

**IMPLEMENTATION OF COMPETENCY-BASED CURRICULUM POLICY AND
LEARNERS' OUTCOMES IN MAKUENI COUNTY, KENYA**

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DECLARATION

“This thesis is my original work and has not been presented for a degree in any other university.”

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DEDICATION

“To my family and people of good will”

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ABBREVIATIONS AND ACRONYMS

ASAL	Arid and Semi-Arid Lands
CBAM	Concerns-Based Adoption Model
CBC	Competence-Based Curriculum
EARC	Educational Assessment and Resource Centre
EQF	European Qualifications Framework
FGDs	Focused Group Discussions
ICT	Information, Communication and Technology
IEP	Individualized Education Programmes
KCBC	Kenyan Competency-Based Curriculum
KMO	Kaiser-Meyer-Olkin Test (for validity in research)
KNEC	Kenya National Examinations Council
OECD	Organization for Economic Co-operation and Development
PTA	Parent-Teachers Association
REB	Rwanda Education Board
SDGs	Sustainable Development Goals
SNE	Special Needs Education
TEL	Technology-Enhanced Learning
TSC	Teachers Service Commission
UNSDGs	United Nations Sustainable Development Goals
VIF	Variance Inflation Factor (used in diagnostic tests for multicollinearity)

OPERATIONAL DEFINITION OF TERMS

- Assessment Criteria:** In this study, it refers to explanations detailing the anticipated actions and proficiency level of the learner, with the purpose of showcasing the attainment and degree of accomplishment of a learning objective of primary school learners.
- Competency- Based Curriculum:** Involves ensuring students have specific skills and competencies necessary for real-world applications rather than solely emphasizing content knowledge. This curriculum encourages active learning and assessment of students' abilities to perform tasks and solve problems, creating critical thinking and adaptability.
- Learners' Outcome:** All the skills encompassing effective communication and teamwork, essential reasoning, innovative solution finding, imaginative thinking, responsible citizenship, proficiency in using digital tools, the ability to adapt and learn, and a strong sense of personal competence that a learner has acquired after successfully finishing the primary level education program.
- Learning Resources:** Refers to any resource including print or digital format, as well as online and open-access materials that aids and enriches the process of education, whether through direct or indirect means.
- Stakeholder Awareness:** Refers to understanding of individuals, group of individuals, or an organization that include Board of Management, Curriculum Support Officers, PTA representatives and sub-County Directors of Education whose interests in implementation of CBC curriculum affects learning outcomes.

Supporting Infrastructure:	Refers to the set of physical and digital facilities, applications, services and people that provide and support the environments for learning. It includes buildings, classrooms, laboratories, and other similar equipment.
Teacher Capacity:	This refers to enhancing teachers' skills, sharpening their instincts, and improving their abilities and resources. It's about giving schools and their communities what they need to improve student outcomes, thrive, and prepare students to confidently navigate a rapidly changing world.
Teaching Methodologies:	Refers to the systematic approaches and strategies used by teachers to facilitate learning and engage students in the educational process. These methodologies encompass a number of techniques, such as direct instruction, collaborative learning, project-based learning, and inquiry-based learning, each tailored to meet diverse learning styles and objectives.
Teacher Preparedness:	Refers to the level of readiness and competence that educators possess to effectively deliver instruction and support student learning. This includes their knowledge of subject matter, understanding of pedagogical strategies, and ability to create a conducive learning environment, all of which contribute to their effectiveness in the classroom.

ABSTRACT

In a competitive world with varying degrees of complexity in social, economic and cultural needs of our society, the need to deliver a competitive, effective and relevant education system remains a pressing obligation for both policymakers and bureaucrats. Existing research on the effects of implementation of the National Curriculum Policy of 2018 on learning outcomes remain inconclusive. In light of the foregoing, this research sought to study: the effect of availability of learning resources; CBC supporting infrastructure; teacher capacity building; teaching methodologies; stakeholder awareness; and assessment criteria on learners' outcome in Makueni County. The study was anchored on three critical frameworks: advocacy coalition model, street-level bureaucracy, and policy transfer model. Descriptive survey research design was preferred for this study. Interpretivist philosophical paradigm informed the study. A total of 903 Grade 6 teachers from public primary schools in Makueni, 903 grade 6 PTA representatives, 903 chairpersons of public primary schools' Boards of Management, 41 Curriculum Support Officers, and 9 sub-county directors of education were targeted. A total of 349 respondents were sampled representing the subgroups in the target group. Slovin's formula was employed for the sampling. Since the population was relatively small, all the 41 curriculum support officers and the 9 Sub-County directors of education were included in the sample. The process of data collection which involved primary data was carried out in the field utilizing a semi-structured questionnaire and an interview guide. For the pilot test, ten percent (35) participants of the total sample, was selected from Kitui County. Quantitative data underwent analysis through descriptive statistics, regression modelling, and inferential techniques, while qualitative data was explored through thematic analysis. To assess relationships between the variables, the study employed both Pearson's correlation coefficient and multiple regression analysis. All ethical considerations, such as maintaining the anonymity of respondents and adhering to norms of data processing, were followed. The necessary authorizations from Kenyatta University, NACOSTI, and County Director of Education, County Governor, and the County Commissioner were obtained. The findings revealed R-squared value of 0.76, implying that 76% of the variation in learners' outcomes in Makueni County is explained by availability of learning resources, CBC supporting infrastructure, teacher capacity building, teaching methodologies, assessment criteria, and stakeholder awareness. The collective effect of independent variables, including the availability of learning resources ($\beta=0.354$, $p<0.05$), CBC supporting infrastructure ($\beta=0.111$, $p<0.05$), teacher capacity building ($\beta=0.257$, $p<0.05$), effective teaching methodologies ($\beta=0.195$, $p<0.05$), and assessment criteria ($\beta=0.103$, $p<0.05$), had statistically significant and positive relationships with learners' outcomes in Makueni County. However, the study found that stakeholder awareness was statistically insignificant ($\beta=0.044$, $p>0.05$) in its relationship with learners' outcomes. This study concludes that, availability of learning resources, CBC-supporting infrastructure, teacher capacity building, effective teaching methodologies, assessment criteria, and stakeholder awareness, collectively shapes learners' outcomes in Makueni County. In view of the findings, the management in the education sector should prioritize the allocation of learning resources in Makueni County schools, particularly focusing on areas that recorded the highest dissatisfaction rates.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The idea of a "learning outcome" is frequently defined as "educational attainment" or "academic accomplishment," denoting the overall efficiency and consequences achieved through the educational process within educational institutions. These achievements are typically expressed in numerical or value-based terms through achievement tests (Sanchez, Peters, Cheng & Tierney, 2024). Chua, Egot, Espina, Forrosuelo, Gonato, Gungob and Gagani (2024) stated that learning outcomes are the observable results of students' learning abilities and can be identified through their performance and appearance. The study of learner outcomes has become a crucial aspect of educational research and practice, geared towards understanding the benefits learners gain from their educational experiences.

Historically, education focused largely on the delivery of content, with less emphasis on measuring the tangible skills, knowledge, and attitudes students acquired (Asim, Vaz, Ahmed & Sadiq, 2021). However, as the educational environment evolved, so did the understanding of learning as a multidimensional process that goes beyond mere content absorption. According to Yu, Gao and Wang (2021), this shift in educational environment has led to a greater focus on learner outcomes, including not only academic achievements but also critical thinking, problem-solving abilities, and personal growth. The emphasis on outcomes has been driven by the need to ensure that education is relevant and capable of preparing students for the challenges of the modern world and job market.

The importance of learner outcomes lies in its potential to provide a more holistic perspective of education's impact (Saraya, Mardhatillah, Fitriani & Adiyono, 2023). Learner outcome encourages teachers to design learning experiences that are more aligned with real-world applications and the development of life skills. This outcomes-based approach has also been pivotal in policy development and educational reform, as it offers a clearer measure of educational effectiveness. In a global economy that increasingly values innovation, adaptability, and lifelong learning, understanding and improving learner outcomes have become essential (Caspersen & Smeby 2021). This emphasis helps ensure that education systems not only impart knowledge but also creates the comprehensive development of individuals who can contribute meaningfully to society.

Reigeluth and Castelle (2021) organized the categorization of learning based on three key aspects: the context in which learning occurs, the processes involved in learning, and the results achieved from learning. The outcome factor includes all the outcomes that act as signs of the efficiency of learning approaches in diverse situations (Setyosari, Kuswandi & Ulfa, 2023). Furthermore, Higgins (2023) identified five groupings of learning results, encompassing cognitive abilities, thinking strategies, spoken information, physical abilities, and outlooks. Honebein and Reigeluth (2021) proposed that learning outcome can also be seen as a result that assesses the effectiveness of different methods or strategies in varying circumstances. Additionally, Reigeluth and Castelle (2021) stated that learning outcomes specifically refer to the performance that indicates the acquired capabilities. The outcomes of learning are always expressed through specific behavioural objectives.

Numerous elements constituting both internal and external aspects, contribute to learning outcomes, As Munna and Kalam (2021) noted, internal factors pertain to physiological and psychological elements like intellect, motivation to achieve, and cognitive aptitude. External factors, on the other hand, consist of environmental and instrumental elements such as teachers, curriculum, and learning models. The impact of curriculum on learning outcomes has been widely recognized in educational research. Studies by Supriyatno, Susilawati and Hassan (2020) and Darling-Hammond (2017) highlighted the important role curriculum design and implementation play in improving student learning outcomes. They emphasized the need for rigorous curriculum development, clear learning objectives, and alignment with educational goals. Anderson and Stillman (2013) further amplified the importance of curriculum in mathematics education, advocating for coherent content sequencing and appropriate instructional strategies.

Moreover, Fullan and Langworthy (2014) emphasized the integration of deeper learning experiences into the curriculum to enhance critical thinking and problem-solving skills. These studies collectively supported the notion that curriculum plays a significant role in shaping learning outcomes by providing a structured framework and guiding the instructional process. Additionally, Lai and McNaughton (2018) identified the importance of inclusive curriculum design in enhancing student outcomes. They noted the need for differentiated instruction and supportive learning environments. These studies supports the influence of curriculum on learning outcomes and emphasize the significance of thoughtful curriculum planning and implementation in optimizing student learning.

On a global scale, the focus on learning outcomes has gained prominence as part of educational reform efforts. International organizations, such as UNESCO and OECD, have played a significant role in promoting the utilization of learning outcomes to improve the quality and applicability of education on a global scale (Zapp, 2021). The use of standardized learning outcomes frameworks, such as the EQF or the Qualifications Frameworks developed by individual countries, helps establish comparability and transparency in educational achievements across borders. This allows for better recognition of qualifications and facilitates lifelong learning and educational mobility for individuals. In USA, CBC has been integrated into programs where students demonstrate competencies through projects or exams rather than traditional grade-based progress (Muchira, Morris, Wawire & Oh, 2023). For instance, some American high schools and community colleges use CBC for skills in math and science, helping students gain practical skills applicable in real-world situations. In Japan, CBC policies are reflected in a curriculum that emphasizes critical thinking, problem-solving, and application, most importantly in subjects like technology and vocational education (Lv, Yang & Zhang, 2022). This has helped Japanese students gain a deeper understanding of subjects and improve in areas like mathematics and literacy, aligning learning with real-world skills.

In the African context, the focus on learning outcomes is of utmost importance in the pursuit of quality education and sustainable development (Heleta & Bagus, 2021). Education systems across the continent are increasingly recognizing the significance of learning outcomes as a means to address the unique challenges and opportunities present in African societies. One key aspect of learning outcomes in the African context is the need to align education with the development priorities of the continent (Mbithi et al., 2021). African countries are striving to achieve the UNSDGs, which itemize a range of economic, social, and environmental objectives with SDG No. 4 focussed on quality education. Learning outcomes are seen as a tool to ensure that education contributes to these broader development aspirations, by equipping learners with the knowledge, skills, and values necessary for sustainable development.

In Rwanda, the shift to a Competency-Based Curriculum (CBC) emphasizes practical skills, critical thinking, and problem-solving, moving away from rote memorization (Dieu Bavugempore & Ngabonziza, 2024). This approach aims to produce graduates who are better prepared for the job market and can effectively address real-life challenges. For example, the integration of ICT in education has improved students' digital literacy, which is in line with the country's goal of

building a knowledge-based economy. Similarly, Ghana's adoption of CBC focuses on developing learners' competencies in areas such as creativity, communication, and collaboration (Abbam, Mensah, Appiah, Nkansah, Daud, Aikins & Bani, 2024). This curriculum reform seeks to make education more relevant to the needs of society and the economy.

In the Kenyan context, learning outcomes play a significant role in shaping the education system and guiding educational practices. The government and educational stakeholders in Kenya acknowledge the importance of setting clear learning outcomes to ensure quality education and improve student achievement. One key aspect of learning outcomes in the Kenyan context is the alignment with the national curriculum framework. Kenya has implemented a competency-based curriculum that emphasizes the development of skills, knowledge, attitudes, and values. Learning outcomes are designed to reflect the desired competencies that learners should acquire at each stage of their education. This includes not just knowledge specific to the subject but also more general abilities like critical reasoning, finding solutions, effective communication, teamwork, and innovative thinking.

Global educational curricula are in a state of continuous adaptation to align with a fast-changing social, political, economic and technological environment. This imperative to change is inevitable for all nations irrespective of their level of development. In the context of a globalising world, nations are racing to achieve their individual education goals and also compete with other nations in producing individuals who can actively and productively participate in the global economy. Indeed, the term 'curriculum,' stemming from the Latin word "currere" denoting a race akin to that of an athlete or horse (Aytac & Deniz, 2010), takes on an educational connotation referring to a structured program or set of studies to be accomplished by a learner over a specified timeframe (Savage & O'Connor, 2015).

Cremers et al., (2005) described a competency-based curriculum as a form of educational plan where distinct goals are established for each stage in which an individual, establishment, or program is assessed. These goals are aligned with predefined benchmarks for the individual skills that are instructed through combined theoretical and hands-on training. The curriculum also entails passing an assessment that demonstrates proficiency in each skill to successfully conclude the program. Moshia (2012) on the other hand defined a competence-based curriculum as a type of instructional method used in schools that aims to give students the skills necessary to know, learn

how to know things, do things and learn from and with others. Therefore, any teaching and learning methods that placed an emphasis on what a learner can actually do and what particular competencies may make a learner perform in accordance with his or her expectations can be referred to as CBC.

Research conducted by various scholars have established that the competency-based curriculum can be dated back to the year 1957 in the United States. It was in response to the launch of the first satellite by the Soviet Union that this educational concept came into being, as Hodge (2007) explains. Furthermore, according to Cheptoo (2019), the establishment of this policy was spurred by concerns regarding the poor performance of students and the inadequate quality of teacher training. As a result, there was a pressing requirement to organize learning outcomes in a manner that would motivate teachers to establish their instructional objectives on the basis of observable student behaviours. This strategy was expected to enhance the performance of schools, teachers, and teacher trainers, while also addressing societal concerns about underwhelming outcomes in US teacher education programs. Nonetheless, it's worth noting that as of now, the competency-based curriculum has not been extensively adopted in primary schools across the USA.

