to establish gender differences in problem-solving approaches among secondary school students in Kakamega Municipality. A correlational research design was adopted for the study. Using stratified sampling, six schools, consisting of one boys' school, one girls' school, three public co-educational schools, and one private co-educational school, were sampled. Proportionate and simple random sampling was used to select a total of 200 students, comprising 113 boys and 87 girls. Questionnaires, observation check lists, and Focus Group discussions were used to collect data. Quantitative data collected in the field was analyzed using descriptive and inferential statistics, while qualitative data from Focus Group discussions was analyzed qualitatively.

The differences between groups on the studied variables were tested using the t-test, while correlation was used to test the null hypotheses. The study revealed no significant relationship between problem-solving approaches and academic performance, and gender had no

effect on problem-solving. It was recommended that counselors and secondary school teachers train students in positive problem-solving skills, and an ideal environment should be created for students to acquire positive problem-solving skills. The study points to the fact that Problem-solving teaching is an instructional approach that focuses on developing students' problem-solving skills by engaging them in real-world or authentic problem-solving tasks. Problem-solving teaching encourages students to analyze and evaluate information, consider multiple perspectives, and think critically to develop effective solutions. This helps learners develop their critical thinking skills, enabling them to approach challenges in a more systematic and analytical manner. The study, however, was conducted in secondary schools, but the current study focused on private primary schools to establish how problem-solving teaching approaches influence learners' acquisition of creativity and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County.

2.3 The Investigative Approach and Learners' Acquisition of Creativity and Imagination Skills

Despite longstanding calls to integrate science and mathematics in schools, concerns remain about how to achieve high-quality learning in Australia. Vaughan (2022) studied teachers' teaching approaches that helped enhance the interdisciplinary mathematics and Science project. The study aimed to integrate learning in both subjects through investigative inquiry processes. Teachers guide students to construct, evaluate, and refine multimodal representations in a four-stage teaching model. The study revealed that an investigative approach can enhance the learning of mathematics. This approach involves encouraging students to actively explore mathematical concepts, solve problems, and discover patterns and relationships on their own rather than simply memorizing formulas and procedures. The study, however, did not discuss

how an investigative approach to teaching influences creativity and imagination among the learners, which raises the need for the current study.

Hwang (2022) investigated the effects of a contextualized reflective mechanism-based augmented reality learning model on students' scientific inquiry learning performances, behavioral patterns, and higher-order thinking. The researcher designed a contextualized reflective mechanism-based AR learning model to assist students in completing scientific inquiry tasks. Guided by the proposed model, the researchers designed four stages of scientific inquiry learning: conceptual understanding, reflective cognition, in-depth inquiry, and knowledge building. A quasi-experiment and lag sequential analysis were conducted by recruiting 81 sixth-grade students to examine the effects of the proposed model on their scientific inquiry learning performances, higher-order thinking, and behavioral patterns. The experimental results reveal that the proposed approach improved students' inquiry learning performances and higher-order thinking tendencies (problem-solving tendency and metacognitive awareness). The evidence from this study also suggests that the students who learned with the proposed approach exhibited more observation, comparison, exploration, and reflection behavioral patterns on the field trip than those who learned without the contextualized reflective mechanism. The study was not specific on how investigative teaching practices influence the development of creativity and imagination among the learners.

In order to expand on the understanding of the application effect of inquiry-based teaching at the university level, Hong (2022) conducted a study in China that adopted the quasi-experimental design method, and through the purposive sampling method, 20 students from the Department of Fashion Design at a University of Science and Technology were invited to participate in the study. During the nine-month period, teaching experiments were carried out

using two inquiry models: QC/ADEAC and QD/ODEAC. First, when participants were thinking of a creative topic, they followed the process: Question (Q), Collection/Analysis (C/A), Discussion (D), Explanation (E), Amendment (A), and Confirmation (C) in the course. During the production process, the participants were allowed to improve on their work through the processes of Q, D/O, D, E, A, and C. The teacher became a true guide so that the participants could explore and work out how to improve their designs through independent investigative inquiry and practice. In the study, questionnaires were administered to participants at five important stages of the design project: "theme development," "color development," "first Work," "second Work," and "third Work." The results of the five surveys showed that the participants' curriculum interest, curriculum value perception, and curriculum confidence in the inquiry program all increased.

Based on the cited study, it is clear that in the investigative approach to teaching, the teacher assumes the role of a guide or facilitator rather than the sole source of knowledge. The focus is on encouraging students to actively explore and discover information, solve problems, and construct their own understanding of the subject matter. In the approach, the teacher provides a framework or guiding questions to stimulate inquiry and investigation. They help students formulate hypotheses, design experiments, gather data, and analyze their findings. The teacher also supports students in developing critical thinking skills, problem-solving abilities, and effective research methods. The cited study, however, uses students from the Department of Fashion Design at the University of Science and Technology, but the current study will focus on primary school children from private schools to determine how the investigative teaching approach influences learners' acquisition of creativity and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County.

Estomihi (2021) conducted a study about the implementation of competency-based curriculum in Tanzania: Perceptions, challenges, and Prospects. A Case of Secondary School Teachers in Arusha Region. A mixed-methods study employed cross-sectional survey research and a case study design that involved 233 teachers who were selected randomly, 10 heads of schools, and five district educational officers who were selected purposefully. The data were collected through questionnaires and interview schedules. The quantitative data were analyzed using SPSS 21, and thematic content analysis was used to analyze the qualitative data. The study revealed that teachers had a negative perception of the shift from content-based to competence-based curriculum, with a mean of 4. However, the majority of the teachers indicated a lower capacity to implement competence-based curriculum as more than 70% didn't attend in-service training. More than 60% of teachers cannot prepare teaching and learning activities that are investigative as required by the competence-based curriculum. The study revealed that investigative teaching approaches are a challenge to teachers in the implementation of CBC in Tanzania. The current study sought to find out if the same challenge is experienced in the implementation of CBC in Kenya.

The investigative teaching approach emphasizes student engagement and critical thinking. It involves hands-on, experiential learning activities where students actively participate in the learning process. They may conduct experiments, solve problems, or research information to find answers. In line with this argument, Owuor (2015) conducted a study about the experimental approach as a methodology for teaching physics in secondary schools. The study employed both descriptive survey and correlation design approaches with a population of 32 participants. Data was collected using questionnaires and interviews. A pilot study was done in three secondary schools to test the reliability of the data instruments (achieving Pearson's r value

of 80%). The study used both descriptive and inferential statistics such as mean, percentages, frequencies, and Pearson's r to analyze the quantitative data, while qualitative data was transcribed, organized, and categorized according to themes and sub-themes. The study results showed that, though experimental learning is an effective, leaner-catered approach to teaching, teaching load affects the quantity and quality of experiments carried out by Physics teachers. This study, however, did not discuss how experimental teaching approaches influence the acquisition of creativity and imagination among learners, which is the gap that the current sought to fill.

A related study by Eluket (2019) investigated the effects of an experimental approach to teaching on knowledge mastery and skill acquisition in chemistry in secondary schools in Teso South, Kenya. This study targeted 1216 Form 3 students in 18 secondary schools in Teso South Sub County since chemistry is one of the compulsory subjects in the region. Of this, 333 students from three secondary schools were sampled. The methodology employed in this research study was both quantitative and qualitative. The design used was quasi-experimental. The study employed three instruments, namely: A pre-test, an observation checklist for the acquisition of skills, and a post-test. The p values were used to determine the significance of the study. The study revealed a significant difference in the learners' performance between the experimental group and the control group. For the second objective, seven science skills (of observing, measuring, and recording, classifying, setting-up apparatus, reading scales, and manipulating data) were examined to determine whether students acquired them proficiently, to a small extent, or were unable to do so.

The t-test of these three dimensions gave $p = 0.0026$, $p = 0.0016$, and $p = 0.0238$, respectively, to mean that there was a significant difference in the science process skills

acquisition for the learners in the experiment group and those in the control group. The experimental group of learners performed better than the control group of learners in both mastery of knowledge and acquisition of process skills. Therefore, the study recommended that teachers of chemistry use an experimental approach in teaching chemistry to enhance students' performance. The study, however, though focused on experimental approaches as an aspect of investigative teaching methods, lacked a discussion about creativity and imagination, which the current study sought to address as it made efforts to find out how the investigative teaching approach influences learners' acquisition of creativity and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County.

2.4 Group Learning Teaching and Learners' Acquisition of Creativity and Imagination Skills

Group learning, also called cooperative learning, peer instruction, or team learning, refers to students who work together to learn. Within group education, students work with their classmates to solve complex and authentic problems that help develop content knowledge as well as problem-solving, reasoning, communication, and self-assessment skills. Borůvková (2016) conducted a study in Europe about small group learning methods and their effect on learners' relationships. The study aimed at answering the question; can cooperative learning methods help integrate isolated learners into the class? The research was realized as a pre-test-post-test design for a sample of 207 learners in the first, second, and third grades of lower secondary school. A standardized stoichiometric questionnaire, B-3, was used to determine the number of isolated learners before and after using the CL methods. Consequently, using the Wilcoxon statistic test of significance, the hypothesis was verified that the number of isolates after the Cooperative learning methods is statistically significantly lower than that of the case before using the non-

traditional teaching and learning method. Accordingly, the research results justified the implementation of cooperative learning methods in education. This study, however, did not discuss how group leaning influences the development of creativity and imagination among the leaners, which will was the focus of the current study.

Group learning (peer education) in India is often utilized as an intervention for promoting students' reproductive health education among young people. Though the evidence of its effectiveness is mixed. Siddiqui (2020) did a systematic review of the literature in the Indian context to get insight into the knowledge, attitudinal, and behavioral (KAB) outcomes affected by peer education, as well as the inputs, coverage, content, and context of such interventions. Out of the over 1500 publications identified through the database and bibliographic searches, 13 were included in the review; no quality assessment was done, given the dearth of publications matching the inclusion criteria. Analysis of the included publications highlighted the multiple ways that peer education is implemented in the Indian context, both as part of multi-component programs and as a stand-alone intervention. The outcomes from these initiatives were mixed, with some multi-component and some stand-alone initiatives affecting statistically significant outcomes. Despite the mixed results and the limited effects of behavior relative to knowledge, the study proposed that peer education has a place in an overall response to improving the sexual and reproductive health of young people. While group learning is used to promote sexual and reproductive health in India, the present study sought to find out how group learning approaches to teaching influence learners' acquisition of creativity and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County.

Mooly (2019) conducted a study aimed at understanding the students' level of satisfaction with group learning approach to teaching and its effectiveness regarding enhancing

students' learning in Hong Kong. The study was conducted for three cohorts of students in the academic years from 2013-14 to 2015-16. The findings indicated that the effectiveness of group leaning was influenced by the quality of the tutors and the level of co-operation of the students. Different from this study by Mooly, the current study sought to establish the influence of group leaning on the acquisition of creativity and imagination in the implementation of CBC in private primary schools in Embu West Sub-County.