Since 2000, many nations across the globe such as Canada, Finland, Netherlands, Germany, Kenya and Zambia have been adopting competence-based curriculums in their education systems. The curriculum is designed and executed in alignment with the national competency framework, emphasizing the needs of both learners and the local community for educational programs (van Dinther, Dochy, & Segers, 2015). This has necessitated education systems in different nations to undergo systematic reforms in their primary and secondary school syllabi and programmes of study in all fields (Grinyova & Rezvan, 2016). In the CBC, educators, the Internet, content understanding and books are identified as resources that require mobilisation for students to learn effectively (Mulder, 2017). Therefore, competencies should be created through a suitable solution to situational challenges that in turn ought to be motivated by or located in actual-life circumstances identified as broad fields of learning, for example, media knowledge, health, and environmental conservation to mention a few.

Suryawati and Osman (2018) asserted that in the CBC, broad areas of learning are deemed vital and crucial for the creation of skills since abilities essentially evolve in situations. Teachers therefore should find it effective to channel their teaching towards the promotion of quality

education rather than directing efforts only towards the excellence of students, as well as performance in written examinations (Bajis, Chaar, Penm, & Moles, 2016).

The economic downturn triggered by high levels of youth unemployment in the United Kingdom compelled the adoption of the CBC concept in European countries (Castanho, et al., 2017). The primary point of contention was the education system that was deemed responsible for the insufficient acquisition of essential skills among students graduating from schools. Consequently, significant advancements have been made in the European education system. In contrast, shortcomings in the skillset of the workforce due to economic shifts and rapid technological advancements prompted the implementation of CBC in Australia in 1990 (Smith, 1996).

Mexico implemented reforms in basic education and national education policies in 2009, which resulted in the introduction of a curriculum that was based on an approach that was concentrated on knowledge and skills. Competence was described by this method as the use of one's abilities, knowledge, values, and attitudes in real-world situations (Díaz-Barriga & Barrón (2014); Tromp & Datzberger, 2019). The main goal of this approach was to motivate students to achieve their best academic results. The intention was for students to apply these skills, values, attitudes, and knowledge in their daily tasks, reflecting them in their endeavours.

In 1998, South Africa took the lead in Africa by implementing a competency-based curriculum in response to a shortage of professionals such as engineers, technicians, and artisans (Goredema, Chakamba & Chinengundu, 2022). This shift necessitated a shift in mind set among South Africans, with the aim of providing them with practical proficiencies to tackle the challenges of the modern era (Tolliver, Martin & Salome, 2017). Similarly, Cameroon also adopted a competency-based curriculum to graduate individuals equipped with the requisite knowledge, skills, and attitudes to address today's social and economic complexities (Ngwa & Lawyer, 2020). This educational shift aligns teaching with society's evolving demands, focusing on skill acquisition, knowledge, and confidence in solving problems attributes greatly valued in the job market. The prior educational framework lacked clear competence objectives, impeding graduates' job readiness. Tanzania's competency-based curriculum concentrates on readying students with life and career proficiencies, encompassing qualities like leadership, interpersonal skills, adaptability, self-motivation, accountability, social consciousness, and cross-cultural competence (Mohamed & Karuku, 2017). These attributes are vital for a seamless transition into the job market.

In April 2015, Rwanda adopted a CBC as a means to transform education. The aim was to ensure that learning becomes deep, enjoyable, and fosters the development of habits that lead to high levels of achievement (Rwigema & Andala, 2022). This new curriculum has been praised for its shift away from heavy academic content to a more practical and skills-oriented approach. It is designed to be more relevant to real-world working environments and daily life, as highlighted by the REB in 2015. Cheptoo (2019) notes that the curriculum framework bridges the gap between theoretical knowledge and practical application, aiming to enhance graduates' capabilities and job-ready skills. Schools that implemented CBC techniques saw positive outcomes such as improved student engagement, better attendance rates, and increased pass rates. Nevertheless, there were challenges in implementing the curriculum, including the insufficient support from parents, difficulties created by huge class sizes that prevented effective teaching, a lack of suitable teaching and learning tools, and a paucity of competent teachers to effectively execute the curriculum (Urunana, 2018) are some of the factors that contributed to the shortcomings of the educational system.

There is inadequate preparation of teachers in most countries adopting the CBC. However, problem-solving ability scores, interest in science-related careers and learners' level of achievement express considerable increases although the magnitude of the effect is modest in most countries (Okoli, 2017). The outcomes imply that curriculum reforms have moved pedagogical plans in the right course and that erudition in the consequent direction has improved (Makunja, 2016). Reduction in SD may also show a given convergence of the entailed efforts because a lower number of learners' performances are far-off from the mean (Mulder, 2017). The relatively modest improvement in the achievement level of learners after the implementation of the CBC may have two implications. One of them is that reforms have only started to portray their effectiveness and it will be possible to have a progressive rise of the benefits as the implementation proceeds to a more mature stage (Makunja, 2016). Another insinuation is that the CBC has shown low effectiveness and the question of its value in consideration of the enormous resources spent may be raised (Makunja, 2016).

The execution of the CBC has encountered a range of problems, notably; insufficiencies in educational resources and subpar textbooks, posing a challenge in effectively carrying out the proficiency-based curriculum. Researchers, like Momanyi and Rop (2020), along with Ondimu (2018), assert that gaps have arisen during the preparation of educational materials, leading to

delays in book publication. As a result, accessing specific textbooks for grade levels becomes problematic, casting a negative impact on the curriculum's implementation. This situation causes frustration for both stakeholders and instructors who require these essential resources for the learners. Additionally, a lack of adequate human resources stands as another obstacle in implementing the curriculum based on proficiency. The persistent issue of teacher understaffing in Kenya's public schools' education system has been recognized by the Teachers Service Commission. As highlighted by Onyango (2020), there is a substantial cumulative shortage of around fifty thousand teachers in primary schools nationwide alone.

The arrangement of the curriculum has also impeded the execution of a competency-based approach. The curriculum's structure has been devised in a manner where numerous activities take place simultaneously. Consequently, if a student is absent from school for any reason, catching up with their peers who attended during their absence becomes exceedingly challenging (Amunga et al., 2020). Another obstacle is the presence of large class sizes, wherein classes exceed the optimal number recommended by the government. This situation poses a difficulty for implementing the competency-based curriculum and arises from policies promoting accessible education, such as free primary and secondary education. Furthermore, a lack of proficiency in ICT among the majority of educators is a prevailing issue. This lack of skill prevents many teachers from effectively integrating ICT into the teaching and learning processes within the framework of the competency-based curriculum (Ondimu, 2018).

The effective rollout of the competency-based curriculum relies on the classroom teacher, who serves as a guide in the learning journey, as well as on active involvement from parents. It is due to the fact that certain aspects of the curriculum extend beyond the bounds of the school setting that this effect occurs. It is expected of parents that they will have a key influence in their children's academic performance by creating an environment that is encouraging of learning and provides support. They are responsible for providing students with important materials for hands-on activities, supervising and assisting students with their homework, and motivating students to fulfil their potential by completing the tasks that have been set to them. In addition to this, parents are obligated to gather evidence that their children have completed the assignments that have been given to them by their teachers, and they must also supply the Kenya early years' assessment database with accurate information regarding their children. This indicates that fostering and

nurturing the key competencies of the CBC (Competency-Based Curriculum) cannot be solely the responsibility of educators.

Both teachers and parents must collaborate as partners and co-educators to enrich the development of appropriate skills and competencies in students. Nonetheless, a significant number of parents remain uninformed about their pivotal role in implementing CBC. Many of them are of the opinion that they have not been sensitized as parents. Further, the fact that some learners are in boarding schools compounds the problem since the parent only gets to interact with their children during the holidays. While these challenges could affect learner's outcome, there is hardly any scholarly evidence to show this, therefore, this study seeks to fill this gap by assessing how the effectiveness of the implementation of CBC curriculum is influencing the learners' outcome in Makeni County with view of generalizing the study findings.

1.2 Statement of the Problem

The Competency-Based Curriculum (CBC) in Kenya faces a number of implementation challenges that hinder its intended impact on learner outcomes, raising concerns about the effectiveness of its policies in delivering holistic educational benefits (Akala, 2021). A primary issue has been inadequate resources, with many schools lacking essential learning materials, teaching aids, and quality textbooks, which restricts the curriculum's practical application (Gichurur, 2024). Teacher preparedness is another major hurdle; a significant number of teachers report insufficient training, which affects their ability to execute CBC's student-centered and skill-oriented goals. Studies indicate that in some regions, the teacher-to-student ratio is as high as 1:80, creating overcrowded classrooms that further strain resources and limit personalized teaching essential to CBC's success (Waruingi, Mbogo & Mambo, 2022; Njiru & Odundo, 2024). Additionally, many schools lack sufficient ICT infrastructure, a core requirement for CBC's competency-based assessments and digital literacy objectives. This lack of digital support infrastructure affects the consistency and reliability of student assessments. Parental involvement, is also low due to a lack of awareness and resources among parents, especially in rural areas (Amutabi, 2019). These challenges cumulatively affect students' transition, with recent findings noting a slow progression through CBC levels and limited measurable improvements in practical competencies among learners.

The implementation of CBC has faced a lot of challenges since its adoption and has generally failed to achieve its intended outcomes among learners. For instance, lack of sufficient class learning and

teaching materials and not enough quality textbooks (Momanyi and Rop (2019) and Ondimu (2018), inadequate human resource (Onyango, 2020), lack of parental support, large class sizes, and curriculum structure (Amunga et al., 2020) and inadequate digital literacy skills remains a challenge in the implementation of the competency based curriculum. The success in the implementation of the CBC curriculum is tied to availability of learning resources, CBC supporting infrastructure, teacher preparations, teaching methodologies and assessment criteria and this may vary from one location to another due to access of information. The Kenya government, through the national curriculum policy 2018, pronounced its mandate in provision of learning resource, CBC supporting infrastructure, teacher preparations, teaching methodologies and assessment criteria. However, the effectiveness in provision of this policy support and its effect on learner's outcome in Makueni County warranted a thorough investigation. This study sought to fill this gap by determining effectiveness of the implementation of competence based curriculum on learners' outcome in Makueni County, Kenya.

1.3 Objectives of the Study

The study was guided by the following specific objectives:

- i. To assess the effect of availability of learning resources on learners' outcomes in Makueni County.
- ii. To investigate the effect of CBC supporting infrastructure on learners' outcome in Makueni County.
- iii. To determine the effect of teacher capacity building on learners' outcome in Makueni County.
- iv. To investigate the effect of teaching methodologies on learners' outcome in Makueni County.
- v. To determine the effect of assessment criteria on learners' outcome in Makueni County.
- vi. To establish the effect of stakeholder awareness on learners' outcome in Makueni County.

1.4 Research Questions

- i. What is the effect of availability of learning resource on learners' outcomes in Makueni County?
- ii. How has the CBC supporting infrastructure affected learners' outcomes in Makueni County?

- iii. What is effect of teacher preparations on learners' outcomes in Makueni County?
- iv. How has the CBC teaching methodologies affected learners' outcomes in Makueni County?
- v. What is the effect of assessment criteria on learners' outcomes in Makueni County?
- vi. What are the effects of stakeholder awareness on learners' outcomes in Makueni County?

1.5 Justification and Significance of the Study

1.5.1 Justification of the Study

An optimal solution or definitive strategy for adopting policies cannot be prescribed, since the motivations behind policy adoption are intricate, ever-changing, and deeply intertwined with the specific environment in which they are implemented. This complexity is compounded by the fact that the drive to alter educational policies is not solely rooted in educational purposes and results; rather, it is significantly shaped by the prevailing socio-political circumstances.

Similarly, when evaluating the results achieved by learners, it is important to recognize that not all learning exclusively occurs within the confines of a classroom under the influence of school policies. When delving into the realm of policy analysis, the initial challenge lies in defining the boundaries of the system being studied. Policymakers often assume these boundaries to encompass the aspects they can directly regulate, typically referring to the state education system. However, it is crucial to remember that a significant portion of learning takes place beyond these confines, as evidenced by the impact of various student background factors (such as the quality of early home learning environment, maternal educational attainment, socio-economic status, etc.) in predicting their academic achievements (Sammons et al. 2007; Wheeler et al. 2014).

Based on this understanding, evaluation on the effectiveness of curriculum implementation and its influence on the targeted outcome are critical to ensure improvement of policy on education, competitiveness and obtaining better understanding of the society among others. The findings of the study will help to identify how effective is the implementation CBC education policy as envisioned by the policy makers and whether the learner's outcome is effective and consistent with policy objectives. This study therefore focused on public primary schools in Makueni County, being randomly selected among ASAL counties associated with historical social, political, and economic marginalisation. This is because they were reported to experience significantly higher challenges as compared with private primary schools, including relatively high number of learners.

In addition, schools in Makueni were actively engaged in guiding the first CBC cohort into junior secondary, making it an ideal case for evaluating early CBC outcomes.

1.5.2 Significance of the Study

This study holds significant potential to guide government agencies in assessing the effectiveness of CBC policy reforms on learners' outcomes. The findings are expected to assist policymakers in refining education policies related to CBC, aiming to enhance outcomes across the seven identified competencies. Additionally, the study will offer valuable insights into key areas requiring attention to achieve successful implementation of the CBC curriculum. By shedding light on the management practices in primary schools within Makueni County, it could contribute to improving school administration, ultimately leading to better educational results. The study's findings are also anticipated to enhance the overall effectiveness of CBC implementation by identifying critical factors influencing its success. Furthermore, it aims to address existing information gaps regarding the impact of CBC policy implementation on learners' outcomes. Finally, this research is poised to make a meaningful contribution to the growing body of evidence in the field of education policy implementation, supporting broader efforts to improve educational practices and outcomes.

1.6 Scope and Limitation of the Study

1.6.1 Scope of the Study

In relation to this study, the variable scope comprises the study of implementation of the CBC served as the independent variable, and the outcome of the learners served as the dependent variable. The study assessed effect of learning resources' availability, CBC supporting infrastructure, teacher preparations, teaching methodologies and assessment criteria on the learners' outcome. A total of 903 Grade 6 teachers of public primary schools in Makueni, 903 chairpersons of all public primary schools' Boards of Management, 903 PTA representatives, 41 Curriculum Support Officers, and 9 sub-county directors of education were targeted. On the geographical scope, the study targeted Grade 6 class teachers from public schools of primary level in Makueni County.

1.6.2 Limitations and Delimitations of the Study

The research anticipated several limitations during its execution. The intended participants consisted of grade 6 teachers and learners with busy schedules. The researcher anticipated that

there would be difficulty in finding suitable time slots for these participants to answer the survey inquiries. To address this issue, the researcher would coordinate with the institution beforehand to establish a suitable visiting schedule. Additionally, some chosen participants felt uncomfortable with certain elements of the assessment tools, particularly the evaluation of learners' achievements across various skills. This was due to the sensitive nature of the learners' outcomes, and respondents were concerned that discussing it might lead to the information leaking to the public. To tackle this problem, the researcher offered a personal commitment letter affirming the utmost confidentiality in handling the data. Moreover, endorsements from KU and the NACOSTI were included.

CHAPTER TWO

LITERATURE REVIEW, THEORETICAL AND CONCEPTUAL FRAMEWORK

2.1 Introduction

This chapter provides an in-depth exploration of various factors and frameworks relevant to understanding the outcomes of Competency-Based Curriculum (CBC) implementation. The empirical reviews are discussed under seven sections in this chapter. First, the section on CBC Learners Outcomes explores existing research and studies that have examined the impact of Competency-Based Curriculum (CBC) on learners, including their achievement, skills development, and overall educational outcomes. The subsequent sections focus on the availability of learning resources and supporting infrastructure within the CBC framework, as well as the influence of teacher capacity building and teaching methodologies on learners' outcomes. The assessment criteria for evaluating learners' outcomes are also explored, along with an examination of stakeholder awareness and its impact on learners. The chapter also delves into the theoretical frameworks of the Advocacy Coalition framework, Policy Transfer, and Street-Level Bureaucracy to provide deeper insights into the factors influencing learners' outcomes in CBC and finally the conceptual framework.

2.2 Empirical review

2.2.1 Learners' Outcomes

Zalina and Ahmad Faizal (2021) conducted an empirical study on the effectiveness of a competence-based curriculum in Malaysian higher education institutions. The purpose of their study was to estimate the impact of proficiency-based curriculum on students' learning outcomes, their satisfaction with the program, and their perception of the program's relevance to their future careers. The authors conducted a survey among 365 students who were enrolled in four Malaysian higher education institutions. The information was examined through the application of descriptive and inferential statistical techniques, which encompassed correlation and regression analyses. The findings of the investigation indicated that the curriculum structured around competence had a beneficial influence on students' educational achievements, contentment with the program, and perception of its applicability to their prospective professions. Moreover, the research identified a notable and positive connection between the execution of the competence-based curriculum and

students' learning achievements. Also, the study found that students who were exposed to a competence-based curriculum were more satisfied with the program and perceived it to be more relevant to their future careers compared to those who were not exposed to it. The authors attributed these findings to the fact that competence-based curriculum focuses on the development of practical skills and knowledge, which are more relevant to students' future careers.

Misbah, Gulikers, Dharma, and Mulder (2020) conducted a study to evaluate the effectiveness of competence-based vocational education (CBVE) in Indonesia. The researchers used a mixed-methods approach, combining a survey with open-ended questions and interviews with key stakeholders, including teachers, students, and employers. The study involved 580 students from seven vocational schools in Indonesia who were enrolled in four different CBVE programs: tourism, hospitality, automotive technology, and electronics. The survey assessed the students' perceptions of their learning experiences and the development of their competencies. The study findings showed that CBVE had a positive impact on students' learning experiences and competencies. The majority of the students reported that they had developed the required competencies for their chosen program and that they felt prepared for the workforce. Additionally, employers reported that CBVE graduates had better technical and soft skills than non-CBVE graduates.

Banchiamlak (2021) carried out research in Ethiopia with the aim of examining how a competency-focused curriculum impacts the improvement of student achievements within TVET establishments in the country. The study employed a quasi-experimental research design to compare the learner outcomes of students who studied under the traditional curriculum and those who studied under the competence-based curriculum. The study's sample consisted of 323 TVET students from two selected institutions in Ethiopia. The findings of the study revealed that the competence-based curriculum has a significant positive impact on learner outcomes in TVET institutions in Ethiopia. Students who studied under the competence-based curriculum demonstrated higher levels of knowledge and skills acquisition, better problem-solving abilities, and increased self-confidence compared to their counterparts who studied under the traditional curriculum. Furthermore, the research discovered that the adoption of the competency-driven curriculum has led to alterations in how teaching and learning are conducted. This includes a transition from an instructor-focused approach to one centered on the learners, the integration of real-world encounters into the learning journey, and the utilization of evaluation methods that

prioritize students. Nonetheless, the investigation also pinpointed several obstacles in executing the competency-based curriculum. These obstacles encompass insufficient resources, inadequate teacher preparation, and challenges in evaluating students' proficiencies.

The KICD (2017) formulated the Basic Education Curriculum Framework (BECF) that offers guidance for crafting and executing the fundamental education curriculum across pre-primary, primary, and secondary education tiers in Kenya. The BECF is rooted in the CBC methodology, which spotlights the acquisition of practical abilities enabling students to apply knowledge in real-world contexts. According to the framework, students are expected to gain eight fundamental skills, including communication, teamwork, critical reasoning, innovative problem-solving, artistic expression, responsible citizenship, digital proficiency, independent learning, self-confidence, and understanding others' perspectives. The BECF further defines the academic subject areas for every level of education, covering language, mathematics, natural sciences, humanities, religious studies, artistic expression, physical education, health education, and practical life skills. The framework underscores the infusion of technology in teaching and learning, urging dynamic and student-centric approaches. Moreover, the BECF underscores the significance of evaluation within the curriculum, focusing on continual assessment to foster learning and offer constructive feedback to both educators and learners. The framework also provides guidance on the development of assessment tools that align with the competencies and learning outcomes of the curriculum.

Gichuru, et al. (2021) provided an account of the progress of the education curriculum in Kenya, particularly in transitioning from a knowledge-based curriculum to a competency-based education (CBE) policy. The article discussed the historical context of the education system in Kenya, the introduction of the CBE policy, and the challenges and opportunities that come with this transition. The article emphasized the importance of the CBE policy in providing students with relevant skills and knowledge for the current job market. The authors highlighted the need for a curriculum that prepares students for a rapidly changing global economy and emphasized the importance of students' ability to solve real-life problems. The article also discussed the challenges faced in implementing the CBE policy, including inadequate training for teachers, inadequate resources, and resistance from stakeholders. Despite these challenges, the authors argued that the CBE policy has the potential to provide a more inclusive and equitable education system that meets the needs of all learners.

Lovren and Jablanovic (2023) indicated that learner outcomes involves the measurable skills, knowledge, attitudes, and values that students gain as a result of their educational experiences. These outcomes are integral to understanding the impact of education and can be observed across various dimensions. Academic achievement is often the most recognized among learner outcomes as it encompasses the mastery of subject-specific knowledge and skills, usually assessed through standardized tests, exams, and class assignments. Lovren and Jablanovic (2023) found out that high academic achievement indicates that students have effectively absorbed the curriculum content, demonstrating their understanding and ability to apply what they have learned in various contexts. Furthermore, the study established that critical thinking and problem-solving skills are essential outcomes of a well-rounded education. These skills enable learners to analyze information, identify patterns, make connections between ideas, and devise innovative solutions to complex problems.

A study by Subasman (2024) indicated that effective communication was an important learner outcome. The study established that it included proficiency in reading, writing, speaking, and listening, as well as the ability to articulate thoughts clearly and persuasively. Subasman (2024) explained that in today's interconnected world, strong communication skills are vital for personal, academic, and professional success, enabling individuals to express ideas, collaborate with others, and navigate social situations. Moreover, Series (2024) asserted that social and emotional learning (SEL) outcomes are gaining recognition for their importance in students' personal and academic lives. SEL skills help students manage emotions, build positive relationships, and make ethical decisions, contributing to their overall well-being and success.

According to Adiawaty, Oci, Siminto and Ermindyawati (2023), digital literacy is an increasingly critical outcome in the 21st century. As technology continues to permeate all aspects of life, the ability to effectively use digital tools and navigate online environments is essential. Creativity and innovation are valued outcomes that reflect a student's ability to think outside the box and generate original ideas. Education systems that foster creativity encourage students to explore, experiment, and take risks in their learning, leading to new insights and approaches in various fields. Furthermore, Adiawaty, Oci, Siminto and Ermindyawati (2023), lifelong learning is a key outcome, characterized by a continuous pursuit of knowledge and personal development. Individuals who embrace lifelong learning remain curious, adaptable, and open to new experiences throughout their lives, enabling them to thrive in an ever-changing world. Civic engagement and

global citizenship are important outcomes, as education plays a crucial role in preparing students to participate actively in their communities and the wider world. These outcomes involve an understanding of civic responsibilities, cultural awareness, empathy, and a commitment to social justice and sustainability.

2.2.2 Availability of learning resources on learners' outcomes

Teaching aids and educational resources play a crucial role in nurturing personal characteristics, societal roles, and academic proficiencies in students. These materials can be customized to support endeavours related to career advancement, emphasizing aspects like accountability and effective task management. They also encompass enhancing skills like self-motivation, making choices, addressing challenges, and speaking up for oneself. Furthermore, these resources contribute to acquiring abilities for living independently, fostering better relationships with others, enjoying leisure activities, mastering transportation logistics, refining classroom conduct, and refining social interaction capabilities (Mynbayeva, Sadvakassova & Akshalova, 2018).

Teaching and educational materials encompass a range of resources such as charts, textbooks, maps, and electronic tools, as well as audio-visual aids like tape recorders, radios, cassettes, and televisions. Additionally, various other learning tools are included, such as writing implements like erasers, pens, crayons, notebooks, chalk, rulers, pencils, workbooks, slates, and paper supplies, among others (Blazar & Kraft, 2017). Bukoye (2018) demonstrated a significantly strong and positive correlation between academic performance and learning materials. Bukoye's research indicated that schools equipped with ample resources tended to achieve better academic results compared to schools with fewer materials. Their research indicated that schools under the management of individuals demonstrated robust performance as a result of having ample and suitable teaching and learning resources.

Alameddine and Makarem (2021) carried out a study with the aim of exploring how competency-based education (CBE) influences student success within the United States. Their research involved conducting a methodical analysis of existing literature on CBE within the US context, with a specific emphasis on studies that delved into the consequences of CBE on student accomplishments. The authors found that CBE has a positive effect on student achievement, particularly for low-performing students. The authors attribute this to the individualized and flexible nature of CBE, which allows students to learn at their own pace and focus on the

competencies they need to master. The authors also suggest that CBE may be particularly effective for students who are disengaged or disconnected from traditional educational models. The authors note that there are still some challenges to implementing CBE effectively, including the need for well-designed and high-quality resources, the need for effective assessment and feedback mechanisms, and the need for adequate teacher training and support. However, the authors suggested that the positive impact of CBE on student achievement makes it a promising approach for improving educational outcomes in the US.

Thomas Bossuroy, Clara Delavallade, and Eliana La Ferrara conducted a study in 2021 focusing on the influence of school library resources on educational achievements within rural Ugandan primary schools. Their research, structured as a randomized controlled trial, spanned 80 such schools across rural Uganda. The findings revealed a significant positive correlation between the presence of school library resources and improved student performance, notably in reading and mathematics. Specifically, the study found that providing school libraries with additional resources, including books, textbooks, and other materials, resulted in significant improvements in students' reading and math scores. The study also found that the impact of school library resources was more significant for girls than boys. This finding suggests that school libraries may be particularly important in promoting gender equity in education in Uganda. Overall, the study highlighted the important role that school libraries can play in promoting learning outcomes, especially in resource-constrained contexts. The findings of the study have important implications for policymakers and practitioners who are interested in improving education outcomes in rural areas of Uganda and other similar contexts.

To help students assimilate information, tactile, auditory, and visual materials can be used to lessen the importance of visual resources during education. Many researchers concur that learners often absorb new information most effectively when they can visualize the entire concept. There are several advantages to utilizing visual learning techniques. For instance, visual materials help learners achieve clarity in their thoughts and comprehension of information. They enable the understanding of concepts through making connections and facilitate the integration of new knowledge with prior learning. Additionally, these materials assist educators in identifying learners' misconceptions. Additionally, visual learning encourages a variety of different ways of thinking (Foliaki, 2012). According to Cubillas (2020), visual resources are highly helpful in transmitting concepts and knowledge in a more accessible manner. According to Kurgatt and

Omuna (2016), students are able to more easily comprehend the subject when the substance of the course is supplemented with things like diagrams, films, visual representations, charts, maps, images, and diagrams.

A study by Mugabo et al. (2021) delved into the intricate relationship between the characteristics of schools and their ability to adopt and effectively implement the CBC. The findings pointed to a notable gap in the provision of essential teaching resources and the structural readiness of schools to support this modern educational framework. Addressing these challenges, the researchers proposed a set of comprehensive recommendations aimed at bridging these gaps. Key among these was the call for a significant enhancement in the supply of educational materials and the establishment of robust, continuous in-service training programs designed to equip teachers with the practical skills and knowledge necessary for the effective incorporation of innovative educational concepts into their teaching practices. The study underscored the critical importance of these factors, emphasizing that deficiencies in teaching resources and professional training for teachers stand as significant barriers to the successful implementation of competency-based educational models, ultimately affecting the quality of education delivered.

The research conducted by Makokha and Wanyonyi (2015) centered around examining how instructional materials are employed when teaching Kiswahili poetry at the secondary school level in Kenya. The authors asserted that these teaching aids play a crucial role in facilitating effective learning and teaching, contributing to an enhanced education quality in Kenya. The participants in the study comprised of 30 educators and 300 students from 15 secondary schools in Western Kenya. The data collection involved questionnaires and the subsequent analysis employed descriptive statistics. The investigation revealed that teachers employed a diverse range of instructional materials like textbooks, visual aids, and poems to instruct Kiswahili poetry. Nonetheless, there was variation among teachers in the extent to which they incorporated these resources. Furthermore, the study identified a favorable association between the academic achievements of students in Kiswahili poetry and their effective utilization of teaching resources.

Odongo and Koskei's 2024 study embarked on a meticulous examination of how classroom resources impact student achievement in public primary schools within Belgut Sub County. The investigation targeted a comprehensive demographic comprising 134 head teachers from as many preschool institutions, 402 preschool educators, 12 education officials, and 938 parents of

preschool children. To ensure a representative sample, the study randomly selected 40 preschool centers and their respective head teachers, accounting for 30% of the total. The study revealed a critical shortage of teaching and learning resources in preschools across Nyamira North Sub-county, emphasizing a major obstacle to achieving effective inclusive education. To address this issue, the research recommended ensuring an adequate supply of educational materials to facilitate the successful implementation of inclusive education frameworks. Additionally, it highlighted the need for enhanced financial support to acquire specialized resources tailored to students with Special Needs Education (SNE). The study stressed the importance of equipping schools with the necessary tools to accommodate diverse learning requirements and promote equitable educational opportunities for all learners.

Tlili, Ofosu, and Zhang (2023) embarked on a detailed research project focused on exploring the educational strategies, instructional methods, and adoption of open educational resources (OER) among educators in Ghana. The study aimed to delve deeply into the perceptions and experiences of Ghanaian teachers regarding OER and to understand how these insights influence their approach to using these resources in teaching. To achieve a well-rounded view, the research employed a mixed-methods approach, combining questionnaires with semi-structured interviews. This methodology was chosen to capture a broad spectrum of experiences and interpretations related to OER, shedding light on their practical application in Ghana's educational landscape. In spite of the fact that Ghanaian educators have favourable pedagogical attitudes about open educational resources (OER) and are incorporating them into their teaching practices, the data that were published emphasized that there are numerous issues that could potentially hamper the adoption of OER in Ghana. Particularly, educators voiced their worries over intellectual property and the difficulties of locating open educational resources (OER). On the basis of these findings, the study offered recommendations to various stakeholders in order to facilitate the adoption of open educational resources in Ghana and other African nations that are comparable.

A study conducted by Adebayo Ntokozo and Grace (2020) investigated the impact of educational resources on the academic performance of students attending South African schools. The researchers focused specifically on the difference that exists between wealthy and less wealthy educational institutions. The predicted improvement in educational outcomes had not materialized, with wealthy schools continuously outperforming their less wealthy counterparts. This was the case despite the additional educational expenditures that were intended to benefit these schools.