Manathunga (2020) examined the relative effectiveness of formal cooperative learning compared to traditional lecture-based instructions in improving instructional processes and learning outcomes in Ethiopia. The study used a non-equivalent control group design, collecting data from a sample of volunteered undergraduate students at a large public University in Ethiopia. In general, results indicate that higher perceptions of academic challenge, cooperative interaction, learning gains, and overall satisfaction were associated with formal cooperative learning rather than traditional lecture-based instructions. In addition, results show that cooperative learning lessons were associated with more positive relationships between academic challenge, cooperative interaction, learning gains, and overall satisfaction. This study had an overview of the benefits of cooperative learning among university students in Ethiopia but did not look at how group learning influences creativity and imagination in the implementation of competency-based curriculum. Hence the need for the current to fill this knowledge the gaps.

Group learning is emphasized in Nigeria by the school heads for its benefit of helping in the acquisition of problem-solving skills to facilitate the expected development in the country. Group learning is associated with problem-based learning, a student-centered pedagogy that helps students develop problem-solving skills and improved knowledge through collaborative and self-directed learning under the teacher's guidance. However, the learning process in Nigeria

does not produce students with the required skills and knowledge because of traditional instructions by teachers. Mohammed (2015) conducted research to find out the roles of teachers and students in the development of collaborative learning and skills in Nigerian Secondary Schools. The study used a qualitative approach with an explanatory design. Fifteen (15) chemistry students and a teacher were purposefully selected from one Senior Secondary School (16 years old) as participants. The participants received six weeks of lessons on the topic of the purification of water. The researcher collected data during the intervention process through observations, field notes, and interviews after the lessons were conducted. The data were transcribed, triangulated, and analyzed using content analysis.

The results showed that the students improved their learning and acquisition of problem-solving skills, including communication, teamwork, and high-order thinking skills, due to effective collaborative learning activities among them. It was therefore recommended that a collaborative learning approach be introduced in all Nigerian Secondary Schools. Based on the study by Mohammed (2015), it can be said that group learning provides an opportunity for students to actively engage with the subject matter. It fosters discussions, encourages critical thinking, and deepens understanding through shared perspectives. Students can learn from each other's insights, ask questions, and clarify concepts, leading to a more comprehensive understanding of the material. This study, however, expressed limited discussion concerning how group learning enhances creativity and imagination among the learners, hence the need for the current study.

Improving the quality of teaching and learning using group learning approaches has caught the attention of scholars in Tanzania. To this effect, Mwaikokesya (2016) assessed the function of group discussion in teaching and learning and university lecturers' views on groups'

potential for improving undergraduates' learning using a qualitative approach. The study found that despite the wide acceptance of the use of group discussion in higher learning institutions for teaching and learning to promote students' lifelong learning capacity, there were mixed feelings about the potential of group discussion for developing this capacity, especially in the face of challenges such as a shift in student demographics and the changing pattern of university admissions. It was revealed that in most of the institutions, there was a conviction that the use of group discussion in teaching and learning has the potential to improve students' high-quality learning. The study, though it looked at the benefits of group learning, concentrated on university learning, which is the gap that the current study sought to fill by looking at how group learning fosters creativity and imagination among the learners.

Group learning approaches have been studied in Kenya in various subjects. Kimamo (2011) noted that performance in Biology at the secondary school level in Kenya remains poor, and one reason is the teaching approach adopted by teachers, with teacher-centered approaches being predominant. As a result, the author conducted a study to determine the effect of the cooperative learning approach on the mean achievement scores in Biology among secondary school students. A Solomon-four-non-equivalent-control-group design was used, and the target population comprised 183 form-two students in four secondary schools. Students were taught one Biology topic for five weeks, and the cooperative learning approach was used in experimental groups while the regular teaching method was used in control groups. A pre-test was administered before treatment, and a post-test was administered after treatment. A Biology Achievement Test was used to measure students' achievement, and it attained a reliability coefficient of 0.84 (N = 59) at pilot testing. Data was analyzed using t-tests, ANOVA, and ANCOVA, and hypotheses were accepted or rejected at a significant level of P 0.05. The

cooperative learning approach resulted in significantly higher mean achievement scores compared to regular teaching methods. The results from the study show that group learning is a significant teaching approach and should be adopted by teachers. The current study will build on the study by Kimamo (2011) to establish how group leaning influences the development of creativity and imagination among the leaders in the implantation of the CBC curriculum.

Keter and Ronoh (2016) investigated the Impact of the cooperative mastery learning approach (CMLA) on Students' Achievement in Chemistry by Gender in Bomet County, Kenya. A non-equivalent control group design under quasi-experimental research was used, in which samples of four co-educational sub-county secondary schools were drawn from the schools in the County. Each school provided one Form Two class for the study. This translated to a total of 205 subjects. Students in all four groups were taught the same chemistry content of the topic, Effect of Electric Current on Substances, for a period of five weeks. In the experimental groups, CMLA teaching strategies were used, while Conventional Teaching Methods were used in the control groups. Data was collected using the Chemistry Achievement Test (CAT), whose reliability coefficient was found to be 0.78. The findings from the study indicated that the achievement level was high for students taught using CMLA compared to those taught using Conventional Teaching Methods (CTM). The results also indicate that there was no gender difference in achievement when boys and girls were taught through CMLA, implying that the teaching approach is suitable for teaching both male and female students. The study recommended that since CMLA enhances students' achievement in chemistry, teachers should be encouraged to use it in an attempt to improve performance in chemistry. While this study by Keter and Ronoh focused on performance in chemistry, the current study focused on all learning areas as it sought to find out how group learning approach to teaching influence learners' acquisition of creativity

and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County.

2.6 Summary of Literature and Knowledge Gap

Based on the reviewed literature, it is apparent that several gaps have been recognized. These identified gaps encompass methodological, knowledge, and geographical aspects. For instance, considering a study conducted by Hong (2022), which was conducted in China, its findings might not be directly applicable to elucidate the teaching and learning scenario in Kenya. This disparity constitutes a geographical gap that the present study aims to address. Methodological gaps have emerged from studies utilizing methodologies different from those intended for use in the current study. For example, Nkechi (2023) employed a quasi-experimental design, whereas the current study will adopt a convergent, parallel, mixed-methods design. Some investigations have concentrated on specific subjects, like Muthee's (2016) exploration into the types of instructional resources employed by mathematics teachers or Dhakal's (2018) examination of instructional material availability and utilization in geography teaching within community secondary schools in Kathmandu district, Nepal. In contrast, the current study sought to distinguish itself by focusing on fostering creativity and imagination across all learning domains rather than confining itself to a single subject area.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design, location of the study, target population, sampling techniques, and sample size. It also presents the validity of quantitative instruments, the pilot testing, and the reliability of quantitative instruments, data collection procedures, data analysis procedures, and ethical considerations.

3.2 Research Design

According to Creswell (2018), research design refers to the overall strategy or plan that outlines how a researcher intends to conduct a study. It serves as a roadmap that guides the entire research process, from the formulation of research questions or hypotheses to the collection and analysis of data, and finally to drawing conclusions and making interpretations. This study will use a concurrent parallel design in the mixed methods approach. A concurrent parallel mixed method design will be preferred because it enables the researcher to integrate the results of the two methods during the interpretation phase. A concurrent parallel mixed method design is selected when the researcher, simultaneously and with equal weight, uses quantitative and qualitative methods in an attempt to confirm or cross-validate the findings within a single study (Perlindungan, 2018). In this design, the collection and analysis of quantitative and qualitative data will be undertaken during one phase of the study but separately.

Cross-sectional survey design was helpful to collect quantitative data from participants. A cross-sectional survey design is a research method that allows researchers to collect data from a sample of participants at a specific point in time (Perlindungan, 2018). With this design, the researcher can gather information about different characteristics or variables of the participants

simultaneously. The data collected can provide a cross-section of the population under study, allowing researchers to examine relationships, patterns, or differences among variables of interest. Cross-sectional surveys are often used because they are efficient in terms of time and resources since the data are collected only once (Kothari, 2019).

3.3 Location of the Study

The current study was conducted in private primary schools in Embu West Sub-County, Kenya. The sub-county borders Kirinyaga County to the west, Kitui County to the east, Machakos County to the south, Murang'a County to the south-west, Tharaka Nithi County to the north, and Meru to the north-west. In terms of schools, Embu West Sub-County has a number of educational institutions, including primary schools, secondary schools, and some tertiary institutions such as Embu University College.

In Embu West Sub-County, there have been complaints from stakeholders in private primary schools concerning the ineffectiveness of learners' acquisition of the core competencies enshrined in the CBC, and in particular, creativity and imagination skills (Margaret, 2022; Muchiri & Rosana, 2022). This has raised questions regarding how teachers' pedagogical approaches influence learners' acquisition of creativity and imagination skills in the implementation of competence-based curriculum in private primary schools in the area.

3.4 Target Population

According to Creswell and Creswell (2018), a target population refers to a group of individuals who share common characteristics within their natural setting. The present study targeted a total of 18 private primary schools, 18 head teachers, one QASO and 412 teachers from Embu West Sub-County. The inclusion of head teachers in the study is based on their administrative roles and their responsibilities for overseeing the performance of both teachers

and students within the schools. The involvement of QASO is essential, as they represent the government and provide supervision to ensure the effectiveness of head teachers and teachers in implementing the Competency-Based Curriculum (CBC). Their insights thus significantly contributed to the study. Teachers are integral to the research due to their pivotal role in implementing CBC through instructional practices. Their perspectives were paramount for the study's outcomes.

The study included teachers and head teachers in private primary schools in Embu West Sub County. It also included the Quality Assurance and Standards Officer (QASO) of Embu West Sub County. However, the study excluded head teachers, teachers, or the Quality Assurance and Standards Officer who were not willing to participate in the study. Individuals with illnesses that may hinder their ability to participate in the study were also excluded from participating in the study.

3.5. Description of Sample and Sampling Procedures

Sampling is the process of selecting a small number of elements from a larger, defined target group of elements such that the information gathered from the small group will allow judgments to be made about the larger groups (Hansana, 2021). The current study employed both probability and non-probability sampling techniques for quantitative and qualitative approaches.

3.5.1 Sampling of Schools

Embu West Sub-County targeted 18 private primary schools (Embu West Sub-County Report, 2023). The study used probability sampling, specifically simple random sampling, to select the schools that were included in the study. The researcher got a list of private schools from the Teachers Service Commission’s office in Embu West Sub-County. The researcher used score cards with the numbers 1 up to 18 to do simple random sampling. The score cards were

placed in a container where they were selected at random until the number of 16 schools were reached. This was 89% of the sample size, which was considered appropriate following the argument of Selvam (2017) that 10% of the participants is sufficient for the study.