For the purpose of determining the influence that educational resources have on academic outcomes, the technique consisted of conducting an analysis of the TIMSS 2015 data. The results of the study revealed that while educational resources played a role in enhancing student achievement, their effect was relatively minor in comparison to other factors like effective school management, accountability measures, and the motivation of the students themselves. Consequently, the research concluded that merely providing educational resources is not enough to address the broader challenges faced by South Africa's educational system. The study underscored the need for a comprehensive approach that considers various factors to truly uplift the quality of education.

2.2.3 CBC supporting infrastructure on learners' outcome

The difficulties that high school teachers encounter when attempting to apply the Competency-Based Curriculum (CBC) were brought to light by a separate research endeavor that was carried out in Tanzania by Muneja (2015). Based on the findings of the research, it was discovered that educators were confronted with a multiplicity of challenges that had a negative impact on their capacity to effectively administer the curriculum. Inadequate teacher understanding on acceptable teaching and evaluation methodologies, a lack of suitable textbooks, and a quality of teaching materials that was below par were some of the challenges that were encountered. Additionally, the study discovered that there is a lack of excitement among educators to participate in the curriculum, as well as a shortage in the availability of suitable information and communication technology (ICT) resources for educational purposes. This was one of the findings of the research. This would be done in order to solve the challenges that have been identified. In addition, the study suggested that schools should be provided with a sufficient amount of resources and infrastructure. Due to the fact that this research was carried out solely in Tanzania, it is possible that the conclusions of this study will not be immediately transferable to educational environments throughout Kenya. As a consequence of this, there is a requirement for a separate investigation to be conducted in order to determine the challenges that teachers have while attempting to apply the CBC in Kenya educational institutions.

Nyabokeye, Kereri and Nyabwari (2021) conducted a comparative analysis of Kenya's previous 8-4-4 education system and the newly implemented Competence-Based Curriculum (CBC) within the context of the country's Vision 2030, particularly focusing on the requirements of science,

technology, and innovation. Their research emphasized the shift from the traditional, exam-oriented 8-4-4 system, which aimed at self-reliance but gradually lost its educational essence, to the CBC, introduced in 2019 with a structure of 2-6-6-3, designed to foster student-centered learning. The study indicated that the CBC's core objective was to nurture creative thinkers and competent individuals by actively engaging students in their learning processes, thereby equipping them with 21st-century skills such as collaboration and creativity. The study highlighted the challenges faced in the transition, including the need for teacher training in line with the new curriculum's demands and the necessity for adequate resources to ensure successful CBC implementation. By examining the 2019 Kenya census and other secondary data, Nyaboke, Kereri, and Nyabwari provided insights into the skills that Kenyan teachers had to develop to achieve the Vision 2030 aspirations and the critical resources required for CBC's effective execution. Their analysis concluded that adopting the CBC was a pivotal step towards enhancing the quality and equity of education in Kenya, aiming to prepare students better for the demands of the modern world.

Elsewhere, Singh and Rama (2024) embarked on a study to delve into the critical relationship between teacher quality and student learning outcomes in secondary education, with a particular focus on the moderating role of infrastructure. Situated in the context of Bihar, a state that has historically transitioned from being a beacon of education to one struggling with low literacy rates and inadequate educational infrastructure, the study aimed to provide information that could guide efforts to revitalize the educational landscape. Employing a simple moderation analysis and drawing upon the resource dependency theory, the researchers sought to understand how the quality of infrastructure could influence the impact of teacher quality on student learning outcomes. This finding emphasized the pivotal role that educational infrastructure plays in enhancing or constraining the effectiveness of teaching, particularly in regions where the infrastructure is lacking. The study concluded that enhancing the quality of education goes beyond merely increasing the number of physical structures; it requires a holistic approach that includes, but is not limited to, improving teacher quality and creating conducive learning environments.

Charles, Song and Khaing (2022) conducted a systematic literature review to explore the factors that influenced the implementation of CBC in lower secondary schools in Uganda. The main objective was to identify and synthesize these factors by reviewing studies published between 2013 and 2022, sourced from electronic databases and gray literature, adhering to a comprehensive

search strategy. The methodology employed involved the inclusion of 27 relevant studies, from which data were extracted and synthesized using a thematic synthesis approach, grounded in the PRISMA method for secondary data analysis. The review revealed several challenges in the implementation of CBC, notably the absence of teacher training specific to this curriculum and a scarcity of textbooks tailored to the new requirements. Moreover, the findings pointed to an excessively high teacher-student ratio, reaching 1:70 in some classrooms, which further complicated the implementation process. The study concluded that the effective implementation of CBC was hindered by a constellation of factors, including the need for enhanced teacher training and professional development, the availability of educational resources, stakeholder support, and alignment with national educational policies and priorities. The recommendations put forth by the review emphasized the critical need for concerted efforts to improve CBC implementation in Uganda. This includes ensuring the availability of instructional materials on school premises, conducting proper training for educational personnel to facilitate the effective enactment of educational policies, and clarifying the roles and responsibilities of all stakeholders involved.

A thorough evaluation was carried out by Mashauri, Adunola, Kgwefane, Masimega, Haji, and Kumah (2024) to investigate the effects of educational changes on student achievement in a number of African nations. In light of the dynamic nature of education on the African continent, this research set out to examine the many recent innovations in the field and the effects they have had on students' ability to learn. Efforts to make education in Africa better and more relevant have led to dynamic changes in policies and practices, which the review emphasised. A number of reforms, such as those pertaining to curriculum, teacher training, and the use of educational technology, were critically examined as part of the process. The study's overarching goal was to offer a thorough evaluation of these reforms' efficacy and the variables that affected their results. In order to provide a comprehensive assessment of the reforms' efficacy, the review focused on how these educational changes affected student performance using measures like graduation rates, standardised test scores, and qualitative evaluations. Educational reforms' efficacy is influenced by socio-economic gaps, cultural variables, and infrastructure challenges, according to the findings. Through an examination of these intricate elements, the review enhanced our comprehension of the interplay between policy proposals and their varied implementation environments.

Lomo, Abonyi, and Ahwireng (2024) carried out a study with the purpose of examining the problems that head teachers have when attempting to give support for the incorporation of information and communication technology (ICT) into teaching and learning within Ghanaian basic schools. The research was conducted using a qualitative research approach. The data collected through interviews were analyzed using thematic analytical techniques. The results revealed that head teachers played a supportive role in the integration of ICT by organizing and facilitating ICT-related training for teachers, overseeing and supervising teachers' use of ICT, procuring and mobilizing ICT infrastructure, and ensuring the maintenance of these resources. The study found that despite these efforts, several challenges impeded the head teachers' ability to support ICT integration effectively. The challenges included limited funding for the acquisition of ICT equipment, insufficient support from stakeholders in making ICT resources available, difficulties associated with teacher training, the lack of essential infrastructure like electricity and internet connectivity, and the high costs associated with maintaining ICT infrastructure.

In a study that was done by Gichuru (2024), an in-depth investigation of the difficulties that teachers face when implementing CBC at the junior secondary school level in Kenya was carried out. There were 940 teachers from junior secondary schools in Nyeri County, Kenya, who participated in the study. The research was conducted using a mixed-method cross-sectional survey. The findings of the study revealed significant challenges in the implementation process, with lack of administrative support reported by 88.7% of the participants, resource deficiencies identified by 85.4%, inadequate access to teaching technologies reported by 85.2%, gaps in teacher expertise highlighted by 87.8%, and difficulties in effectively assessing learning outcomes noted by 69.5% of the respondents. Further qualitative analysis provided deeper analysis into issues such as the scarcity of resources, teacher welfare concerns, the complexity of the curriculum, and geographic disparities affecting the implementation. The study recommended enhanced support for teachers, including comprehensive training programs that are in line with CBC standards and strategic interventions to address the identified challenges. The study concluded that there is urgent necessity for a collaborative approach to address the myriad challenges facing CBC implementation in junior secondary schools in Kenya. The study called for curriculum revisions, innovative assessment strategies, and further research into the effectiveness of tailored teacher training.

2.2.4 Teacher capacity building on learners' outcomes

Desimone and Garet (2015) reviewed the best practices for teacher professional development (PD) in the United States (US). The authors argued that effective teacher PD is critical to improving student learning outcomes and closing achievement gaps. The article outlined five essential aspects of successful teacher professional development: emphasis on subject matter, interactive educational experiences, logical connection, time allocation, and group involvement. Addressing the initial aspect, which is content focus, emphasizes the importance of aligning PD with specific content standards and student learning goals. The second feature, active learning, suggests that effective PD should engage teachers in hands-on activities, discussion, and reflection, rather than passive listening. The third feature, coherence, highlights the importance of integrating PD with on-going professional learning opportunities and school improvement efforts. The fourth feature, duration, suggests that effective PD requires sufficient time and support to allow for sustained learning and implementation. Finally, the fifth feature, collective participation, emphasizes the importance of collaboration and shared learning among teachers, as well as the involvement of school leaders in supporting and promoting teacher PD.

Chaudhary (2015) highlighted that the execution of the curriculum is influenced by a range of elements, including educators, students, ideological factors, and cultural education. The study also unveiled that the government supplied tangible resources such as sports facilities, workshops, libraries, classrooms, laboratories, and recreational areas. To facilitate the establishment of a conducive curriculum environment, proper implementation entails equipping the central government with essential facilities like workshops, libraries, classrooms, laboratories, and sports areas. Chaudhary also highlighted that the effective execution of the curriculum was notably impacted by the availability of superior resources and suitable facilities.

Hipolite (2019) conducted research to study the difficulties that are often encountered while attempting to adopt a CBC at public high schools that are located in Morogoro Municipality, Tanzania. The investigation utilized a case study framework in conjunction with qualitative methods, collecting information from a total of thirty-six respondents through the use of observations, one-on-one interviews, and focused group interactions. The findings brought to light the fact that educators were confronted with a multitude of challenges that hampered their ability to successfully implement the curriculum. These difficulties included classrooms that were

significantly overcrowded, a lack of proper teaching materials, and teachers who did not have a good understanding of the CBC idea. The research advised that the Tanzanian Ministry of Education should take measures to ensure that schools have an abundant supply of instructional resources and that they provide substantial ongoing training for all instructors. This would be a resolution to the problem.

By aligning their research design with the Expectancy Theory of Motivation, Mumo, Munguti, and Nzioki (2024) sought to provide empirical evidence regarding the effectiveness of teacher capacity building initiatives in enhancing the implementation of performance appraisal systems within the educational context of Mbooni East Sub-County. This empirical review establishes a foundation for understanding the dynamics between teacher capacity building and performance appraisal implementation, contributing valuable insights to educational policy and practice in Kenya and potentially beyond. As opposed to qualitative analysis, which was thematically grouped in accordance with the study purpose and presented in a narrative fashion, descriptive statistics were utilized in order to assess quantitative data. Based on the findings, it was discovered that the implementation of performance evaluations in public secondary schools in Mbooni East Sub-County was highly influenced by the capacity building for teachers. According to the evidence, there were a number of different seminars and workshops that were devoted to capacity building. These events involved a number of different stakeholders from the educational sector, both from within the schools and from outside the schools. After doing the research, the researchers came to the conclusion that increasing the ability of teachers is essential for improving the efficiency of performance evaluation procedures in Kenyan public secondary schools.

Furthermore, Komba and Mwandangi (2015) investigated problems related to CBC implementation in Tanzanian secondary schools. The investigation's conclusions revealed that a sizable portion of teachers 86% to be exact did not possess a sufficient degree of curriculum knowledge. Additionally, the study highlighted the fact that teachers' participation of students in classroom activities was often poor, and that less than half of the teachers who were observed did formative assessments. This percentage was reported to be less than fifty percent. On the basis of these findings, the researchers came to the conclusion that the selected schools did not have a successful implementation of CBC. They suggested that in-service instructors participate in frequent training sessions as a solution to the problem. This would ensure that they acquire up-to-

date teaching techniques that are in line with the modifications that were implemented in the curriculum.

The study by Whitelock, Goshtasbpour, Pitt, Ferguson and Cross (2024) delved into the complexities of enhancing capacity for digital education, a domain also known as technology-enhanced learning (TEL), within the sphere of Higher Education. The study presented perspective on the system of digital education, which is characterized by the interplay among various elements such as individuals, technologies, and resources. This complexity is further amplified by the interdependent nature of these elements, encompassing interconnected information technology resources, digital content, diverse forms of student feedback, and the multitude of technologies and human actors involved. The study advocated for the meticulous management of this elaborate system's growth, emphasizing the significance of mapping out the interdependencies among its components. Such mapping clarifies essential processes and elucidates the flow of information and data across different segments of the digital education ecosystem. Importantly, it also identifies gaps within the system where connections are absent, hindering the exchange of knowledge and data. Drawing from their previous work on the challenges and opportunities presented by the Covid-19 pandemic, Whitelock *et al.* (2024) highlighted the necessity for tailored introductions to novel devices and pedagogical approaches. They argue that such introductions are foundational to capacity-building initiatives that aim for controlled and effective growth in the digital education sector. This paper underscores the critical need for strategic interventions and capacity-building efforts to navigate and enhance the complex system of digital education in Higher Education contexts.

Ashiono (2018) investigated the elements that impact on the incorporation of Information and Communication Technology (ICT) in educators' instruction of numeracy skills, a mixed-methods approach was utilized. The research began by gathering quantitative information, followed by the implementation of exploratory sequential methods to gain a more profound understanding of the matter. The study's outcomes highlighted that a mere 4% of teachers utilized ICT as a regular tool for teaching numeracy concepts. The study's overarching conclusion was that the utilization of ICT by teachers for teaching numeracy skills in lower primary schools was insufficient. The research identified a lack of adequate preparation among teachers to effectively employ ICT in teaching numeracy concepts. Additionally, the study uncovered that the availability of laptops and

tablets to both teachers and students within schools played a pivotal role in fostering increased utilization of ICT for teaching numeracy skills.

Ngeno, Sang, and Chemosit (2020) studied many primary schools in Ainamoi Sub-County, Kericho County, Kenya, to determine the degree of computer literacy among teachers. Computer teacher training was completed in May of 2015, although not all department teachers were interested in it, according to this report. Two lower-level primary school teachers who were up-to-date on ICT regulations were the thinking behind this. In a study conducted by the Instructors Service Commission (TSC) after 2006, it was discovered that all instructors were computer literate, including those who graduated from teacher training colleges in 2009. All educators employed after 2006 were subject to this requirement. According to the findings of the study, educators ought to be ready to acknowledge and adjust their methods of instruction and learning to accommodate contemporary technologies. It was also noted that in order to improve instructors' computer skills, information and communication technology (ICT) services and computer training should be improved. The Kenya Institute of Curriculum Development ought to initiate the development of a digital programming subject guide in order to enhance students' familiarity with computers. KNEC ICT examinations that are possible to be examined ought to be administered in institutions that train teachers.

In Kenya, a survey was carried out by Momanyi and Rop in 2019 within Bomet East Sub-County. The aim of this survey was to identify the difficulties that teachers encounter while putting the CBC into practice. The findings demonstrated that the primary obstacle to the successful execution of the CBC was the insufficient knowledge and expertise of teachers in terms of curriculum implementation. This initiative would serve to address gaps in their proficiency related to teaching methods, assessment techniques, and the creation of instructional materials. Essentially, this implies that if teachers do not possess the necessary knowledge and skills concerning the CBC, they will encounter difficulties when attempting to implement the curriculum.