3.5.2 Sampling of Head Teachers

The study used non-probability sampling, specifically criterion-purposive sampling, to include all 16 head teachers from the selected 16 private primary schools. Criterion purposive sampling was employed to select head teachers based on the rationale that it is suitable for choosing cases that provide comprehensive information relevant to the study (Kombo & Tromp, 2018). The head teachers were included in the study because they are the administrators who run the schools on a day-to-day basis. Their administrative roles and responsibilities allow them to oversee the performance of teachers as well as the academic performance of students within the schools. Thus, they were be able to provide valuable information for the study.

3.5.3 Sampling of Teachers

In the selection of the teachers from the sampled schools, the researcher ensured that the number of teachers taken from each selected school is in proportion to the total population of teachers in that school. To achieve this, the researcher used proportionate sampling with the help of the formula developed by Yamane (1967) to calculate the sample size of the teachers. After this, the total number of teachers in each category per school was multiplied by 10% to get the sample size of teachers per school.

$n = N \div (1 + Ne^2)$

Whereby:

n= the sample size

N= the size of the population (412)

e= margin of error (0.05)

The sample size of 203 teachers was selected from the 16 private primary schools. In each of the schools, the researcher obtained a list of the teachers which was used for simple random sampling to select teacher participants. Scorecards with the numbers 1 and 2 was used. The cards were placed in a container and the researcher picked at random. The score cards that with label 1 represented teachers who took part in the study part in the study.

3.5.4 Sampling of the Quality Assurance and Standards Officer

Through expert-purposive sampling, the study included the QASO as a participant. The incorporation of the Quality Assurance and Standard Officer is crucial, as they are in charge of supervising and ensuring effective implementation of the curriculum. This role encompasses a variety of responsibilities aimed at enhancing the overall quality of education, improving teaching and learning processes, and ensuring schools adhere to established curriculum standards. Consequently, their engagement significantly contributes essential information to the study.

Table 1

Target Population, Sample Size and Sampling Technique

Category	Target Population	Sample size	Sampling Technique	Percentage (%)
Head teachers	16	16	Criterion purposive Sampling	100
Teachers	412	203	Proportionate and Simple Random sampling	49
QASO	1	1	Expert purposive Sampling	100
Total	429	220		51

3.6 Description of Research Instruments

Data collection instruments are tools used in research to collect various types of data, which are then processed and organized systematically (Creswell, 2018). In the current study, data collection instruments included questionnaires and in-depth interview guides. The questionnaires were used to collect quantitative data from teachers, while in-depth interview guides were used to collect qualitative data from head teachers and the QASO.

3.6.1 Questionnaire for Teachers

Satya (2022) stated that questionnaires are a valuable method of collecting a wide range of information from a large number of individuals, often referred to as respondents. In the current study questionnaires were used to collect quantitative data from teachers. The questionnaire used both closed-ended and open-ended questions. It has five sections, ranging from A to E. Section A required demographic information about the teachers concerning their gender, age, educational level, and work experience. Section B sought information regarding the extent to which teachers' application of problem-solving teaching approaches influences learners' acquisition of creativity and imagination skills in the implementation of CBC. Section C sought to establish information about how the teachers' application of an investigative teaching approach influences learners' acquisition of creativity and imagination skills in the implementation of CBC. Section D sought information regarding how teachers' use of group learning approaches to teaching influences learners' acquisition of creativity and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County.

3.6.2 In-depth Interview Guide for Head teachers

An in-depth interview guide was used to collect qualitative data by conducting face-to-face interviews with the head teachers. Interviews involved interactions between the interviewer

and the participants. A face-to-face interview is an individual interview, which is a conversation between the participant and interviewer (Neuman, 2012). The in-depth interview guide was divided into two sections. Section A sought information about the demographic information of the participants, which comprised of age, experience, and academic qualifications. Section B contained questions sought information regarding teachers' application of problem-solving teaching approaches and learners' acquisition of creativity and imagination skills; teachers' application of an investigative teaching approach and learners' acquisition of creativity and imagination skills; teachers' use of group learning approaches to teaching and learners' acquisition of creativity and imagination skills.

3.6.3 In-depth Interview Guide for Quality Assurance and Standards Officer

An in-depth interview guide was used to collect qualitative data from the QASO. The in-depth interview guide was divided into two sections. Section A sought information about the demographic information of the participants, which comprised of age, experience, and academic qualifications. Section B contained questions sought information regarding teachers' application of problem-solving teaching approaches and learners' acquisition of creativity and imagination skills; teachers' application of an investigative teaching approach and learners' acquisition of creativity and imagination skills; teachers' use of group learning approaches to teaching and learners' acquisition of creativity and imagination skills.

3.6.4 Validity of Qualitative Instruments

The validity of a questionnaire refers to its ability to measure what is expected to be measured and achieve the researcher's goals (Kothari & Garg, 2014). Content validity was used in validating instruments for the study. To ascertain the validity of the instruments, the researcher sought the views of experts in research from Tangaza University College, who reviewed the

questionnaire items to ensure that they measure all aspects of the study questions. The feedback from the experts was used to improve the final draft of the questionnaire.

3.6.5 Pilot Testing of Quantitative Instruments

Creswell and Creswell (2018) describe pilot testing as the process of conducting a preliminary survey to determine the challenges that respondents will likely face when responding to the items. The main aim is to rectify ambiguities, such as vague questions, so that respondents will not have difficulties answering the sample questions. The researcher selected two schools for the pilot study, which was not included in the actual study sample. The schools selected for pilot testing have the same characteristics as the schools that participated in the actual study. The researcher further selected four head teachers and 11 teachers to be involved in the pilot exercise. The pilot study helped to find out any adjustments that were needed to the instruments.

3.6.6 Reliability of Quantitative Instruments

According to Mugenda and Mugenda (2013), reliability is the extent to which the instrument yields the same results over multiple trials. The current study used Cronbach alpha for internal consistency and reliability. Cronbach alpha was used because it measures reliability from a single administration of the research instrument. According to Taber (2017), Cronbach's alpha reliability coefficient normally ranges between 0 and 1. The value of 0.6–0.7 shows an acceptable level of reliability, while 0.8 or greater indicates a very good level. Cronbach alpha was used because it is an appropriate technique for measuring reliability for survey research that has more than two options, such as a Likert scale and open-ended questions (Kothari, 2014). The current study realized a reliability coefficient of 0.813 which was considered sufficient.

3.6.7 Credibility and Dependability of the Qualitative Instruments

According to Creswell (2014), credibility ensures that the study accurately reflects the experiences of the individuals under investigation and that the obtained results can be deemed trustworthy. Olaussen and Bowles (2022) defined dependability as the establishment of reliability, achieved when the research study's findings are consistent and replicable. This study employed triangulation and member checking to bolster the credibility of qualitative data. Through triangulation, the research draws upon multiple sources of information to enhance the validity and credibility of the gathered data. Additionally, member checking utilized was involving interviewed participants: head teachers and the Quality Assurance and Standard Officer, who had the opportunity to provide final input regarding the accuracy and specifics of the collected data.

3.7 Description of Data Collection Procedure

Once approved by the university's college supervisors, the researcher initiated the process by obtaining an introductory letter from the Directorate of Postgraduate Studies and Research at Tangaza University College. This letter, in conjunction with the signed research proposal, served as the foundation for applying for a research permit from the National Commission for Science, Technology, and Innovation (NACOSTI). Upon successful acquisition of the research permit, the researcher proceeded to seek authorization from County Director of Education to conduct data collection activities within selected private primary schools in Embu West Sub-County. This authorization was followed by requests for permission from the respective head teachers. The researcher visited the selected schools to carry out the administration of questionnaires as well as interviews with the head teachers and the QASO. During these interactions, the researcher transparently communicated the study's objectives to the participants, elaborating on the purpose

and significance of their involvement. Participants were requested to provide their informed consent by signing consent forms, signifying their voluntary willingness to engage in the research. The research process involved the distribution of questionnaires among teachers for the purpose of gathering quantitative data. Qualitative data was gathered from head teachers and the QASO through the utilization of an interview guide. This comprehensive approach facilitated a well-rounded exploration of the research topic, encompassing both quantitative and qualitative dimensions.

3.8 Description of Data Analysis Procedures

Kothari (2019) emphasized the necessity of proper data preparation, conversion, and analysis to ensure the reliability of results. The responses from the questionnaires were systematically coded to facilitate categorization and streamlined recording. After data has been collected, the researcher, in the process of coding used SPSS version 26 which involved several steps. Initially, the data was reviewed to ensure it meets the requirements for analysis, such as completeness and accuracy. Then, variables were identified and labeled according to the research questions. Numeric values were assigned to categorical variables, facilitating statistical analysis. Once variables were defined and coded, the data was manually entered into SPSS. Finally, data cleaning procedures was applied to detect and correct errors or inconsistencies, ensuring the integrity and reliability of the dataset for subsequent analysis. This analysis encompassed generating descriptive statistics such as frequencies and percentages, which was presented in the form of frequency tables and percentages. Conversely, data obtained from interviews was taken through a thematic analysis, with findings documented in both narrative form and as direct quotations. The researcher independently analyzed both quantitative and qualitative data.

Subsequently, the outcome of these distinct analyses was integrated to ascertain concurrence or divergence in the results.

To understand demographic profiles descriptive statistics such as percentages and frequencies was used. The three objectives focus on examining the influence of different teaching approaches (problem-solving, investigative, group learning) on learners' acquisition of creativity and imagination skills. These teaching approaches were measured on a single scale that is Likert scale where respondents rate the extent to which they agree or disagree with statements regarding the application of the teaching approaches. Additionally, the outcome variable, learners' acquisition of creativity and imagination skills was also measured on a single scale. This involved assessing students' performance in terms of acquisition of the competency of creativity and imagination skills.

3.9 Ethical Considerations

Creswell (2014) stressed that the researcher should adhere to the code of ethics when conducting the study. Before the collection of data, the researcher presented a signed copy of the research proposal to the Department of Postgraduate Studies at Tangaza University College in order to obtain a clearance letter. The clearance letter was then used together with the duly signed proposal to secure a research permit from NACOSTI. To get access to private primary schools, the researcher sought permission from the County Director of Education and the head teachers of the schools. The researcher requested the informed consent of the participants and explain to them the purpose of the study. The study ensured that participation was voluntary by requesting that the participants freely sign the consent forms before proceeding.

The study respondents were assured that their responses remained anonymous and confidential as they were not required to write their names on the questionnaires given to them to

fill. The researcher assured the participants of their safety by avoiding situations that could cause physical or psychological harm to participants (Kombo & Tromp, 2013). The researcher upheld integrity and avoided plagiarism by citing the sources of information using the APA 7th edition format. The researcher further ensured that during data analysis and reporting, the findings were reported exactly as they appear to avoid data falsification and fabrication.

CHAPTER FOUR

PRESENTATION, INTERPRETATION AND DISCUSSION OF THE FINDINGS

4.1 Introduction

This chapter presents data analysis, interpretation and discussion of the study findings. The chapter is divided into sections, including the instrument return rate, demographic data, and the presentation, interpretation and discussion of the findings, which are done based on the objectives of the study. The findings are presented in form of tables, pie charts, and graphs.