Capacity building for head teachers was carried out through a variety of approaches, including seminars, workshops, short courses, and training courses, according to the findings that were obtained from the first objective. This was in relation to the second purpose of the study. The third objective's findings showed that trained head teachers consistently outperformed their untrained counterparts across all evaluated factors. The study concluded that capacity building for head

teachers plays a crucial role in enhancing pupils' academic performance. Consequently, the study recommended that the government allocate specific budgetary provisions for the capacity building of head teachers, underscoring the importance of such programs in elevating educational standards and outcomes in primary schools.

The barriers that prevented the effective implementation of CBC in Kenya were studied by Sifuna and Obonyo (2019). According to the research, there was no clear strategy or method for implementing the curriculum. There wasn't enough preparation for teachers in terms of both course material and pedagogical practices. In order to tackle these challenges, the report recommended that the Ministry of Education establish a thorough plan to improve teacher training, increase parental awareness, and guarantee that all schools have sufficient classrooms and teaching materials. This underscores the significance of proper teacher training, parental engagement, and sufficient teaching resources for the effective implementation of a curriculum. While these findings were primarily focused on lower primary grades, their applicability to the pre-primary section remained uncertain, highlighting the need to investigate whether similar challenges exist among teachers in public pre-primary schools.

Alfa (2018) emphasized the diverse interpretations of capacity building among organizational managers, highlighting its significance as both a means for development and a goal in itself. This perspective necessitates a structured analytical framework to harmonize understanding among educational stakeholders. Kashu (2020) further enriches this concept by associating capacity building with a broad spectrum of elements. In addition to performance enhancement, scaling up, sustainability, involvement, training, and accountability are also important. Building on these insights, Kashu (2016) articulates four pivotal characteristics of capacity building for organization managers, underscoring the essence of empowerment and identity, and the collective endeavour of individuals to assert control over their lives. This conceptualization frames capacity building as a process that not only enhances the collective capability of an organization to perform, deliver value, and foster relationships but also ensures its continual renewal and adaptation. This holistic view positions capacity building as a critical factor in organizational success, emphasizing the interplay between individual empowerment and systemic capability in achieving sustained organizational performance and growth.

Odit, Okumu, Lajul, Opio, and Omara (2024) conducted whose purpose was to investigate the influence that external factors have on the efficacy of teachers and, as a consequence, on the academic accomplishment of students attending secondary schools that receive financing from the government in the Lira District of Uganda. The study addressed the persistent challenge of academic performance in northern Uganda, attributed to teacher ineffectiveness despite government initiatives. The results demonstrated a strong positive correlation between external school factors and teacher effectiveness, with these factors accounting for 55.6% of the variation in teacher effectiveness linked to academic achievement. Qualitative insights further supported the significant impact of external factors on teacher performance. The research underscored the essential role of external school factors in enhancing teacher effectiveness and improving student learning outcomes. It called on the government and policymakers to adopt a balanced strategy to support better academic achievements and recommended further exploration of these dynamics in tertiary education settings to expand understanding across diverse educational contexts.

Numerous obstacles confront educators in the implementation of the CBC. KNUT (2019) highlighted these challenges, revealing that the adoption of CBC in schools faced significant hurdles. These challenges encompassed issues such as overcrowded classrooms due to an overwhelming number of students enrolled, compounded by a lack of permanent classroom infrastructure. This scarcity of classrooms has compelled institutions to merge learners from different grades. The study indicated that a substantial portion of public schools lacked dedicated classrooms for levels PP1 and PP2, resulting in learning taking place under temporary shelters or even trees. Additionally, KNUT's findings indicated that a majority of CBC subject areas suffered from a shortage of approved textbooks and materials, aggravated by delays in the government's distribution of essential learning resources to schools. The report also brought to light the fact that the assessment rubrics employed in CBC had unclear guidelines, posing a significant challenge for teachers in evaluating learners' competencies and monitoring their educational progress. Lastly, the report highlighted the inadequacy and inefficiency of CBC training sessions, which were of insufficient duration and lacked effective engagement. Moreover, there was a notable absence of collaboration with relevant stakeholders in the rollout of the CBC initiative.

Nyaaba, Abdul-Gafaar, Akulga and Kwakye (2023) conducted a study to evaluate the effects of Continuous Professional Development (CPD) on teachers in the colleges of education in Northern Ghana, with a focus on its impact on student satisfaction, academic achievement, and classroom

engagement. The study indicated the significance of CPD in creating an effective learning environment that promotes higher student satisfaction, achievement, and engagement in the classroom. The study recommended that policy formulations regarding resource allocation should emphasize support for teachers in areas such as classroom management, career advancement, and enhancement of teaching skills through CPD programs, highlighting these as key to elevating students' academic success in the colleges of education in Northern Ghana.

Sitenei's (2020) research delved into the impact of school-related aspects on the execution of the CBC within primary schools located in Kibera Sub-County, Kenya. The outcomes revealed that a significant proportion of instructors (81.6%) participated in a one-week training program, while a smaller fraction (18.4%) engaged in a two-week training. This discrepancy indicated that most educators lacked comprehensive training regarding the new curriculum. Moreover, the study highlighted that the time allotted for CBC lessons was insufficient due to the considerable size of the classes. Additionally, the investigation noted a scarcity or inadequacy of materials necessary for implementing the curriculum across most schools in Kibera Sub-County. The findings also confirmed the prevalent issue of overcrowding in public primary schools within Kibera, due to overly populated classrooms that even forced some students to study outdoors, particularly during practical subjects requiring demonstrations. This circumstance negatively impacted the curriculum's effective execution. With a high teacher-pupil ratio of 1:80, educators faced considerable challenges in maintaining student discipline, facilitating teaching and learning, and adapting their teaching methodologies. While the study addressed various obstacles impacting the implementation of CBC, it focused exclusively on the lower primary grades. Therefore, it became crucial to explore the difficulties that pre-primary teachers encountered in effectively executing the curriculum.

A study conducted by Amunga, Were, and Ashioya in 2020 aimed at identifying the aspects of the CBC that required parental engagement and the difficulties encountered during its execution. The results indicated a deficiency in cooperation between parents and schools when it came to executing the curriculum. Most parents were hesitant to provide the necessary materials for practical lessons. The educators also encountered several obstacles in implementing the curriculum, including insufficient resources, limited parental support, inadequate lesson preparation time, and oversized class groups. Based on the outcomes, the study suggested initiatives such as raising awareness among parents, increasing government funding for

constructing additional classrooms, and hiring more teachers. Evidently, teachers confront numerous hurdles while executing the curriculum. However, it is important to note that the challenges highlighted in the aforementioned research predominantly stemmed from primary school teachers in lower grades. Consequently, the key inquiry revolved around identifying the challenges that teachers in public pre-primary schools encounter when implementing the CBC.

A research undertaken by Marion (2020) revealed several significant challenges faced by teachers. One major obstacle was managing large class sizes, which hindered effective CBC delivery in public schools. Additionally, teachers reported a lack of instructional resources, particularly for subjects such as Music and digital literacy, making it difficult to advance in these areas. Many teachers also struggled to incorporate digital literacy, problem-solving, and critical thinking skills, as they were still developing these competencies themselves and lacked adequate materials for digital learning. Although most lesson plans were CBC-aligned, teachers felt that the training provided was insufficient in both duration and depth. The study recommended improving classroom infrastructure, increasing teaching resources, and offering consistent, comprehensive teacher training. While these findings point to the challenges of CBC implementation in lower primary grades, further research was suggested to understand potential issues unique to pre-primary education.

2.2.5 Teaching methodologies on learners' outcome

Meta-analysis study by Sugano and Mamolo (2021) was on the impact of various teaching methodologies on students' attitudes and motivation towards learning, focusing specifically on chemistry education research in the Philippines between 2015 and 2016. The analysis incorporated 14 studies that satisfied the meta-analysis inclusion criteria, categorizing identified teaching methods into treatment groups to serve as independent variables. The findings revealed a significant positive effect on students' attitudes through the application of innovative teaching methodologies, as opposed to a non-significant impact on motivation. The study also found that cooperative learning methods performed better than traditional teaching approaches in creating a positive attitude and increasing students' interest in learning chemistry.

Nodine (2016) explored the historical development of competency-based education (CBE) in the United States, tracing its origins to the early 20th century. During this period, educators began exploring alternative approaches to assessment and learning that prioritized mastery of specific

competencies over the traditional completion of fixed coursework. The article outlined the progression of CBE, emphasizing significant milestones such as the founding of the Council for Adult and Experiential Learning (CAEL) in the 1970s. This organization played a pivotal role in advancing CBE programs within higher education, shaping their growth and widespread adoption. The author also discussed the emergence of online learning and other technological innovations, which have enabled the growth of CBE programs and made them more accessible to students. The article explored the benefits and challenges of CBE, including its potential to promote more flexible and personalized learning experiences, as well as concerns about the quality of assessment and the potential for CBE to perpetuate inequalities. The author also discusses current trends in CBE, such as the emergence of micro-credentials and the growing emphasis on workforce development and career readiness.

Billiah, Christine and Jared (2019) studied the Lang'ata Sub-county's public and private secondary schools' Kiswahili classes in 2019 to see how various teaching methods affected the students' grades. The research design includes a combination of diverse approaches to investigate the connection between instructional tactics and student performance in Kiswahili. A total of 234 participants, including principals, Kiswahili teachers, and students from 18 secondary schools in Lang'ata Sub-County, made up the research's diverse sample. Interviews with principals and surveys with instructors and students were used to gather data. Subsequently, we conducted a thematic examination of the qualitative data and a quantitative analysis using SPSS version 20. The results showed that most professors still rely on the tried-and-true methods of lecturing, working in groups, and Q&A sessions, while using less common approaches like guided learning, role-playing, and demonstrations. Students' positive and negative reactions to these approaches to teaching Kiswahili led researchers to conclude that pedagogical choice significantly influences students' Kiswahili academic performance.

Tilya and Mafumiko (2018) investigated how well the teaching techniques employed in schools in Tanzania align with the newly introduced competence-based curriculum. The authors contended that the fresh curriculum underscores the need for nurturing competencies like critical thinking and problem-solving skills, necessitating a transition from conventional teacher-centered methodologies to methods that engage students more actively and center on their involvement. The article explored the hurdles tied to the implementation of the competence-based curriculum in Tanzania, including constraints in resources and teacher training, as well as resistance from

educators accustomed to traditional teaching approaches. The authors also underlined the significance of harmonizing instructional approaches with the curriculum to ensure effective learning results and to stimulate student participation and enthusiasm. The study shares the results of a survey carried out among teachers in Tanzanian secondary schools, which sought to gauge the congruence between their teaching methods and the competence-based curriculum. The findings suggest that although many teachers are familiar with the new curriculum and its emphasis on competency development, they persist in utilizing traditional teaching techniques that prioritize rote learning and memorization.

Tsisindu, Joel and Edward (2016) carried out a research project with the objective of investigating the effectiveness of various teaching and learning strategies that were used in order to cater to the educational requirements of primary school kids in Kenya who held special requirements. The study included a coordinator who was linked with the Educational Assessment and Resource Centre (EARC), as well as nine hundred and ninety school principals and one thousand nine hundred teachers. A random sampling procedure was used to pick 18 school principals and 200 educators for the purpose of data collection. The researchers first classified schools into different zones in order to collect the necessary information. It was via the use of purposive sampling that the EARC coordinator was selected. The results of the study showed that teachers do not possess the necessary skills to properly meet the academic requirements of students who have special needs (also known as LWSNs). Moreover, the study revealed that these teachers rarely implement personalized education programs (IEPs) to address the individualized needs of the students.

Tumwebaze (2021) conducted a research project with the aim of examining how the constructivist teaching method affects students' achievements within Uganda's CBC. The research employed a combination of qualitative and quantitative techniques to gather information from both educators and students. The study involved 84 teachers and 421 students from 7 secondary schools in Uganda as participants. According to the findings of the study, the implementation of constructivist instructional strategies had a beneficial impact on the outcomes of learners in the CBC. To be more specific, the research discovered that the implementation of constructivist instructional strategies resulted in improvements in the learners' abilities to engage in critical thinking, problem-solving, and collaborative learning. The study also found that teachers who used constructivist teaching approaches were better able to engage learners in the learning process, leading to better academic performance.

A research project that was carried out by Abiero and Nyagowa (2021) with the purpose of investigating the relationship between the instructional strategies utilized by teachers and the academic achievement of students in Kenya who were following the Competency-Based Curriculum (CBC). A descriptive survey approach was adopted for the research, and questionnaires were distributed to a total of 221 teachers and 369 students from 18 different secondary schools in order to collect information. Both descriptive and inferential statistical methods were utilized in order to conduct an analysis on the data that could be collected. The study revealed a high correlation between the implementation of student-centered teaching practices by teachers and enhanced academic achievement among students in CBC. Conversely, there was a detrimental link observed between instructors' utilization of teacher-centered instructional approaches and the academic performance of students in Canadian Borders (CBC). Hence, to enhance students' academic performance, the study proposed that teachers utilize student-centered instructional methodologies when teaching language and communication skills (CBC). Policymakers, school administrators, and teachers who are adopting CBC in Kenya and other countries in Africa can benefit from the findings of this study since they should be taken into consideration.

The investigation carried out by Muteti and Kalui (2021) explored the correlation between the instructional approaches employed by educators and the academic achievements of students in mathematics under Kenya's competency-based curriculum (CBC). The research adopted a descriptive survey methodology and collected information from 128 math teachers and 384 third-year students through a questionnaire. The survey contained closed-ended inquiries targeting both teachers' pedagogical techniques and students' accomplishments in CBC mathematics. The findings revealed that teachers utilized diverse teaching methodologies for CBC math, encompassing inquiry-oriented instruction, problem-centered instruction, and collaborative tasks. Nonetheless, a predominant proportion of teachers relied on the lecture method, which was associated with detrimental effects on student performance. In contrast, inquiry-based teaching emerged as a favourable contributor to students' success in CBC mathematics.

In order to find out how different teaching methods affected the academic performance of primary school pupils in District Buner, Ali, Ghaffar, and Shahzad (2024) undertook a study. The study's overarching goals were to(1) determine which teaching tactics are most effective in raising student achievement,(2) compare the efficacy of these strategies across student demographics, and(3)

determine what kind of assistance educators need to implement evidence-based pedagogy. Data was collected from 50 instructors and 150 students in the study using questionnaires. A causal selection strategy was used to determine the model scope, and the Krejci and Morgan table was utilised. Teaching strategies had a considerable impact on students' academic achievement, according to the analysis, which used descriptive and inferential statistics. This highlights the importance of providing instructors with resources and ongoing professional development to promote evidence-based teaching methods. In order to improve student results, the study recommended that educators be given opportunities for continual learning so that they can apply effective teaching practices.

In a separate study, Byiringiro (2024) looked at how the cooperative learning approach affected maths grades in Rwandan public secondary schools, most especially in the Karongi District. The results showed a strong correlation between the cooperative learning strategies and the students' mathematical achievement. This provides strong evidence that cooperative learning significantly increased students' performance in the classroom. Further evidence of cooperative learning's essential role in raising students' mathematical accomplishment came from multiple linear regression analysis, which found that it explained 71.9% of the variation in performance. The study concluded that students' academic performance and attitude towards the subject will be greatly improved by involving them in cooperative learning situations.

2.2.6 Assessment criteria on learners' outcome

The purpose of the research that Villamero (2014) carried out was to investigate the methods that three ordinary primary school teachers in Negros Oriental, Philippines used to evaluate children with disabilities in regular classroom circumstances. Through the use of a constructivist methodology, the researcher conducted a qualitative investigation into the perspectives of the educators. It was determined through this inquiry that two constructivist methodologies were utilized: semi-structured interviews and direct classroom observations. The evaluation techniques employed by the teachers were in line with diagnostic, formative, and summative assessment objectives. These encompassed the use of tests, observations, portfolios, and group activities. The results highlighted the necessity for teachers to utilize a variety of assessment approaches when evaluating students with special needs. Additionally, the teachers customized the content and delivery of these assessment strategies to suit the specific needs of students with disabilities.

In the research that Kuyini and Major (2012) carried out, the primary objective was to investigate the functions and purposes of the Botswana Assessment Centre in the context of determining the educational requirements of elementary school children. A total of forty-nine teachers who were employed in elementary schools in and around Gaborone provided their comments to the researchers. In order to gather information from these instructors, a questionnaire with thirteen questions was delivered to them. After the data had been collected, it was analyzed using numerous statistical techniques, including descriptive statistics, t-tests, and analysis of variance (ANOVA). There was a lack of clarity on the precise roles that these teams play in particular schools, according to the findings of the study, despite the fact that a substantial number of schools had School Intervention Teams (SIT) that were responsible for directing pupils towards tests.

A study by Grace, Bankong and Ayozie-Samuel (2024) aimed to explore how ongoing assessments contribute to students' learning and performance in economics, emphasizing that such assessments are tailored to the students' ages and experiences and are conducted periodically throughout the academic year. To investigate this, the study formulated three research questions and distributed a 12-item questionnaire among 360 students from three randomly selected schools, out of a total student population of 3682 across ten public secondary schools. Data analysis was performed using the mean formula. The results indicated that continuous assessment significantly enhances the validity and reliability of evaluating students' overall abilities and performances. It was also found to be an effective tool for identifying and addressing students' learning challenges promptly, facilitating targeted guidance and support. There is need for closer collaboration between parents and teachers with students to ensure thorough and effective continuous assessments, aiming to optimize students' learning outcomes and achievement of educational goals in economics.

The KICD (2017) study aimed at establishing evaluation methods for the competency-based curriculum in Special Needs Education (SNE) institutions. The research utilized a blended methodology, incorporating both quantitative and qualitative methodologies. This comprised the utilization of a wide variety of data sources, such as questionnaires, surveys, observation schedules, interviews, focused group discussions (FGDs), and memos that were submitted. The participants emphasized the importance of thorough and practical assessment in health and education early on to determine the nature and extent of disabilities, enabling accurate placement and necessary interventions. For achieving inclusive education, Educational Assessment and Resource Centers (EARCs) were highlighted as essential. The research findings revealed an

inclination towards different evaluation methods for students with special requirements. These methods include formative assessment, ongoing assessment, verbal assessment, assessment based on projects, and observation-centered assessment. Additionally, there was an emphasis on adapting assessment conditions such as timing, test content, ways of responding, font size, colour, and paper size to cater to the unique needs of individual students with special requirements. The research findings additionally highlighted the necessity of designing specialized exams for these learners and conducting early functional assessments to facilitate timely interventions.

A study by Dadzie, Surman, Annan-Brew, Ezugwu, Amponsah, and Addison (2024) revealed that neither the quality of assessments nor teachers' understanding of assessment processes had a significant effect on students' mathematics achievement. Additionally, variables such as teaching skills, subject expertise, classroom management, test design capabilities, and feedback effectiveness were found to be statistically insignificant in predicting students' success in mathematics. These findings challenge common assumptions regarding the direct impact of assessment practices on educational outcomes, suggesting that other factors may play more crucial roles in student learning and achievement in Akuapem North Municipality. The study recommended a broader approach to understanding determinants of academic performance, urging teachers and policymakers to consider various influences and specific educational contexts when developing strategies to improve core mathematics learning outcomes.

The purpose of the research conducted by Jelagat (2020) was to investigate the challenges that Educational Assessment Resource Centers in a number of counties. Through the use of a descriptive survey methodology, the research was conducted with the participation of a total of 80 Special Needs Teachers and 15 County Education Officers. These individuals were precisely selected through the process of purposive sampling. It was noted that Educational Assessment Resource Centers rarely implemented educational initiatives that specifically catered to the needs of children with special requirements. Furthermore, the research concluded that 9 out of 15 (60%) County Education Officers had an incomplete understanding of the roles played by the EARCs within their respective counties.

Tsadik, Mebrahitu and Yohannes (2024) conducted a systematic review to assess the impact of context-based assessment criteria in Chemistry on students' academic achievements. The review analyzed 10 scholarly articles sourced from databases such as ERIC, Scopus, and Google Scholar,

employing a systematic literature review (SLR) approach. These articles, which used a variety of research designs including experimental methods with both pre-test-posttest control groups and post-test only designs, quasi-experimental designs, and mixed-method research designs, collectively provided a broad examination of how embedding real-world contexts into Chemistry teaching influences student outcomes. Through data analysis techniques like independent t-tests, one-way ANOVA, and MANOVA, the review revealed a clear positive correlation between context-based teaching approaches in Chemistry and improved student achievement. This conclusion not only reinforces the value of incorporating real-life applications into Chemistry education but also offers crucial insights for educators, curriculum designers, and policy-makers looking to enhance the efficacy of Chemistry teaching. Moreover, the review recommended the necessity of further research in this domain to refine educational strategies and ultimately foster enhanced academic performance in Chemistry among students.

Vygotsky's sociocultural theory served as the foundation for Omuna's (2024) investigation of the ways in which different classroom assessment procedures influence the level of English grammar proficiency among students attending secondary schools in Kenya. With the use of a pragmatic paradigm, the research project utilized a quasi-experimental design that included both pre-tests and post-tests. Additionally, the study utilized exploratory sequential mixed methods. The research was conducted in Teso North Sub-County, with a focus on English teachers and students in form two. The research was conducted by selecting 10 schools and 509 students by stratified and simple random sampling, as well as 10 teachers chosen through purposive and simple random sampling. Interviews, observations, questionnaires, and English Grammar Achievement Tests were all used in the data collection process by the researchers. The findings indicated a predominant use of gap-filling and question-answer methods in grammar assessment. However, cloze tests and composition writing were found to be more effective, showing a positive impact on student performance in English grammar compared to methods not involving them. A significant correlation was found between assessment methods and student achievement in English grammar. Thus, superior assessment techniques for English grammar, recommending that the Ministry of Education provide teacher training on these methods to enhance grammar teaching and assessment. The study conducted by Mapunda, Omollo, and Bali (2017) aimed at examining whether an effective assessment system existed within pre-primary schools near Dodoma municipality for identifying and assisting children with special requirements. The study employed a mixed-methods

strategy, blending qualitative and limited quantitative components. The investigators acquired data via interviews and the examination of pertinent records. The results of the investigation underscored the lack of specific policy structures aimed at executing specialized educational measures for pre-schoolers in the Dodoma municipality. As a result, the mismatch between policy goals and their practical realization, both within the municipal and educational institution contexts, became conspicuous.

A study by Omwamba, Raburu and Aloka (2016) targeted 1,670 eighth graders, 500 educators, 58 principals, and a single quality assurance and standards officer (QASO). One hundred teachers, three hundred students, ten principals, and the QASO made up the representative sample for this comprehensive study. To ensure the findings were valid, we sought the opinion of university professors who are experts in the field. The study instruments' dependability was further confirmed by the Cronbach's alpha reliability test, which yielded an index of 0.77413. The study's results demonstrated a strong correlation between assessment services and eighth graders' academic achievement. In light of these results, the study's authors urged the Ministry of Education to fill elementary schools with trained guidance and counselling professionals whose sole purpose is to help pupils succeed in school. In addition, a more well-rounded approach to education in Kenyan public elementary schools may be fostered if teacher counsellors employed comprehensive counselling programmes to help pupils improve their academic performance.

2.2.7 Stakeholder awareness on learners' outcome

Talley, Schneider, and Lindquist (2016) presented a framework for stakeholder engagement in natural resource management called the Five-Feature Framework in Australia. The framework is designed to simplify stakeholder engagement and make it more accessible for practitioners, while still being effective in addressing complex issues. The Five-Feature Framework consists of five key features that are essential for successful stakeholder engagement: (1) diversity, (2) relevance, (3) transparency, (4) capacity building, and (5) feedback. The authors argued that these features should be present in any stakeholder engagement process to ensure that it is effective, efficient, and responsive to stakeholder needs. Diversity refers to the inclusion of diverse stakeholder groups in the engagement process, including those who may not have traditionally been involved in natural resource management decision-making. Relevance refers to ensuring that the engagement process is focused on issues that are important to stakeholders, and that stakeholders have a

meaningful opportunity to provide input. Transparency refers to making information about the engagement process and its outcomes available to stakeholders, while also being clear about the roles and responsibilities of all involved. Capacity building refers to providing stakeholders with the tools and resources they need to effectively participate in the engagement process.

Sturdy, Smith-Merry, and Freeman (2012) explored the process of stakeholder consultation in the development of mental health policy in Scotland. They argued that stakeholder consultation can be seen as a form of social mobilization, as it involves bringing together a diverse range of actors to shape policy agendas and priorities. The authors use the case of the development of the Scottish Mental Health Strategy to illustrate the importance of stakeholder consultation as a means of social mobilization. They argue that stakeholder consultation enabled the voices and perspectives of different stakeholders, including service users, carers, and mental health professionals, to be heard and integrated into policy development. The article also highlighted the challenges and limitations of stakeholder consultation as a form of social mobilization. The authors suggested that stakeholder consultation can be undermined by power imbalances and conflicts of interest among stakeholders, and that it may not always lead to meaningful change or transformation in policy outcomes.

Biskupek (2016) conducted a study on the impact of stakeholder power on project implementation. The article investigated the ways in which stakeholder power can affect the success of a project and how project managers can effectively manage stakeholder relationships to mitigate the negative effects of stakeholder power. The author uses a case study approach to analyse the impact of stakeholder power on the implementation of a construction project in Germany. The study involved interviewing project managers, contractors, and other stakeholders involved in the project. The article found that stakeholder power can have a significant impact on project implementation, and that the ability of project managers to effectively manage stakeholder relationships is crucial to project success. The study identified several key factors that can influence stakeholder power, including the stakeholder's level of interest in the project, their level of influence over project decisions, and their level of dependence on the project. The article also provided several practical recommendations for project managers to manage stakeholder relationships effectively, such as identifying key stakeholders early in the project, engaging stakeholders in the project planning process, and communicating effectively with stakeholders throughout the project lifecycle.

The study by Osisioma, and Onuoha, (2021) investigated stakeholder awareness and involvement in education in selected schools in Nigeria. According to the results of the study, stakeholders were aware of the responsibilities that they played in education; yet, their involvement was not as effective as it could have been. The study also discovered a substantial positive association between learners' academic achievement and their awareness of the various stakeholders in the industry. These findings led the authors to make the recommendation that stakeholders should be actively involved in education, and that schools should provide channels for stakeholder awareness and engagement in the education process in order to improve the outcomes for learners.

Nyambe (2020) conducted a study that explored how stakeholder engagement impacts the educational achievements of students in Zambian public schools. This research employed a mixed-methods strategy, incorporating both quantitative and qualitative techniques for data gathering and analysis. The study's participant pool encompassed 120 educators and 600 students from six public schools in Zambia. The information was obtained via surveys and interviews administered to teachers and students, and subsequently examined through methods involving descriptive statistics and thematic analysis. The findings of the study suggest that stakeholder involvement has a positive impact on learners' outcomes in public schools in Zambia. The study found that stakeholders, including parents, community members, and local leaders, were actively involved in school activities, which improved the quality of education provided in these schools. The study also found that stakeholder involvement positively influenced learners' academic performance, attendance, and discipline.

The research conducted by Musau and Juma (2021) looked into the impact that knowledge of stakeholders has on the academic achievement of secondary school pupils in Nairobi County, Kenya. Three hundred twenty-four students and fifty-four teachers from six public secondary schools in the county were the subjects of the study, which was carried out using a descriptive survey design. By administering questionnaires to both students and instructors, the authors were able to collect data with the purpose of determining the extent to which stakeholders are aware of the impact that academic success has. In addition to that, the study aimed to gain an understanding of the academic performance of the students. The study found that stakeholder awareness had a significant positive impact on academic performance, with students who reported high levels of stakeholder awareness scoring better in their academic performance compared to those who

reported low levels of stakeholder awareness. The researchers also discovered a notable and favourable connection between stakeholder consciousness and academic achievement.

Opoku and Kuranchie (2015) assessed the level of awareness, concerns, and preparedness among stakeholders regarding online learning in Ghana. With the growth of Information Technology (IT), educational delivery has evolved globally, incorporating online learning. However, the adoption of online learning at all education levels in Ghana remains limited. Recognizing the importance of stakeholder engagement for the successful implementation of online education programs, the study explored stakeholders' perspectives within the tertiary education sector. By using questionnaires as the primary data collection method, the research gathered empirical data from various stakeholders involved in tertiary education. The findings revealed a high level of acceptance and financial readiness for online learning among respondents. Additionally, while the study found that stakeholders possess a good level of awareness about online learning, it also identified certain concerns that needed to be addressed to ensure broader acceptance and implementation of online learning in Ghana. To enhance stakeholders' understanding and address their concerns, the study recommended the intensification of seminars, conferences, and workshops focused on online learning.

2.3 Theoretical Framework

2.3.1 Advocacy Coalition Framework

The Advocacy Coalition Framework (ACF) was developed by Paul A. Sabatier and Hank Jenkins-Smith as a model to address complex challenges, often referred to as "wicked" problems, within the realm of public policy. These problems are characterized by significant conflicts in goals, the prominence of technical disagreements, and the involvement of various stakeholders from different governmental tiers (Sabatier & Weible, 2007). The ACF operates on the premise that the processes of devising and executing policies in contemporary societies are intricate and multifaceted, that participants must mobilize both within and outside of themselves if they are to have any hope of influencing policy outcomes.

The Advocacy Coalition Framework (ACF) posits that actors within a policy subsystem such as interest groups, government agencies, and elected officials are motivated by their beliefs and collaborate to achieve shared policy goals (Sabatier & Jenkins-Smith, 1993). It is particularly effective in examining policies marked by high levels of technical complexity and significant

value-driven conflicts among stakeholders. A central element of the ACF is the concept of policy-oriented learning, which refers to the process by which coalitions adapt their strategies and refine their approaches based on experiences and insights gained over time (Sabatier, 1988). This underscores the evolving nature of policy-making, where feedback from policy implementation and external developments can reshape coalitions' beliefs and tactics. Jenkins-Smith and Sabatier (1994) expanded on this framework, highlighting the importance of scientific and technical information in fostering policy-oriented learning. They argued that such information plays a pivotal role in influencing coalition strategies and driving adjustments within the policy-making process.

The ACF has been employed by various authors to analyze a wide range of policy issues. For instance, Nohrstedt (2008) used the framework to examine the role of external shocks, such as natural disasters, in the policy process, showing how such events can lead to significant policy changes and shifts in coalition strategies. This work highlights the ACF's utility in understanding how sudden events can influence the policy landscape and the behavior of policy actors. Weible et al. (2009) applied the ACF to environmental policy, demonstrating how coalitions form around shared beliefs about environmental issues and how these coalitions influence policy outcomes. Their research underscores the importance of belief systems in shaping coalition actions and policy directions.