4.2 Instrument Response Rate

The researcher distributed research instruments to different study participants; questionnaires were distributed to teachers, which helped in the collection of quantitative data. Interview guides were used to collect qualitative data from the Quality Assurance and Standards Officer and sampled head teachers of the schools that were selected for the study. Table 2 shows the response rate of the study participants.

Table 2

The Response Rate of the Study Instruments

Participants	Sampled Participants	Actual Participants	Response Rate (%)
Teachers	203	198	98
Head teachers	16	15	94
Quality Assurance and Standards Officer	1	1	100

Source: ***Field Data***

Table 2 shows that the researcher distributed 203 questionnaires to the teachers in private primary schools in Embu West Sub-county, Kenya. Out of the 203 questionnaires distributed,

198 were successfully filled out and returned, representing a response rate of 98%. Additionally, 15 out of 16 head teachers were available for interviews, resulting in a 94% response rate. Furthermore, the Quality Assurance and Standards Officer was available for interviews, achieving a 100% response rate.

However, as shown in Table 2, there were some gaps in the response rate of both the teachers and head teachers. The five teachers who did not return their questionnaires reported having misplaced them, while the head teacher who did not participate in the study reported having a tight schedule that week and unavailable for interviews. Mugenda and Mugenda (2013) argue that a response rate of 50% is adequate for data analysis and reporting, a rate of 60% is good, and a response rate of 70% or more is excellent. Thus, following the recommendation of Mugenda and Mugenda (2013), the response rates of 98% for teachers, 94% for head teachers, and 100% for the QASO were excellent for data analysis and reporting.

4.3 Demographic Information of the Participants

The study sought to establish participants' personal characteristics, including age, gender, years of experience in the service, and levels of professional qualification. The researcher did this to find out how the personal characteristics of the participants are related to the influence of teachers' pedagogical approaches on learners' acquisition of creativity and imagination in implementation of competency based curriculum in private primary schools in Embu west sub-county, Kenya.

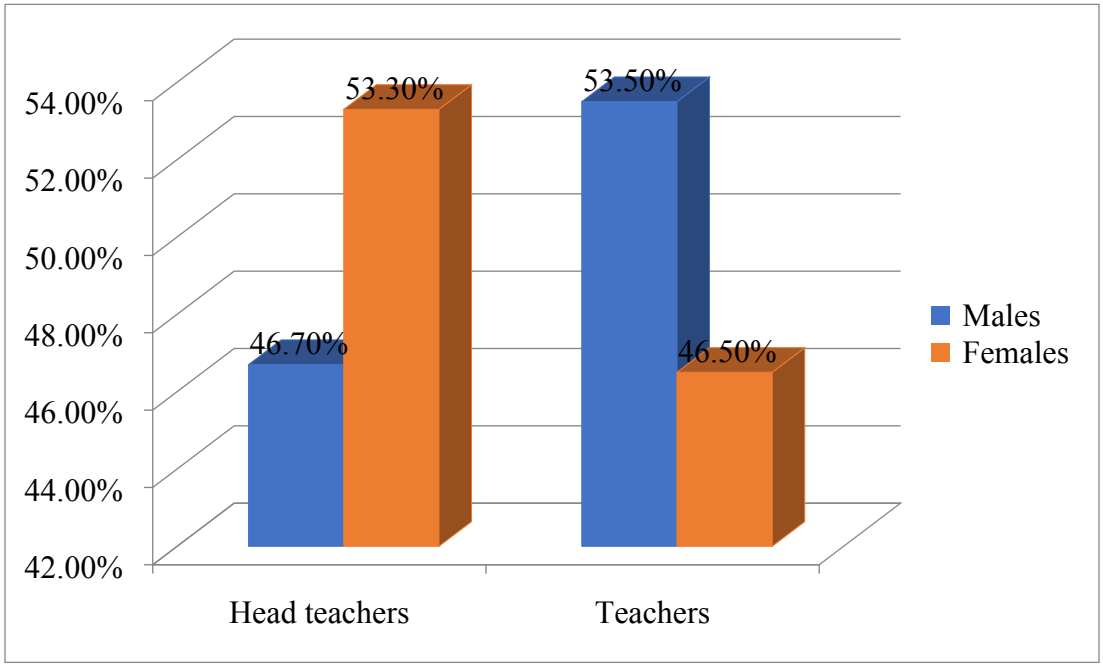
4.3.1 Distribution of Study Participants by Gender

The researcher sought to establish the gender of the participants to determine whether there was a difference between male and female participation in rating how teachers' pedagogical approaches influence learners' acquisition of creativity and imagination in

implementation of competency based curriculum in private primary schools. The findings are shown in Figure 2.

Figure 2

Distribution of Gender of the Head Teachers and Teachers



Source: ***Field data, 2024***

Figure 2 shows that 53.30% of the head teachers were females and 46.70% were males. The study further found out that male teachers were found to be more than female teachers, at 53.50% and 46.50%, respectively. The study further found out that female head teachers (53.30%) were slight more than male head teachers (46.70%). Thus, though both genders are represented, leadership roles exhibit gender inequality and the broader teaching staff shows a small male predominance.

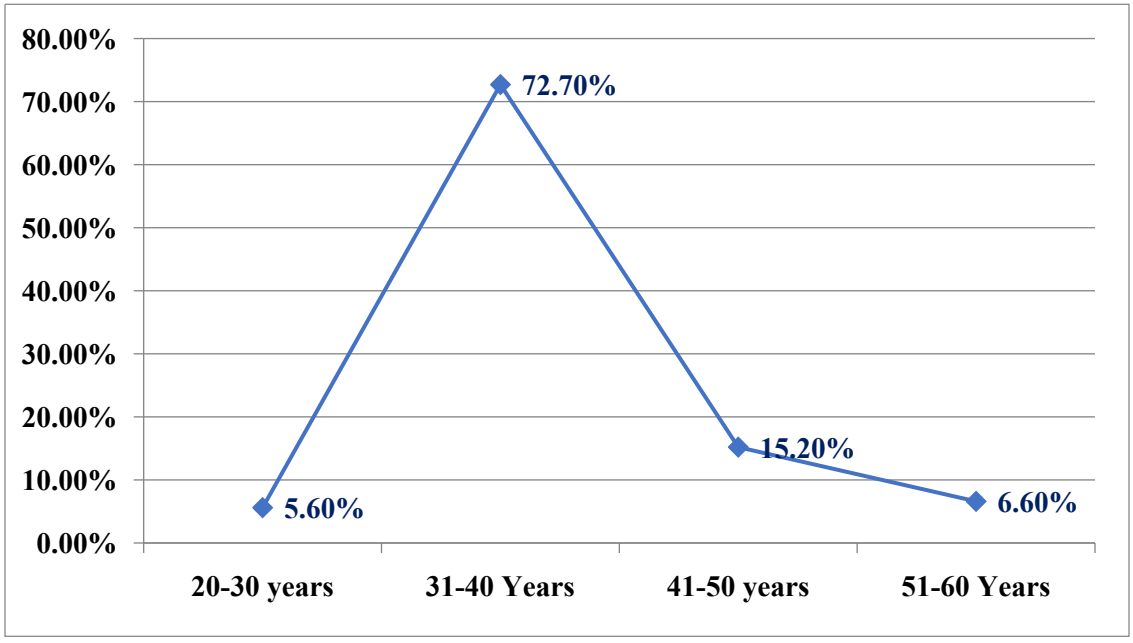
As Weizhong (2023) noted, it is crucial for schools to prioritize gender balance, as diverse genders bring unique insights, approaches, and ways of addressing various educational challenges. Having a balanced gender representation among teachers is important because it

ensures a diverse range of perspectives and teaching styles that can influence the development of creativity and imagination in learners. Gender-balanced participation can provide a more comprehensive understanding of how different pedagogical approaches impact learners, as male and female teachers may employ varied strategies and interact differently with learners. This diversity can help identify best practices that are inclusive and effective for all learners, thereby enhancing the overall implementation of the competency-based curriculum. Further, it can help in recognizing and addressing any gender-specific challenges or biases in teaching methods, leading to a more equitable educational environment.

4.3.2 Distribution of the Teachers by Age

The study sought to find out the age range of the teachers. This was done in order to establish whether age had a bearing on how teachers' pedagogical approaches influence learners' acquisition of creativity and imagination in implementation of competency based curriculum in private primary schools. The study findings are presented in Figure 3. **Figure 3**

Distribution of the Teacher by Age



Source: ***Field data, 2024***

The results in Figure 3 show that the majority of the teachers (72.70%) were in the age bracket between 31–40 years of age. This is an indication that most of the teachers in private primary schools in the Embu West sub-county are young. The fact that most teachers are young could impact their pedagogical approaches to fostering creativity and imagination in learners within the competency-based curriculum (CBC) framework. Marleen (2023) argued that in the teaching profession, young teachers often bring fresh perspectives, enthusiasm, and a greater familiarity with contemporary educational theories and technologies. In the context of CBC implementation, these factors are crucial in developing creativity and imagination among the learners. Their relatively recent training may have included more modern, student-centered teaching methods that emphasize active learning, critical thinking, and the integration of digital tools, all of which are essential for nurturing creativity and imagination. Younger teachers might also be more open to adopting and experimenting with new instructional strategies that align with the dynamic and holistic nature of the CBC. Consequently, these teachers effectively engage students and enhance their creative skills in private primary schools.

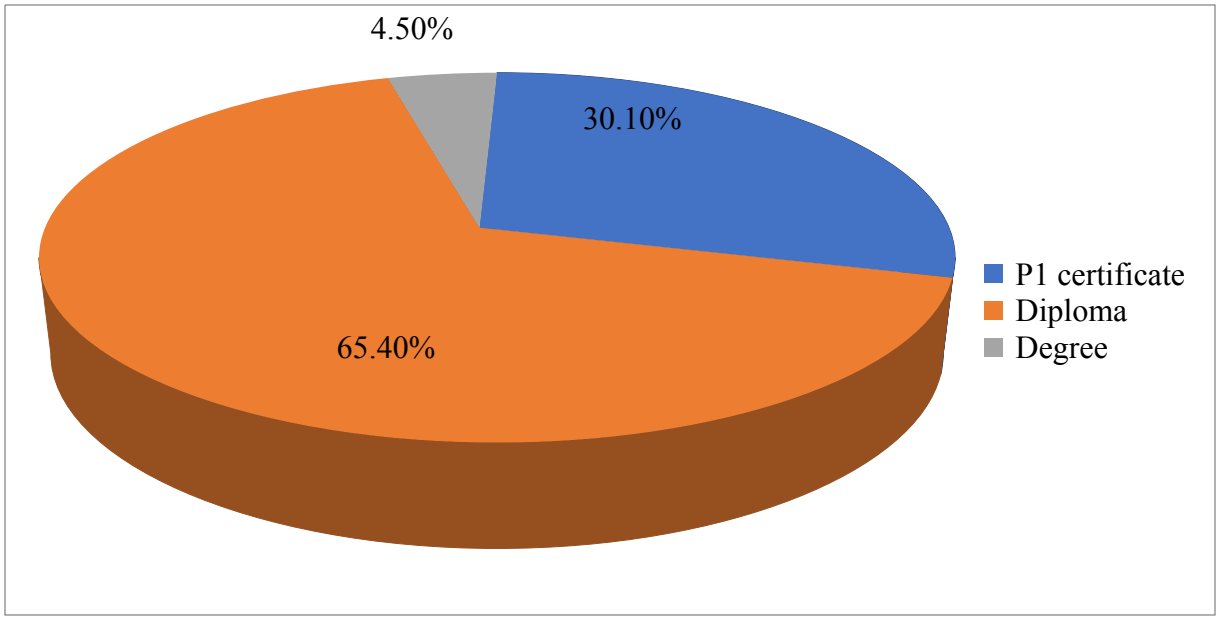
4.3.3 Distribution of Teachers according to Academic Qualifications

The researcher sought to find out the distribution of teachers according to academic qualifications to understand whether educational backgrounds influence pedagogical approaches in fostering creativity and imagination within the competency-based curriculum (CBC). The researcher hopes that academic qualifications can reflect the depth of subject-matter knowledge, familiarity with contemporary educational theories, and exposure to various teaching methodologies. By analyzing this distribution, the researcher hoped to assess whether higher

qualifications correlate with more effective or innovative teaching practices. Figure 4 presents the results.

Figure 4

Distribution of Teachers according to Academic Qualification



Source: ***Field data, 2024***

As shown in Figure 4, the majority of the teachers (65.40%) had diploma qualifications. It was further revealed that 30.10% of the teachers had P1 certificate qualifications. It was noted a small number of teachers had bachelor's degree qualifications. Considering these qualifications, it is clear that most of the teachers were qualified to teach in primary schools based on the fact that the Teacher Service Commission (TSC) in Kenya requires a minimum of a certificate in Primary Teacher Education (P1 certificate) from the Kenya National Examinations Council (KNEC) in order to qualify to teach in a primary school in Kenya (TSC, 2020). Teachers with a P1 certificate can bring a significant advantage to the implementation of the Competency-Based Curriculum (CBC) in primary schools. One key advantage is their ability to effectively

design and deliver differentiated instruction. With their advanced progression in the profession to acquire diplomas and degrees, P1-certified teachers are better equipped to tailor their teaching strategies to meet the diverse needs of students. This skill is crucial in CBC, which emphasizes personalized learning and the development of individual competencies. These teachers can create more engaging and supportive learning environments, adapting lessons to accommodate various learning styles and levels, thereby enhancing student outcomes and ensuring that all students have the opportunity to succeed within the CBC framework.

4.3.4 Distribution of Head teachers and Teachers according to Experience in service

The researcher sought to determine the head teachers' and teachers' years of experience. This was to help find out whether they had acquired more knowledge and skills over the period of their service, which could have helped them, apply various techniques in the implantation of CBC to help learners develop creativity and imagination. Table 3 shows the summary of the findings.

Table 3

Distribution of Head teachers and Teachers according to Experience in service

	Head teachers(n=15)		**Teachers(n=198)**	
	Frequencies	**Percentages**	**Frequencies**	**Percentages**
Less than 5 years	4	26.66	11	5.56
5-10 years	8	53.33	141	71.21
11-15	3	20.00	34	17.17
16 and above years	00	0.00	12	6.06

Source: ***Field data, 2024***

Table 3 shows that teachers and head teachers have varied experiences and are in different career growth stages. It indicates that the majority of the teachers (71.21%) have

experience ranging between 5-10years. Teachers with varying levels of experience bring different perspectives to the classroom (Marleen, 2023). Newer teachers may have fresh ideas and innovative approaches to teaching, while experienced teachers may have developed a deep understanding of instructional strategies. This diversity of perspectives can lead to a richer educational experience for learners and help the teachers develop creativity and imagination as one of the core competencies enshrined in CBC.

Table 3 also shows that slightly more than half of the head teachers (53.33%) had experience between 5-10 years. This could mean that most of the head teachers had sufficient experience to manage the teachers well in their primary schools. Alireza (2024) argued that head teachers with substantial experience tend to have had time and opportunity to develop and refine their leadership skills over time. Experienced head teachers are also likely to be well-versed in educational policies, practices, and curriculum frameworks such as CBC. They have had the opportunity to stay updated with changes in the education sector, implement new initiatives, and adapt to evolving educational trends, which enables them to help teachers in teaching to develop competencies including Creativity and imagination.

4.4 Problem-solving Approach and Learners' Acquisition of Creativity and Imagination Skills

The first objective of this study was to find out how a problem-solving approach to teaching influences learners' acquisition of creativity and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County. The teachers were requested to choose the response that best represented their opinions on a five-point scale. The rating scale as presented in Table 4 was: Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D), and Strongly Disagree (SD). The findings are presented in the Table.

Table 4

Problem-solving Approach and Learners' Acquisition of Creativity and Imagination Skills

Statement	SA		A		UD		D		SD	
	f	%	f	%	f	%	f	%	f	%
In my school, teachers present learners with problems to discuss and solve in the implementation of CBC.	1	0.5	11	5.6	6	3.0	155	78.3	25	12.6
The teacher in my school guides learners on how to discuss solutions to problems	173	87.4	6	3.0	11	5.6	5	2.5	3	1.5
Teachers in our school assign learners independent questions to discuss and present	177	89.4	6	3.0	10	5.1	4	2.0	1	0.5
Teachers in our school encourage learners' simulation of real-life scenarios, which help them see issues from multiple perspectives.	178	89.9	9	4.5	9	4.5	1	0.5	1	0.5
Teachers in our school engage learners in problem-solving activities that enhance creativity and imagination	1	0.5	8	4.0	154	77.8	0	0	35	17.7

Source*: Field data, 2024*

The findings as presented in Table 4 show that majority of the teachers (78.3%) disagreed that in their schools, teachers present learners with problems to discuss and solve in the implementation of CBC. Only 0.5% of the teachers agreed with the statement. In an interview, one of the head teachers commented:

> As a head teacher, I understand that problem-solving is a critical aspect of implementing the CBC. I do my best to encourage teachers to present learners with problems to discuss

and solve as a way of developing their problem-solving skills. However, this has been a challenge since most teachers tend to use the lecture method (Head teacher A,19/6/2024).

These findings are in line with what was revealed by QASO that:

In the implementation of CBC, I would expect our teachers to use real-world scenarios to challenge learners to apply theoretical knowledge to practical problems. This approach helps foster analytical skills and decision-making abilities, creating dynamic, interactive learning environments that promote active participation, critical thinking, and the development of creative solutions. However, this does not seem to be the case, which has required us to hold more workshops to enlighten our teachers on new ways of teaching that align with CBC implementation (QASO, 21/06/2024).

These findings could reveal a challenge in teaching because when teachers fail to present learners with problems to discuss and solve, it significantly hinders the acquisition of creativity and imagination. Problem-solving activities stimulate critical thinking and encourage learners to explore diverse perspectives and innovative solutions. Without these opportunities, students miss out on the chance to experiment, make mistakes, and learn from them, which are essential components of creative development. This lack of engagement stifles their ability to think outside the box, limits their imagination, and reduces their capacity to generate original ideas. Consequently, the curriculum becomes a passive experience, focusing on rote memorization rather than fostering an environment where creativity can flourish.

In line with the above findings, a study by Qianqian (2022) revealed that the use of problem-solving techniques is very crucial for the academic achievement of learners. The author contended that learners with different learning abilities can all achieve academically when

learning is centered on the sharing of ideas to solve problems. When collaboration, critical thinking, and practical application of knowledge are encouraged, all learners can benefit.

Regarding whether teachers guide learners on how to discuss solutions to problems in CBC implementation, most of the teachers (87.4%) were in agreement with the statement. The number of teachers who strongly disagreed with this statement was 1.5%. This response from teachers seems to suggest that teachers in private primary schools in Embu West are making efforts to guide learners on how to discuss solutions to problems. When learners are guided on how to discuss solutions to problems in CBC implementation, it significantly enhances their creativity and imagination. By engaging in problem-solving discussions, students are encouraged to think critically and explore various perspectives, which stimulate creative thinking. They learn to brainstorm, articulate their ideas, and collaborate with peers, fostering an environment where imaginative solutions can flourish. This process allows them to experiment with innovative approaches, adapt their thinking, and learn from both successes and failures. As a result, their ability to generate original ideas and envision new possibilities is greatly strengthened, making them more adept at creative and imaginative thinking.

The study findings further revealed that majority of the teachers (89.4) strongly agreed that teachers in their schools assign learners independent questions to consider, followed by presentations of their ideas to the class. The study findings also revealed that 5.1% of the teachers were undecided on whether teachers in their schools assign learners independent questions to discuss.

It should be noted that learners gain significantly from presenting their ideas regarding a questions in class, as it enhances their communication skills, confidence, and understanding of the subject matter. Presenting ideas requires them to organize their thoughts, clarify their

understanding, and articulate their knowledge effectively reading a problem. This process reinforces their learning and helps them retain information better. Additionally, receiving feedback from peers and teachers provides valuable insights and different perspectives, fostering a deeper comprehension of the problem at hand. Presentations also encourage active participation, critical thinking, and the ability to defend and refine their ideas, all of which are essential skills for enhancing creativity and imagination.

Yasemin (2022) argued that when learners are presented with questions to discuss, their creativity and imagination are significantly stimulated. Engaging in discussions prompts them to think deeply, consider multiple viewpoints, and explore various possibilities. This process encourages them to move beyond surface-level thinking and delve into more innovative and original ideas. As they articulate their thoughts and listen to others, they refine their understanding and generate new concepts, enhancing their imaginative capabilities. The collaborative nature of discussions also fosters a sense of curiosity and open-mindedness, allowing learners to build on each other's ideas and develop creative solutions to problems.

Regarding whether teachers in their schools encourage learners' simulation of real-life scenarios, the majority of the teachers (88.9%) were in agreement with the idea. A small number of teachers (0.5%) did not agree with the statement. These findings seem to point to the possibility that teachers in Embu West private primary schools are informed about the beneficial effect of simulation on the advancement of the problem-solving abilities of learners. Learners' simulation of real-life scenarios significantly enhances their problem-solving skills by providing practical, hands-on experiences that mirror actual challenges they may face. This method allows students to apply theoretical knowledge in a context that requires critical thinking, adaptability, and decision-making. As they navigate these scenarios, they learn to analyze situations, identify

problems, brainstorm potential solutions, and implement their ideas effectively. The immersive nature of simulations helps learners understand the complexities of real-world problems, encouraging them to think creatively and collaboratively. Additionally, it fosters resilience and the ability to learn from mistakes, as students can experiment with different approaches and witness the consequences of their decisions in a controlled environment.