The Advocacy Coalition Framework (ACF) has proven valuable in comparative policy analysis across diverse countries and policy areas. Schlager and Weible (2007) examined water policy in the United States and the Netherlands, demonstrating how the ACF can be adapted to different institutional contexts to explain variations in policy outcomes. Their study highlights the framework's versatility in analyzing policy processes across varying settings. Similarly, Cairney and Heikkila (2014) utilized the ACF to explore public health policy, focusing on areas such as tobacco control and public health nutrition. Their research underscores the framework's applicability to a broad range of policy domains and its capacity to address the complexities of policy-making in sectors with significant public health implications. By emphasizing the role of beliefs and policy-oriented learning, the ACF provides insights into how policies evolve and how actors navigate complex policy environments. It highlights the importance of coalition formation and the strategies employed by coalitions to achieve their objectives. By examining the interactions

among diverse stakeholders within a policy subsystem, the ACF offers a robust tool for analyzing the intricate and dynamic nature of policy-making.

The Advocacy Coalition Framework (ACF) has been effectively applied in the education sector to understand how various stakeholders, including educators, policymakers, parents, and advocacy groups, come together to influence education policy (Sabatier & Weible, 2019). These stakeholders form coalitions based on shared beliefs and values about education, such as the importance of standardized testing, school choice, or inclusive education. These coalitions then engage in a complex policy-making process, where they navigate conflicts, negotiate compromises, and work towards the implementation of policies that reflect their educational philosophies (Koebele, 2019). The framework presents the role of policy-oriented learning, where coalitions adapt their strategies based on the outcomes of educational policies and new evidence. This approach provides a comprehensive view of the dynamics at play in education policy reform, showing how deeply held beliefs and the capacity for learning and adaptation among coalitions drive policy change in the education sector.

Critics argue that the ACF oversimplifies the actors involved in policy borrowing within education. It tends to assume homogeneity within advocacy coalitions and overlooks internal divisions, power struggles, and the intricate nuances of individual beliefs and preferences (Sabatier & Jenkins-Smith, 1993; Howlett & Rayner, 2013). A study by Sabatier and Jenkins-Smith (1993) on policy change and learning highlighted the need to consider a broader range of perspectives within advocacy coalitions to provide a more accurate understanding of policy borrowing processes in education.

Also, the ACF may not sufficiently account for external influences on policy borrowing in education. While it focuses on internal coalition processes, it often neglects the broader political, economic, and social contexts that shape policy outcomes. Understanding these external factors is crucial in comprehending the dynamics of policy borrowing in education (Weible et al., 2009; Steiner-Khamsi, 2006). Weible, Sabatier, and McQueen (2009) argue for the inclusion of external influences to enhance the applicability of the ACF and provide a more comprehensive analysis of policy borrowing.

Further, the ACF has been criticized for its tendency to overlook non-coalition actors in policy borrowing in education. By primarily focusing on advocacy coalitions, the framework may neglect

the influence of key factors such as bureaucrats, interest groups, and individual policymakers who play pivotal roles in policy borrowing processes (Jenkins-Smith & Sabatier, 1994; Meek, 2015). Jenkins-Smith and Sabatier (1994) emphasize the importance of evaluating the ACF's treatment of non-coalition actors to provide a more comprehensive understanding of policy borrowing dynamics in education.

The ACF's applicability across different policy contexts in education may be limited. Its effectiveness in explaining policy change through borrowing may vary depending on the level of fragmentation or contentiousness within the education sector. Weible and Sabatier (2005) note that policy networks in education can differ significantly, and the ACF may require modifications to better capture the complexities of policy borrowing in diverse educational settings. Additionally, Dolowitz and Marsh (1996) emphasize the importance of considering the specific institutional and cultural contexts in policy borrowing processes in education.

This phenomenon of specialization takes place within policy subsystems, which consist of individuals who consistently strive to impact policy within that particular subsystem, such as Teacher's unions- like KNUT and KUPPET, Teacher Service Commission, Parents' Associations among other formations in the education sector. In this study, ACF was considered applicable to the extent that it aims to establish how collective belief systems among major stakeholders (with their different and often conflicting beliefs) in relation to the introduction of the Competency-Based Curriculum policy has an impact on the educational achievements of learners attending public primary schools.

2.3.2 Policy Transfer

This framework was initiated by Bennet (1991) and later expounded by Dolowitz and Marsh (2000). The foundation of this framework rests on the idea that while education has traditionally been under the authority of local regions and still is, the significant influence of worldwide advancements and patterns greatly affects education in our highly interconnected modern era. Similarly, another assumption of this framework is that forces beyond the jurisdictions of the nation states shape and define the outcomes of domestic policies.

One critique of policy transfer theory is its tendency to overemphasize transferability while neglecting the importance of context. Scholars such as Béland and Howlett (2016) argued that policy transfer theory often assumes that policies can be easily transferred across different contexts

without adequately considering the unique political, social, and cultural factors of the receiving context. This oversimplification can limit the theory's applicability and understanding of policy dynamics in real-world settings. Examining the local context is crucial to understanding how policies are shaped, implemented, and adapted, and the theory should account for the complexities and idiosyncrasies of each context.

Another critique of policy transfer theory is its insufficient consideration of power dynamics within the policy transfer process. Dolowitz and Marsh (2000) argued that policy transfer is not solely a technical exercise but a fundamentally political one. The theory often overlooks the interests, motivations, and power relations among actors involved in the transfer process. By neglecting power dynamics, the theory fails to capture how certain policies may be selectively transferred or imposed, leading to potential inequities and policy outcomes that favour certain actors over others.

Some scholars criticize policy transfer theory for its limited focus on policy outcomes. Stone (2004) argues that the theory tends to prioritize the process of policy transfer itself, rather than examining the actual impacts and effectiveness of the transferred policies. This narrow focus overlooks the importance of evaluating whether transferred policies achieve their intended goals and whether they are suitable and effective in the receiving context. To enhance the theory's relevance and practical implications, a greater emphasis should be placed on assessing the outcomes and consequences of policy transfer.

Policy Transfer involves the process where knowledge, ideas, and experiences from one context are used to influence policies in another context. This concept is crucial in education, where successful strategies can significantly impact student outcomes and overall educational quality. The current study presents a practical example of policy transfer. This approach focuses on developing specific competencies in students, such as critical thinking and problem-solving skills, rather than merely emphasizing content knowledge (Orodho, 2014; KICD, 2017). By adopting and adapting strategies from other successful implementations globally, the Kenyan education system aims to enhance learners' outcomes.

In Makueni County, the implementation of the CBC policy was influenced by similar reforms in countries like Canada and Finland, known for their progressive educational systems (Sahlberg, 2011; Ontario Ministry of Education, 2016). These nations have demonstrated that competency-based approaches can lead to improved student engagement and achievement (Darling-Hammond,

2010; Fullan, 2013). Drawing from their experiences, Kenyan policymakers tailored the CBC to fit local contexts, acknowledging the importance of cultural and socio-economic factors in educational success (Njeng'ere, 2016).

The effectiveness of policy transfer, particularly in the case of Makueni County, hinges on the thoroughness of the adaptation process. It's not merely about adopting foreign policies but adapting them to local needs and contexts (Dolowitz & Marsh, 2000). The Kenyan experience underscores the importance of involving local educators, parents, and policymakers in the adaptation process to ensure the curriculum is relevant and sustainable (Orodho, 2014; KICD, 2017). This collaborative approach helps to address potential challenges and resistance that may arise from the implementation of new educational paradigms.

However, the success of such policy transfers also depends on the support structures in place. For instance, in Makueni County, the implementation of CBC required significant investment in teacher training, infrastructure, and learning materials (Sifuna, 2016; Orodho, 2014). These foundational elements are critical to realizing the full benefits of the competency-based approach. Without adequate support, the potential positive impacts on learners' outcomes may not be fully achieved, as seen in other contexts where policy transfer was not accompanied by sufficient resources and planning (Phillips & Ochs, 2003).

A further critique of policy transfer theory is its tendency to overlook the potential for policy learning and innovation in the transfer process. Evans and Davies (1999) argue that policy transfer should be seen as a dynamic and interactive process that involves mutual exchange and adaptation between the source and target contexts. By neglecting this aspect, the theory fails to capture the opportunities for learning, creativity, and the co-creation of policies. Recognizing the importance of policy learning and innovation can enhance the theory's ability to explain the complexities and dynamics of policy transfer in practice.

In this study, implementation of Competency Based Curriculum is not only shaped by local forces and dynamics but also by lessons and experiences from implementation of similar programs across the world. Thus, through review of literature and other existing documentary evidence, this study considered how lesson drawing and policy convergence as a result of interaction with external actors shapes learning outcomes among learners in primary schools in the local context. By learning from global best practices and meticulously adapting these to the local context, significant

improvements in learners' outcomes can be achieved. However, the success of such initiatives is contingent upon comprehensive planning, community involvement, and adequate support systems. This case points to the potential of policy transfer as a tool for educational reform, provided it is approached with caution and sensitivity to local needs.

2.3.3 Street-Level Bureaucracy

The concept of the Street-Level Bureaucracy framework was pioneered by Michael Lipsky in 1980 within his publication titled "Street Level Bureaucrats: Dilemmas of Individuals in Public Services." Lipsky's work focused on illuminating the pivotal role played by front-facing public servants those professionals who directly interact with the public while carrying out their duties. This group encompasses various professionals such as educators, police officers, and counsellors. Noteworthy contributors to the evolution of this framework also include Steven Maynard-Moody and Michael Musheno, who, in their 2003 book "Cops, Teachers, Counsellors: Stories from the Front Lines of Public Service," further enriched our understanding of this concept.

These public service workers, such as police officers, teachers, and social workers, make policy decisions on a daily basis through their interactions with citizens, essentially becoming the face of government policy and decision-making to the public. These frontline workers have a significant amount of discretion in their jobs, which they use to manage the often overwhelming demands of their work and the limited resources available to them (Lipsky, 1980). The use of street-level bureaucracy has been instrumental in understanding how policies are implemented on the ground and the real-world effects they have on the population. This perspective highlights the fact that policies are not just implemented as they are designed but are interpreted and adapted by these frontline workers. For example, a teacher may have to decide how to best allocate limited resources among students, or a police officer may need to decide when to enforce certain laws strictly and when to be more lenient (Maynard-Moody & Musheno, 2003). These decisions significantly impact the effectiveness and fairness of public services.

Critics of street-level bureaucracy however point out several challenges and potential drawbacks to this system. One major criticism is the inconsistency it can create in the delivery of public services. Since frontline workers have a significant amount of discretion, two individuals in similar situations might receive different services or treatments based on the subjective judgment of the

service provider (Tummers & Bekkers, 2014). This can lead to perceptions of unfairness and inequality in public service delivery.

Another critique focuses on the potential for burnout and ethical dilemmas among street-level bureaucrats. The high demands of their roles, coupled with limited resources and the emotional toll of dealing with the public, can lead to stress, burnout, and a decrease in job satisfaction. This, in turn, can affect the quality of service provided to the public (Lipsky, 1980; Guy, Newman, & Mastracci, 2008). Furthermore, the discretion allowed to these workers can sometimes lead to ethical dilemmas, where they might have to choose between following strict policies and responding to the immediate needs of the public they serve.

Moreover, the concept of street-level bureaucracy has been critiqued for potentially reinforcing systemic biases. Since frontline workers bring their own values, beliefs, and biases to their roles, their discretionary decisions may inadvertently perpetuate social inequalities. For example, studies have shown disparities in how law enforcement officers treat individuals of different races, which can be linked to the discretionary power granted to these street-level bureaucrats (Epp, Maynard-Moody, & Haider-Markel, 2014).

One critique of street-level bureaucracy is the lack of attention given to organizational factors. Painter (2006) argued that the concept often focuses excessively on individual discretion while neglecting the influence of organizational context. This critique highlights the need to consider factors such as resource constraints, bureaucratic rules, and organizational cultures that significantly shape the behaviour and decision-making of street-level bureaucrats.

Another critique pertains to the overemphasis on individual discretion while downplaying the impact of policy mandates and organizational directives. Maynard-Moody and Musheno (2000) argued that street-level bureaucracy fails to sufficiently address the role of policy mandates and guidelines in shaping the behaviour of frontline workers. It is important to recognize that the behaviour of street-level bureaucrats is not solely determined by their individual choices but is also influenced by the policies and guidelines they are expected to follow.

Scholars have also criticized street-level bureaucracy for its inadequate attention to power dynamics and the impact of social inequalities. Painter (2006) highlighted that street-level bureaucrats may exercise discretion unequally, favouring certain groups over others based on

factors such as race, class, or gender. This critique called for a deeper examination of how power dynamics shape public service delivery and the potential for differential treatment.

Neglecting the perspectives of service recipients is another critique of street-level bureaucracy. Maynard-Moody and Musheno (2003) argued that the concept fails to fully consider the experiences and viewpoints of those receiving public services. This critique emphasized the importance of understanding the power imbalances, information asymmetry, and potential for abuse or neglect in the interactions between street-level bureaucrats and clients.

Finally, it is argued that the concept of street-level bureaucracy may have limited generalizability. Lipsky (1980) acknowledged that the dynamics of frontline work and the challenges faced by street-level bureaucrats can vary significantly across different policy domains, countries, and administrative systems. This critique highlighted the need to contextualize the understanding of street-level bureaucracy and recognize the diversity of experiences and contexts in public service delivery.

In this study, teachers were recognised as critical actors in the public policy implementation process. It is expected that their discretionary decision making, and their autonomy allows them to influence policies beyond the control of the policy makers and executives. In addition, the assumption is that they work in conditions of limited resources, and as such develop coping mechanisms to address public expectations. In this study, this framework was applicable to teachers as the main respondents in this research. Their significance in enacting the Competency-Based Curriculum is pivotal, considering the constraints posed by the availability of information, skills, capacities, and resources.