The study findings further revealed that most of the teachers (77.8%) were undecided on whether teachers in their schools engage learners in problem-solving activities that enhance creativity and imagination in the implementation of CBC. These findings indicate a potential gap in understanding or confidence in applying these educational strategies. This uncertainty suggests that while teachers may recognize the value of problem-solving for developing essential skills, there might be a lack of clarity on how to effectively integrate these activities into their teaching practices. The findings suggest that there is need to understand and apply problem solving in their teaching approaches because, as argued by Ahmed (2020), problem-solving activities enhance learners' creativity by providing opportunities to think critically and explore multiple solutions to a given challenge. These activities encourage students to break free from conventional thinking patterns, experiment with new ideas, and take intellectual risks. As they work through problems, learners must synthesize information, draw connections, and apply knowledge in novel ways, which stimulates innovative thinking.

4.5 The Investigative Teaching Approach and Learners' Acquisition of Creativity and Imagination Skills

The second Objective of this study was to find out how the investigative teaching approach influences learners' acquisition of creativity and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County. The teachers

were requested to choose the response that best represented their opinions on a five-point scale. The rating scale as presented in Table 5 was: Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D), and Strongly Disagree (SD). The findings are presented in the Table 5.

Table5

The Investigative Teaching Approach and Learners' Acquisition of Creativity and Imagination Skills

Statement	SA		A		UD		D		SD	
	f	%	f	%	f	%	f	%	f	%
In our school, teachers guide learners to conduct experiments that develop their creativity and imagination.	19	9.6	6	3.0	5	2.5	151	76.3	17	8.6
Teachers encourage learners to discuss problems to deepen their understanding.	171	86.4	4	2.0	14	7.1	8	4.0	1	0.5
Teachers encourage learners to ask questions that help identify problems and find appropriate solutions as they implement CBC.	16	8.1	12	6.1	13	6.6	30	15.2	127	64.1
Teachers involve learners in problem solving through discovering the world around them.	6	3.0	9	4.5	172	86.9	1	0.5	10	5.1
Teachers encourage learners to analyze situations and form their own conclusions in the process of implementing CBC.	10	5.1	13	6.6	1	0.5	153	77.3	21	10.6

Source: ***Field data, 2024***

Table 5 shows that most of the teachers (76.3%) disagreed that in their schools, teachers guide learners to conduct experiments that develop their creativity and imagination. In line with these findings, one of the head teachers commented:

> I encourage teachers to conduct experiments for the benefit of learners during the teaching and learning process. However, this has been a challenge due to limited materials needed to conduct experiments. As a result, teachers have to improvise with the limited resources that are available for learners to learn (Head teacher B, 17/06/2024).

These findings suggest that there are limited resources available for hands-on activities, which requires teachers to make the most of what is available. It should be noted that without regular opportunities to engage in hands-on experiments, learners miss out on crucial experiences that foster curiosity, exploration, and innovative thinking. As argued by Yesenin (2022), experiments encourage students to hypothesize, test, observe, and draw conclusions, which are essential processes for cultivating creativity and imagination. The lack of such activities can lead to a more passive learning environment where rote memorization is prioritized over active, experiential learning. Consequently, students may struggle to develop the critical problem-solving skills and creative thinking abilities necessary for success in both academic and real-world contexts.

The study further revealed that most of the teachers were of the view that **t**eachers (86.4%) encourage learners to discuss problems to deepen their understanding. This finding was further enhanced by the comments of the curriculum support officer who mentioned that:

> When I meet with teachers, I encourage them to embrace discussions in their classrooms. I know that when discussions are encouraged among learners, several key competencies are developed, among them critical thinking and analytical skills. This is fostered as

discussions require them to evaluate different viewpoints, form arguments, and provide evidence-based reasoning. Collaboration and teamwork are strengthened, as learners must work together, respect diverse perspectives, and build on each other's contributions (QASO, 17/06/2024).

In line with the above findings, Vaughan (2022) argued that teachers must develop teaching approaches that guide learners to construct, evaluate, and refine multimodal representations in a four-stage teaching model. The study revealed that an investigative approach can enhance learning when learners are encouraged to actively explore concepts, solve problems, and discover patterns and relationships on their own rather than simply memorizing formulas and procedures.

It was further noted from the findings of the study that most teachers (64.1%) encourage learners to ask questions that help identify problems and find appropriate solutions as they implement CBC. These finding show that teachers in Embu West Sub County are aware that when they encourage learners to ask questions that help identify problems and find appropriate solutions, it significantly enhances their creativity. By fostering a questioning mindset, students learn to critically analyze situations, consider various perspectives, and explore innovative ways to address challenges. This process not only stimulates curiosity but also encourage them to think outside conventional boundaries and envision new possibilities. Engaging in problem identification and solution-seeking through questioning promotes active learning and empowers students to take ownership of their learning journey. It nurtures their ability to generate original ideas, adapt strategies, and experiment with different approaches, thereby fostering a mindset that values creativity and innovation in both academic and real-world contexts.

The study further revealed that most of the teachers (86.9%) were undecided about whether they involve learners in problem-solving by exploring the world around them. This finding aligns with a comment from one of the head teachers, who said, "Teachers sometimes face challenges in helping learners develop problem-solving skills, which has required us as administrators to assist them." This indicates that some teachers are not fully aware of how to effectively involve learners in problem-solving. Regarding whether teachers encourage learners to analyze situations and form their own conclusions in the process of implementing CBC, most of the teachers (77.3) disagreed with the statement. This finding aligns with the argument of one of the head teachers who asserted:

> In my school, I try to encourage teachers to be aware of the competencies enshrined in CBC and to develop them among learners. I do this because I have realized that many learners need these competencies developed, and this has been challenging because some teachers still rely on traditional teaching methods that we are trying to move away from (Head teachers C, 18/06/2024).

4.6 Group Learning Approach to Teaching and Learners' Acquisition of Creativity and Imagination Skills

The third question of this study was to assess how a group learning approach to teaching influences learners' acquisition of creativity and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County. The teachers were requested to choose the response that best represented their opinions on a five-point scale. The rating scale as presented in Table 6 was: Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D), and Strongly Disagree (SD). The findings are presented in the Table 6.

Table 6

Group Learning Approach to Teaching and Learners' Acquisition of Creativity and Imagination Skills

Statement	SA		A		UD		D		SD	
	f	%	f	%	f	%	F	%	F	%
Teachers in our school encourage learners to collaborate with peers in solving problems.	46	23.2	133	67.2	1	0.5	7	3.5	11	5.6
Teachers in our school encourage learners to work together both in and outside the classroom.	50	25.3	129	65.2	1	0.5	7	3.5	11	5.6
Teachers consider diversity in terms of abilities when forming groups.	1	0.5	13	6.6	113	57.1	58	29.3	13	6.6
Teachers in my school encourage active listening and equal participation to enhance creativity and imagination among learners.	34	17.2	139	70.2	3	1.5	9	4.5	13	6.6
The teacher poses open-ended questions to the groups that require thoughtful responses, which enhances creativity.	140	70.7	29	14.6	4	2.0	6	3.0	19	9.6

Source: ***Field data, 2024***

Table 6 shows that most teachers (67.2%) encourage learners to collaborate with peers in solving problems. Only 3.5% of the teachers disagreed with the statement. These findings could point to a possibility that teachers in Embu West Sub County are informed when teachers encourage learners to collaborate with peers in solving problems, it significantly enhances leaners creativity. Collaborative problem-solving fosters an environment where students can

share diverse ideas, challenge the thinking of each and build upon each other's suggestions. This exchange of perspectives encourages learners to think more broadly and consider innovative solutions they might not have conceived independently. Working together also promotes brainstorming and the fusion of different viewpoints, leading to more creative and comprehensive solutions. As Mooly (2019) argued, collaboration develops communication and social skills, which are essential for creative thinking, as learners learn to articulate their ideas clearly and listen to others effectively.

Similarly, majority of the teachers (65.2%) were of the view that teachers in their schools encourage learners to work together both in and outside the classroom. When learners are encouraged to work together both in and outside the school, it enhances Peer collaboration in problem-solving which nurtures a dynamic and supportive learning environment that stimulates creative thinking and innovation. In an interview, one of the principals supported this idea by asserting that:

> Encouraging learners to work in groups is beneficial for their academic and personal development. Group work fosters essential skills such as teamwork, communication, and collaboration, as students learn to navigate different personalities and perspectives. Working in groups allows learners to pool their strengths, tackle complex problems more effectively, and generate creative solutions through collective brainstorming (principal D, 17/06/2024).

The study further found out that slightly more than halve of the teachers (57.1%) were undecided as to whether teachers consider diversity in terms of abilities when forming group discussions in their schools. this could highlight a significant gap in understanding or implementation of effective group dynamics. This uncertainty can adversely affect the creativity

of learners, as diverse groups bring a range of perspectives, strengths, and problem-solving approaches that enhance creative thinking. When groups are formed without considering the diversity of abilities, there is a risk of homogenizing the group, which can lead to limited viewpoints and reduced opportunities for innovative solutions. Ensuring diverse group composition encourages learners to collaborate with peers who have different skills and experiences, fostering an environment where creative ideas can flourish and learners can challenge and inspire one another.

Further, there was agreement from teachers (70.2%) that teachers in schools encourage active listening and equal participation to enhance creativity and imagination among learners. The decision of the teachers could be based on their understanding that encouraging listening and equal participation among learners is crucial for fostering an inclusive and dynamic learning environment. When learners actively listen to each other, they develop empathy, respect for diverse viewpoints, and better communication skills. Equal participation ensures that all voices are heard, promoting a sense of belonging and boosting the confidence of quieter or less assertive students. This inclusive approach enhances collaborative learning, as students build on the ideas of each other and contribute unique perspectives, leading to more innovative and comprehensive solutions. Additionally, it helps develop critical thinking and problem-solving skills, as learners must consider and evaluate different opinions.

As Keter and Ronoh (2016) asserts that promoting listening and equal participation cultivates a supportive classroom culture that values each student's contribution and maximizes the collective potential for creativity and learning.

The study further showered that most of the teachers (70.7%) strongly agreed that they poses open-ended questions to the groups that require thoughtful responses, which enhances creativity.

This response from teachers could be from their understanding that posing open-ended questions to groups of learners is important because it stimulates critical thinking, encourages deeper understanding, and promotes active engagement. Open-ended questions require thoughtful responses, prompting students to analyze, evaluate, and synthesize information rather than simply recalling facts. This type of questioning fosters a more interactive and dynamic learning environment, where learners are motivated to explore ideas, justify their reasoning, and consider multiple perspectives. It also encourages discussion and collaboration within groups, as learners work together to develop and articulate their responses. By challenging learners with open-ended questions, teachers help them develop essential skills such as problem-solving, creativity, and independent thinking, which are crucial for academic success and real-world applications.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of findings. The chapter also presents the conclusions and recommendation of the study as well as suggestions for further studies.

5.2 Summary of the Findings

The purpose of this study was to explore teachers' pedagogical approaches to learners' acquisition of creativity and imagination in the implementation of the competence-based curriculum in private primary schools in Embu West Sub-county, Kenya. The study used a concurrent design in the mixed methods approach. The target population was 18 private primary schools, 18 head teachers, 412 teachers, and one Quality Assurance and Standards Officer (QASO). Probability and non-probability sampling was used to select the participants. The study used simple random sampling to select 16 out of 18 private primary schools. Purposive sampling was used to include all 16 head teachers and one QASO. The study used proportionate and simple random sampling to select 203 out of 412 teachers. Data collection tools were questionnaires for teachers and in-depth interview guide for head teachers and the QASO. The research instruments were reviewed for validity by the researcher's supervisors. Quantitative data was analyzed using the Statistical Package for Social Science Version 25. Frequencies and percentages were presented using bar graphs, tables, and pie charts. Descriptive statistics were used to analyze the quantitative data, while Qualitative data was analyzed through thematic analysis and presented in the form of themes, narratives, and direct quotations.

The first objective of this study sought to examine the extent to which teachers' application of problem-solving teaching approaches influences learners' acquisition of creativity

and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County. In reference to this objective, it was revealed that the majority of the respondents were in agreement that teachers present learners with problems to discuss and solve in the implementation of CBC. It was found that the challenge of teachers not presenting learners with problems to solve mostly results from the use of lecturer methods by teachers, which is contrary to the expectations of CBC implementation. Most respondents agreed that teachers in schools guide learners on how to discuss solutions to problems in CBC implementation. It was further revealed that a majority of the teachers were undecided on whether teachers in their schools assigned learners independent questions to discuss. Regarding whether teachers in their schools encourage learners' simulation of real-life scenarios, the majority of the teachers were in agreement with the idea. The study findings further revealed that most of the teachers were undecided on whether teachers in their schools engage learners in problem-solving activities that enhance creativity and imagination in the implementation of CBC.

The second objective of the study was to find out the extent to which the application of an investigative approach to teaching influences learners' acquisition of creativity and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County. Under this objective, it was revealed that the majority of respondents disagreed that in their schools, teachers guide learners to conduct experiments that develop their creativity and imagination. The study further revealed that most of the teachers were of the view that teachers (86.4%) encourage learners to discuss problems to deepen their understanding. It was further noted from the findings of the study that most teachers in Embu West Sub County encourage learners to ask questions that help identify problems and find appropriate solutions as they

implement CBC. The study further revealed that most of the teachers were undecided about whether they involved learners in problem-solving by discovering the world around them.

The third objective of the current study aimed to find out how the use of group learning approaches influences learners' acquisition of creativity and imagination skills in the implementation of CBC in private primary schools in Embu West Sub-County. The findings revealed that most of the teachers in Embu West Sub County encourage learners to collaborate with peers in solving problems. Similarly, the majority of the respondents were of the view that teachers in their schools encourage learners to work together both in and outside the classroom. The study also found that encouraging learners to work in groups is beneficial for their academic and personal development. Group work fosters essential skills such as teamwork, communication, and collaboration as students learn to navigate different personalities and perspectives. The study further found that slightly more than half of the teachers were undecided as to whether teachers consider diversity in terms of abilities when forming group discussions in their schools. Further, there was agreement from teachers that teachers in schools encourage active listening and equal participation to enhance creativity and imagination among learners. The study further showed that most of the teachers agreed that they pose open-ended questions to the groups that require thoughtful responses, which enhances creativity.

5.3 Conclusions of the Study

This study aimed to explore teachers' pedagogical approaches to learners' acquisition of creativity and imagination in the implementation of the competency-based curriculum in private primary schools in Embu West Sub-county, Kenya. Based on the findings, the study made the following conclusions:

Teachers' application of problem-solving teaching approaches greatly influences learners' acquisition of creativity and imagination skills in the implementation of the competency-based curriculum (CBC). It was also concluded that teachers in Embu West Sub-county do not effectively present learners with problems to discuss and solve in the implementation of the CBC, which has hindered the acquisition of creativity and imagination among the learners.

Regarding the extent to which the application of an investigative approach to teaching influences learners' acquisition of creativity and imagination skills in the implementation of the competency-based curriculum (CBC) in private primary schools, the study concluded that teachers are reluctant to guide learners in conducting experiments that develop their creativity and imagination. This reluctance has negatively affected learners' acquisition of creativity and imagination skills in the implementation of the CBC in Embu West Sub-county.

Regarding how the use of a group learning approach influences learners' acquisition of creativity and imagination skills in the implementation of the competency-based curriculum (CBC) in private primary schools in Embu West Sub-county, the study concluded that group learning is beneficial in enhancing creativity and imagination among learners. It was further concluded that teachers in Embu West Sub-county make efforts to encourage learners to collaborate with peers in solving problems. Additionally, it was concluded that teachers encourage learners to work together both in and outside the classroom.

5.4 Recommendations of the Study

Based on the findings, the researcher has made several suggestions for different stakeholders within the educational system to help improve teachers' pedagogical approaches.

These improvements are expected to enhance learners' acquisition of creativity and imagination in implementing competency-based curriculum.

The study recommends that the government, through the Teachers Service Commission, implements comprehensive professional development and training programs for teachers in schools, focusing on problem-solving and investigative teaching approaches. These programs should equip teachers with the skills and strategies needed to effectively present problems for learners to discuss and solve, as well as to guide them in conducting experiments that foster creativity and imagination. By enhancing teachers' pedagogical approaches, the acquisition of creativity and imagination skills among learners can be significantly improved.

To the head teachers, the study recommends the establishment of school programs and policies in schools that support teachers in facilitating collaborative learning environments where learners can work together both inside and outside the classroom. This can be achieved by providing guidelines and incentives needed to implement group learning activities that enhance creativity and imagination. Furthermore, regular assessments and feedback mechanisms should be established to monitor the effectiveness of these group learning strategies as well as the conduct of experiments that enhance creativity and imagination among learners.

To the teachers, the study recommends that they pursue professional development programs designed to enhance their skills in facilitating problem-based learning and hands-on experiments. Training should focus on strategies for engaging students in critical thinking and creative problem-solving, as well as techniques for effectively guiding experimental learning. This recommendation arises from the finding that teachers in Embu West Sub-county are not effectively presenting problems for discussion or guiding learners in conducting experiments, which hinders the development of creativity and imagination among learners.

To researchers, the study recommends conducting similar research on teachers' pedagogical approaches to learners' acquisition of creativity and imagination in the implementation of the competency-based curriculum in other sub-counties, particularly in private primary schools. This would provide additional insights essential for informing policymakers and school administrators about how to improve teaching and learning to enhance creativity and imagination among learners.

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Appendix A: Letter of Introduction

TANGAZA UNIVERSITY COLLEGE
(The Catholic University of Eastern Africa)
P. O. Box 15055

Nairobi, Kenya

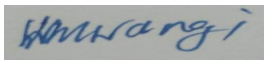
Dear participant,

RE: COLLECTION OF SURVEY DATA

I am a Masters student at Tangaza University College, a constituent college of the Catholic University of Eastern Africa (CUEA). I am conducting research entitled "*Teachers' Pedagogical Approaches and Learners' Acquisition of Creativity and Imagination on the Implementation of Competency-Based Curriculum in Private Primary Schools in Embu West Sub-County Kenya.*" This study seeks to find out whether the pedagogical approaches employed by teachers in the implementation of competency-based curriculum in private schools enhance learners acquisition of creativity and imagination. I am kindly requesting your participation in this study, assuring you that the information you will provide will be used for academic purposes and will be treated with confidentiality.

Thank you.

Yours faithfully,



Sr. Idah Mwangi

Appendix B: Consent Form

My name is Sr. Idah Mwangi, a Masters student at Tangaza University College (TUC), a constituent college of the Catholic University of Eastern Africa (CUEA). I am inviting you to

participate in a research study entitled, "*Teachers' Pedagogical Approaches and Learners' Acquisition of Creativity and Imagination on the Implementation of Competency-Based Curriculum in Private Primary Schools in Embu West Sub-County Kenya.*" You have been chosen to voluntarily participate in this study, and you may choose to participate or not. You may also decline to answer any questions or decide to withdraw from this study. Be assured that the information you share will be kept anonymous and confidential and will be used for academic purposes only. If you have any questions about this study or any concerns about your rights as a research participant, you can contact Sr. Idah Mwangi (sjtidahmwangi@gmail.com).

Consent

I have read and understood the information provided in this consent form. I understand that my participation in this study is voluntary and that I may withdraw at any time without penalty. I agree to participate in this study and allow the researcher to use my data for research purposes.

Name…….....Signature…….……Date…….....

Thank you!

Appendix C: Questionnaire for Teachers

Please read the following questions and tick (✓) your appropriate response.

Section A: Demographic Information

1) Your gender: male [ ] female [ ]

2) Your age bracket 20 – 30 [ ], 31 – 40 [ ] , 41 – 50 [ ], 51-60 [ ], 61 and above[ ]

3) Your highest level of education. Certificate in Primary Teacher Education [ ] Diploma [ ] Bachelor's degree [ ] Master's Degree [ ] any other (specify).....

4) Indicate your years of teaching experience: Less than 5 years [ ], 5-10 years [ ], 11- 15 years [ ], 16 years above [ ].

Section B: Problem-solving Teaching Approach and Learners' Acquisition of Creativity and Imagination Skills

1. Please indicate the extent of agreement or disagreement to the following statements. Tick (✓) appropriately: Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (DA), and Strongly Disagree (SD).

Number	Statement	SA	A	UD	D	SD
1.	In my school, teachers present learners with problems to discuss and solve in the implementation of CBC.					
2.	The teacher in my school guides learners on how to discuss solutions to problems in CBC implementation.					
3.	Teachers in our school assign learners independent questions to consider, followed by presentations of their ideas to the class.					
4.	Teachers in our school encourage learners' simulation of real-life scenarios, which help them see issues from multiple perspectives.					
5.	Teachers in our school engage learners in problem-solving activities that enhance creativity and imagination in the implementation of CBC.					

6. State some of the problem-solving teaching approaches used by teachers in your school to enhance creativity and imagination in the implementation of CBC.

.....

.....

7. How does the use of a problem-solving teaching approach enhance creativity and imagination among the learners in your school?

……

……..

Section C: The Investigative Teaching Approach and Learners' Acquisition of Creativity and Imagination Skills

8. Please indicate the extent of agreement or disagreement to the following statements. Tick (✓) appropriately: Strongly Agree (SA), Agree (A), Undecided (UD) Disagree (DA), and Strongly Disagree (SD).

Number	Statement	SA	A	UD	D	SD
1.	In our school, teachers guide learners to conduct experiments that develop their creativity and imagination.					
2.	Teachers encourage learners to discuss problems to deepen their understanding.					
3.	Teachers encourage learners to ask questions that help identify problems and find appropriate solutions as they implement CBC.					
4.	Teachers involve learners in problem solving through discovering the world around them.					
5.	Teachers encourage learners to analyze situations and form their own conclusions in the process of implementing CBC.					

8. State how investigative teaching approach is applied by teachers in your school? ……

……

……..

.....

Section D: Group Learning Approach to Teaching and Learners' Acquisition of Creativity and Imagination Skills

9. Please indicate the extent of agreement or disagreement to the following statements. Tick (✓) appropriately: Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (DA), and Strongly Disagree (SD).

Number	Statement	SA	A	UD	D	SD
1.	Teachers in our school encourage learners to collaborate with peers in solving problems.					
2.	Our teachers encourage learners to work together in small groups that allow the participation of everyone in the group.					
3.	Teachers in our school encourage learners to work together both in and outside the classroom.					
4.	When teachers are forming groups in our school, they consider diversity in terms of abilities, which helps promote different perspectives and enhance the learners' creativity.					
5.	Teachers in my school encourage active listening and equal participation to enhance creativity and imagination among learners.					
6.	The teacher poses open-ended questions to the groups that require thoughtful responses, which enhances creativity.					

10 State how teachers in your school promote Group Learning.

……

……

11 How does group learning enhance creativity and imagination among learners?

.....

.....

.....

Thank you!

Appendix D: Interview Guide for Head teachers

1. What are your academic qualifications?

   ……

2. For how long have you worked as a head teacher?

   …….

3. Can you describe the problem-solving teaching approaches currently implemented in your school?

   ……
   …….

4. What specific strategies or methods do your teachers use to encourage students to think critically and solve complex problems in the implementation of CBC? Can you provide examples of successful implementations?

   ……
   ……

5. How do you ensure that teachers are adequately supported to implement investigative teaching methods effectively?

   ……
   ……

6. Can you describe the specific methods your teachers employ to facilitate group learning in the classroom as they implement CBC?

   ……
   ……

7. Could you share specific examples of how group learning has positively impacted students' creative thinking and imagination in your school?

   ……
   …….

8. Can you mention some instructional materials available to teachers and students for fostering creativity and imagination in the classroom in the implementation of CBC?

   ……

9. What steps have you taken to ensure that teachers have access to a variety of resources and materials that can encourage creativity and imagination in their teaching?

   ……
   ……

10. Have you observed any limitations in the availability of instructional materials? If so, what are they, and what measures are being taken to address these issues?

    ……
    ……

Thank you!

Appendix E: Interview Guide for Quality Assurance and Standards Officer

1. What are your academic qualifications?

   …….

2. For how long have you worked as a Quality Assurance and standards Officer?

……

3. Can you describe the problem-solving teaching approaches currently implemented in your schools?

……
……..

4. What specific strategies do teachers use to encourage students to think critically and solve complex problems in the implementation of CBC? Can you provide examples of successful implementations?

……
……..

5. How do you ensure that teachers are adequately supported to implement investigative teaching methods effectively?

……
……

6. Can you describe the specific methods teachers in your schools employ to facilitate group learning in the classroom as they implement CBC?

……
…….

7. Could you share any success stories of how group learning has positively impacted students' creative thinking and imagination in your schools?

……
……

8. Can you mention some instructional materials available to teachers and students for fostering creativity and imagination in the classroom in the implementation of CBC?

……

……

9. What steps have you taken to ensure that teachers have access to a variety of resources and materials that can encourage creativity and imagination in their teaching?

……

……..

Thank you!

Appendix F: Plagiarism Report

Turnitin Originality Report

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TEACHERS' PEDAGOGICAL APPROACHES AND LEARNERS ACQUISITION OF CREATIVITY AND IMAGINATION IN IMPLEMENTATION OF COMPETENCY BASED CURRICULUM IN PRIVATE PRIMARY SCHOOLS IN EMBU WEST SUB-COUNTY KENYA By Idah Mwangi

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APPENDI G: Research Clearance Letter

TANGAZA UNIVERSITY COLLEGE

The Catholic University of Eastern Africa

REF: DRIE/ISERC2024/01/0015 14th May 2024

To: *Idah Mwangi*
Reg. No. CMLA 1609

Dear Idah,

Re: TEACHERS' PEDAGOGICAL APPROACHES ON LEARNERS ACQUISITION OF CREATIVITY AND IMAGINATION IN IMPLEMENTATION OF COMPETENCY BASED CURRICULUM IN PRIVATE PRIMARY SCHOOLS IN EMBU WEST SUB-COUNTY KENYA

This is to inform you that TU-ISERC has reviewed and approved your above research proposal. Your application approval number is *TU-ISERC2024/01/0015.* The approval period is **14th May 2024 – 15th May 2025**. This approval is subject to compliance with the following requirements;

1. Only approved documents including (informed consents, study instruments, MTA) will be used
2. All changes including (amendments, deviations, and violations) are submitted for review and approval by TU-ISERC.
3. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to TU-ISERC within 72 hours of notification.
4. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to TU-ISERC within 72 hours
5. Clearance for export of biological specimens must be obtained from relevant institutions.
6. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
7. Submission of an executive summary report within 90 days upon completion of the study to TU-ISERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://research-portal.nacosti.go.ke and also obtain other clearances needed.

Yours sincerely

Dr. Daniel M. Kitonga (Ph.D.)
Chair, TU - ISERC

TANGAZA UNIVERSITY INSTITUTIONAL SCIENTIFIC AND ETHICAL REVIEW COMMITTEE (TU-ISERC)
★ 14 MAY 2024 ★
P. O. Box 15055 - 00509
NAIROBI - KENYA

P.O. Box 15055 - 00509 Langata, Nairobi Kenya
Tel: +254 20 8097667 / 0732 897 000 / 0733 685 059 / 0722 204 724 / 0714 610 777
Email: inquiries@tangaza.ac.ke
Website: www.tangaza.ac.ke

APPENDI H: Recommendation Letter

TANGAZA UNIVERSITY COLLEGE

The Catholic University of Eastern Africa

DIRECTORATE OF RESEARCH, INNOVATION & EXTENSION

E-mail: dir.rie@tangaza.ac.ke **Website:** www.tangaza.ac.ke

OUR Ref: DRIE/ISERC2024/01/0015 **Date:** 14th May 2024

The Commission Secretary,
National Commission for Science, Technology and Innovation
P.O. Box 30623,
Nairobi – Kenya.

Dear Sir/Madam,

Re: Recommendation for Research Permit – Idah Mwangi

This is to confirm that **Idah Mwangi** is a PI in a researcher protocol which was submitted to TU-ISERC for review. The protocol was reviewed and approved for research permit.

Idah wishes to carry out research under the title *"TEACHERS' PEDAGOGICAL APPROACHES ON LEARNERS ACQUISITION OF CREATIVITY AND IMAGINATION IN IMPLEMENTATION OF COMPETENCY BASED CURRICULUM IN PRIVATE PRIMARY SCHOOLS IN EMBU WEST SUB-COUNTY KENYA".*

The findings of the proposed research will contribute vital knowledge on the subject and the field of Organizational Management and Leadership. I strongly recommend Idah Mwangi to the Kenya National Commission for Science, Technology and Innovation for issuance of a research permit. The permit will enable her to proceed to data collection for her study. Thanking you in advance for your cooperation.

TANGAZA UNIVERSITY INSTITUTIONAL SCIENTIFIC AND ETHICAL REVIEW COMMITTEE (TU-ISERC)
★ 14 MAY 2024 ★
P. O. Box 15055 - 00509
NAIROBI - KENYA

Yours sincerely,

Dr. Daniel M. Kitonga (Ph.D.)
Director, Research, Innovation & Extension
Chairperson, TU-ISERC

P.O. Box 15055 - 00509 Langata, Nairobi Kenya
Tel: +254 20 8097667 / 0732 897 000 / 0733 685 059 / 0722 204 724 / 0714 610 777
Email: inquiries@tangaza.ac.ke
Website: www.tangaza.ac.ke

APPENDI I: Letter from the County Director of Education

MINISTRY OF EDUCATION

State Department for Basic Education

Telegrams: "Provedu", Embu
Telephone: Embu 31711
Fax: 30956
E-mail: cde.embu@yahoo.com
When replying please quote:

OFFICE OF THE
COUNTY DIRECTOR OF EDUCATION
EMBU COUNTY
P o Box 123-60100
EMBU

Ref: EBC/GA/32/1/Vol. V/128

Date: 11TH June, 2024

SR. IDAH WAMUYU MWANGI
TANGAZA UNIVERSITY COLLEGE

RE: RESEARCH AUTHORIZATION

Reference is made to NACOSTI Licence No NACOSTI /P/24/36064 dated 28th May, 2023.

This office acknowledges receipt of your research authorization to carry out research on **Teachers' pedagogical approaches on learners acquisition of creativity and imagination in implementation of competency based curriculum in *private primary* schools in Embu West Sub county ,"** for a period ending 28th May,2025.

This office has no objection and therefore wishes you success in this undertaking and requests prospective participants/respondents to accord you cooperation or support you may require.

COUNTY DIRECTOR OF EDUCATION - EMBU COUNTY
P. O. Box 123-60100, EMBU

KIPRUTO KOSGEI
County Director of Education
EMBU COUNTY

Copy to:

The Principal Secretary, MOE-**NAIROBI**
The Secretary/CEO, NACOSTI – **NAIROBI**
The County Commissioner – **EMBU COUNTY**
The Sub-county Director of Education – **EMBU WEST**

APPENDIX J: Research Authorization Letter

OFFICE OF THE PRESIDENT
MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

County Commissioner
Embu County
P.O. Box 3 - 60100
EMBU.

Email: ccembu@gmail.com
When replying please quote ref and date

Ref: EBU/CC/ADM/3/37 VOL. IV /48

13th June, 2024

Deputy County Commissioner
EMBU WEST SUB COUNTY.

RE: RESEARCH AUTHORIZATION

Please be informed that **IDAH WAMUYU MWANGI** license **NACOSTI P/24/36064** has been authorized to carry out Research in your Sub County for the period ending 28th May, 2025.

The Research is based on **"Teachers' Pedagogical Approaches on Learners Acquisition of Creativity and Imagination in Implementation of Competency Based Curriculum in Private Primary Schools in Embu West Sub County."**

Kindly accord them the necessary assistance.

Peter

PETER KIVUITU
For: COUNTY COMMISSIONER
EMBU COUNTY.

Copy to: **Idah Wamuyu Mwangi**

APPENDIX K: Research Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **986262**

Date of Issue: **28/May/2024**

RESEARCH LICENSE

This is to Certify that Sr., IDAH WAMUYU MWANGI of Tangaza University College, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Embu on the topic: TEACHERS' PEDAGOGICAL APPROACHES ON LEARNERS ACQUISITION OF CREATIVITY AND IMAGINATION IN IMPLEMENTATION OF COMPETENCY BASED CURRICULUM IN PRIVATE PRIMARY SCHOOLS IN EMBU WEST SUB-COUNTY KENYA for the period ending : 28/May/2025.

License No: **NACOSTI/P/24/36064**

986262

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

Appendix L: The Map of Embu County

***Source*: https://www.google.com/search?q=map+of+EMBU**