2.4 Conceptual framework

The table provided as Table 2.1 illustrates the conceptual structure, showcasing how the independent variables relate to the dependent variables. It also highlights key indicators for each proxy independent variable and the corresponding dependent variables that will be assessed in the study. The table below visually represents this framework:

**Independent Variable:
Implementation of Competency**

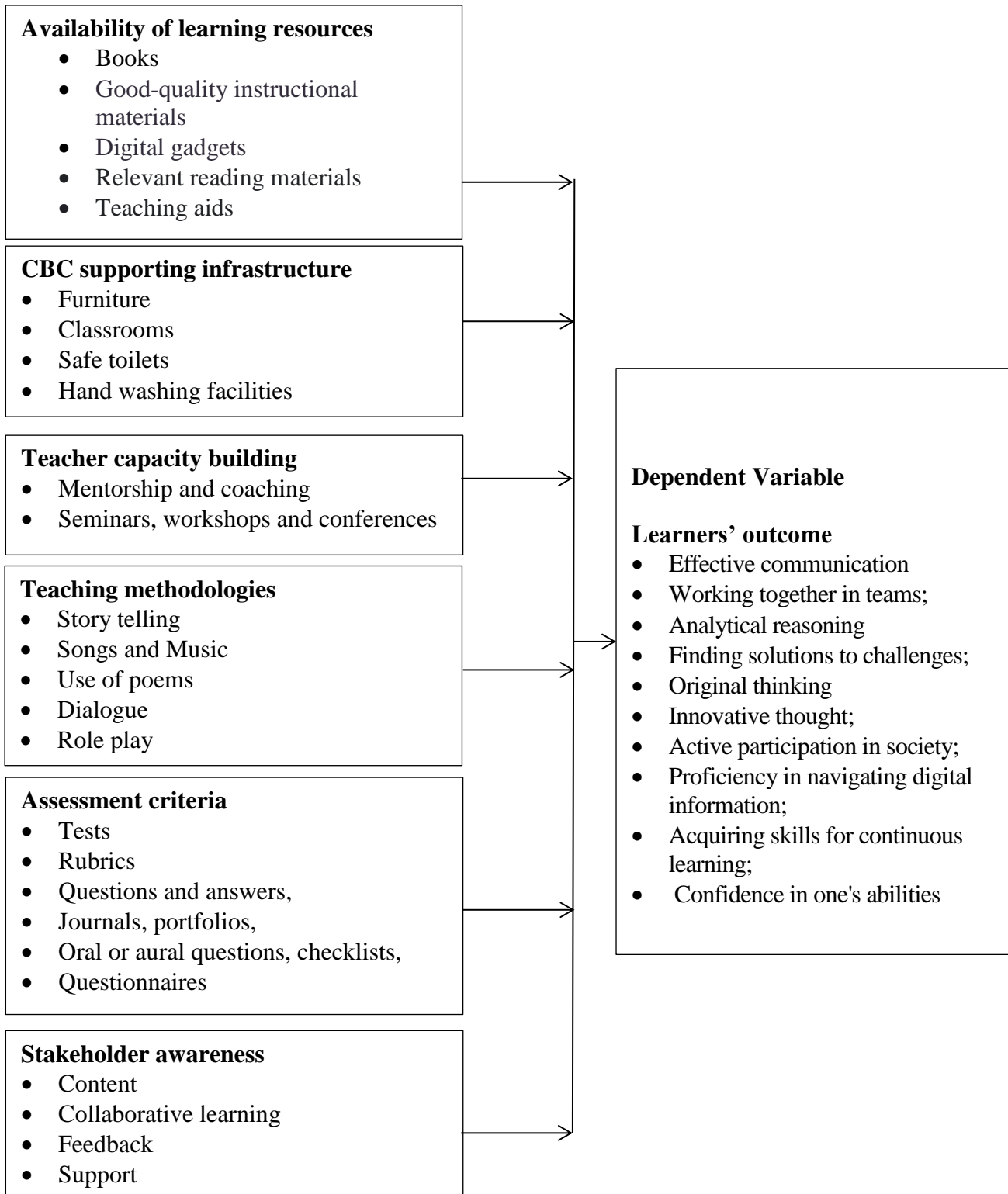


Figure 2.1: Conceptual framework

Source: Author, 2023

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section introduces the methodology employed in the research, the design chosen for the study, an overview of the geographical area under examination, the intended group for the study, the methods used for selecting samples, the tools used for collecting data, the techniques and procedures for data collection, and the planned approaches for analysing and presenting the gathered data in the study.

3.2 Research Philosophy

Research philosophy encompasses perspectives such as positivism, interpretivism, and pragmatism, each shaping how researchers view reality and evidence. Philosophy of research can be broken down into three categories: ontology, epistemology, and axiology. According to Saunders, Lewis, and Thornhill (2009), these philosophical perspectives make it possible for the researcher to determine which method should be taken by the researcher and why. This decision is drawn from the specific research questions. Philosophy of positivism, philosophy of realism, and philosophy of interpretivism are the three primary methodologies for conducting research. The Positivist philosophy proposes that the research strategy should be approached on the basis of the collecting of facts and the creation of hypotheses (Von, Bernstein, & Newton, 1951). The researcher who adheres to the positivist approach uses a methodology that is extremely regimented in order to facilitate the hypothesis. In addition, positivism is based on quantifiable observations, and statistical analysis is obtained as a result of this.

This study adopted interpretivism philosophical paradigm as best suited for this study. It was important for this study since it allowed the scrutiny of quantitative and qualitative data sets while interpreting resultant data beyond their face value (Yanow, 2007). It focuses on examining the phenomenon in their ordinary environment and the significance of qualitative factors such as shared values and norms, culture and beliefs among populations. The process of scrutinizing data sets and interpreting the results rendered facts understandable more so by interpreting their meanings in the light of relevant social goods and services (Walker, 2013), in this case, implementation of the CBC. By adopting this philosophical paradigm therefore, this study focused

on actual lived experiences of policy-relevant actors (Yanow 2007) teachers, parents, curriculum support officers, and County Directors of Education in the meanings they make from CBC implementation and the extent to which they affect learning outcomes.

3.3 Research Design

According to Lavrakas (2008), research design is the comprehensive plan that allows for the acquisition of answers to the questions that are being investigated as well as the management of some of the challenges that are faced during the process of conducting research. There is a summary of the activities that the investigator will carry out, beginning with the formulation of hypotheses and the operational implications of those hypotheses and ending with the analysis of the data. In his observation, Orodho (2009) stated that the research design is the framework, outline, or plan that is utilized in order to develop answers to research questions. It refers to the conceptual framework that is utilized in the process of conducting research.

Making use of a descriptive survey design provides an approach that is objective, comprehensive, and efficient for displaying the successful execution of a competency-based curriculum and the consequences that it has on the accomplishments of learners. This design was adopted because it was possible to carry out analysis and description of the variables thanks to the design. (2007) Kothari (2008). Hence, the structure of the research design, acting as a coherent framework, enabled the researcher to make conclusions about the cause-and-effect connections among the variables being studied.

3.4 Research Location

The study focused on public primary schools specifically located in Makueni County. An exploratory study was carried out in Kitui County. Makueni County is located in Kenya at 2.0° S latitude and 37.5° E longitude. It lies in the south eastern region of the country, bordered by Kitui County to the east, Machakos County to the north, and Kajiado County to the west. The county's capital is Wote, which serves as a central hub for governance and administration. Makueni is known for its agricultural activities and diverse environment, making it a vital area within Kenya.

The Makueni County Integrated Development Plan (CIDP 2022-2027) states that the county has a population density of 186 individuals per square kilometer.

3.5 Target Population

Target population encompasses all members who share specific characteristics defined by the research objectives, such as demographic attributes, behaviours, experiences, or conditions relevant to the study's focus. Identifying the target population is crucial for research design and methodology, as it informs the selection of participants, the development of research instruments, and the interpretation of results. This ensures that conclusions drawn from the research are relevant and applicable to the broader group of interest (Cochran, 1977; Kothari, 2004). Moreover, accurately defining the target population is essential for the validity and reliability of the study's findings, as it underpins the process of sampling and the generalizability of the research outcomes (Babbie, 2010; Rubin & Babbie, 2009). Understanding the target population also aids in addressing ethical considerations, ensuring that the research respects the rights and welfare of those it intends to represent (Israel & Hay, 2006).

The study targeted Grade 6 primary school teachers for the year 2022. This is because they were mostly involved in accompanying the first cohort of learners in their transition to junior secondary schools. Makueni County has a total population of 903 primary schools. Therefore, 903 class teachers formed the target population among the teachers. Stakeholders that included an additional 903 chairpersons of Board of Management and an equivalent number of PTA representatives were drawn from each primary school. Further, the target population also included the 41 Curriculum Support Officers and 9 sub-County Directors of Education in Makueni County (County Director of Education's office, 2023).

Table 3.1: Target population

Targeted Population	Number
Class Teachers	903
Chairpersons of Board of Management Committees	903
Parent Teachers Association Representatives	903
Curriculum Support Officers	41
Sub County Directors of Education	9

Source: County Director of Education's office, 2023.

The participants were selected because of the role they played, expertise, decision influence and practical implication. Their specific roles within the education system are directly involved in the implementation and oversight of the competency-based curriculum policy. Class teachers are responsible for delivering the curriculum in the classroom, Parent-Teachers Association are a critical contact between the school and the learners, while Chairpersons of Board of Management Committees provide governance and decision-making support. Curriculum Support Officers play a vital role in providing guidance and assistance to teachers, and Sub County Directors of Education are responsible for supervising the implementation at the administrative level. Including these stakeholders ensured a comprehensive understanding of the policy's impact.

On expertise and knowledge, class teachers, Chairpersons of Board of Management Committees, PTA representatives Curriculum Support Officers, and Sub County Directors of Education possess specific expertise and knowledge about the competency-based curriculum policy and its implementation. They have first-hand experience and insights into the challenges, successes, and overall effectiveness of the policy. By including them in the study, valuable perspectives were obtained, enhancing the credibility and depth of the research findings.

On Decision-making influence, these stakeholders hold influential positions within the education system. Class teachers directly implement the curriculum, while Chairpersons of Board of Management Committees, PTA representatives, Curriculum Support Officers, and Sub County Directors of Education hold decision-making powers and provide guidance at different levels. They were involved in the study because their perspectives and recommendations have a significant impact on policy development, revisions and improvements. .

Lastly, the knowledge acquired from these stakeholders can aid in pinpointing the successes and limitations in executing the CBC policy. . Their feedback and recommendations can inform targeted interventions, professional development programs, and policy adjustments, leading to improved learner outcomes and overall effectiveness of the curriculum.

3.6 Sample Size and Sampling Techniques

Below is the sample size and sampling procedure used in this study.

3.6.1 Sample Size

For the purpose of determining the appropriate sample size for the population of interest, Slovin's formula from 1960 was utilised. The targeted population of 903 Grade 6 teachers and 903 Chairpersons of Board of Management, 903 PTA representatives, totalling to 2709 is computed as demonstrated below:

$$n = N / (1 + N * e^2)$$

In the context of determining sample size for a study, the variables were defined as follows: n represents the intended sample size, N stands for the size of the population being studied, and e signifies the significance level, which indicates the researcher's acceptable margin of error during the sample size estimation, set at 0.1.

$$n = \frac{2709}{1 + (2709 * 0.05^2)} = 348.54 \quad \text{Thus, } n \approx 349$$

Thus, a total of 117 Grade 6 teachers, 117 PTA representatives and 117 Chairpersons of Board of Management were included in the sample. In addition, since the population of the Curriculum Support Officers (41) and Sub County Directors (9) of Education is relatively small, a census was undertaken. Thus, all the 50 of them were included in the sample.

3.6.2 Sampling Techniques

To select a subset of a population that is statistically representative of the whole, researchers use sampling procedures. The goal of these methods is to extrapolate from the chosen subset to the full group. While probability sampling ensures that the sample is representative of the population at large, non-probability sampling relies on criteria other than random chance to select samples, which may not provide every member of the population an equal chance of inclusion. These techniques vary greatly, but they generally fall into two broad categories. Stratified sampling, another probability method, divides the population into subgroups and randomly samples from each, ensuring representation across key variables (Kish, 1965).

The choice of sampling technique is crucial, as it influences the research's reliability, validity, and applicability of findings to the broader population (Creswell, 2013). The study distributed the

selected sample proportionately across different school categories to ensure that each type of school was adequately represented in relation to its size within the overall population. This proportional distribution aimed to enhance the generalizability of the findings, ensuring that results reflected the diverse characteristics within the full set of schools.

The researcher employed simple random sampling technique to identify the selected schools. This is a random sampling method of selecting n participants within N units constituting the population in a study (Kothari, 2004). To select the sample, the researcher allocated each school a unique number. In order to give a fair chance of participation in the study, a computerised electronic system was used to generate random numbers between 1 and 903, which was used to identify participating schools. Once the participating schools had been selected, class teachers of Grade 6 of 2022, PTA representatives and chairpersons of Boards of Management were included in the study.

3.7 Data Collection Instruments

Primary data was gathered from the field by use of a semi-structured questionnaire and an interview schedule. The questionnaire comprised of closed and open-ended questions. It was administered among teachers and Chairpersons of Board of Management and PTA representatives. This instrument was preferred because the population is relatively large.

Qualitative data was collected by use of interview schedules, containing open ended questions informed by all variables under this study. Interview schedules were administered among selected key informants, including 41 curriculum support officers and 9 sub county education officers. Interview schedule was preferred as a tool to collect data among key informant respondents because they provide an opportunity for the researcher to seek clarification, explore beliefs, ideas, and opinion of the respondents (Kombo & Tromp, 2006).

3.8 Variable definition and measurement

Table 3.2: Operational Definition of Variables

Variables	Variable Type	Indicators	Data type	Data collection instrument
Availability of learning resources	Independent Variable	<ul style="list-style-type: none"> • Books • Good-quality instructional materials • Digital gadgets • Relevant reading materials. • Teaching aids 	Ordinal data	Questionnaire Interview guide,
CBC supporting infrastructure.	Independent Variable	<ul style="list-style-type: none"> • Furniture • Classrooms • Safe toilets • Hand washing facilities 	Ordinal data	Questionnaire Interview guide
Teacher capacity building	Independent Variable	<ul style="list-style-type: none"> • Mentorship and coaching • Seminars, workshops and conferences 	Ordinal data	Questionnaire Interview guide
Teaching methodologies	Independent Variable	<ul style="list-style-type: none"> • Story telling • Songs and Music • Use of poems • Dialogue • Role play 	Ordinal data	Questionnaire Interview guide
Assessment criteria	Independent Variable	<ul style="list-style-type: none"> • Tests • Rubrics • Questions and answers, • Journals, portfolios, • Oral or aural questions, checklists, questionnaires 	Ordinal data	Questionnaire Interview guide
Stakeholder awareness	Independent Variable	<ul style="list-style-type: none"> • Content • Collaborative learning • Feedback • Support 	Ordinal data	Questionnaire Interview guide
Learners' Outcome	Dependent Variable	<ul style="list-style-type: none"> • Effective communication • Working together in teams • Analytical reasoning • Finding solutions to challenges • Original thinking • Innovative thought • Active participation in society • Proficiency in navigating digital information • Acquiring skills for continuous learning • Confidence in one's abilities 	Ordinal data/ratio	Questionnaire Interview guide

3.9 Pilot Study

Before the actual survey is carried out, a pilot survey was carried out in order to test both the equipment and the methods that will be used in the survey. This was done in order to determine whether or not the study instruments' validity and reliability were established. A selection of people who were comparable to those who were going to be included in the survey sample was made. A

total of 36 respondents, representing 10 per cent of the sample population (Glasgow, 2005) were recruited to participate in the pre-test.

Thus, questionnaires were administered among Grade 6 teachers of the year 2022 from 12 public primary schools from Makueni County. In the same schools, chairpersons of Board of Management and PTA representatives were included in the survey. Thus, a total of 36 respondents, representing 10 per cent of the total population was considered adequate for the pilot study. The feedback received from the schools involved in the pilot was utilized to implement essential modifications to the survey. This is done with the intention of guaranteeing that the survey effectively gathers the needed information to respond to the specific inquiries and ultimately tackle the research issue.

3.9.1 Instrument Reliability

This research assessed the dependability of measurements to guarantee precision, uniformity, steadiness, and replicability of variables and data evaluations in representing the accurate assessment score of the subject under study (Neuman, 2006). The concept of instrument reliability, as explained by Mugenda and Mugenda (2003), pertains to the capability of a research instrument to consistently measure relevant attributes across time. There was a correlation analysis performed on the data that was acquired during the pilot session. Cronbach's alpha was used to determine reliability, and a minimum internal consistency value of 0.7 was deemed acceptable. This was done in accordance with the parameters that were described in Hair, Tahtam, Anderson, and Black (1998).

3.9.2 Instrument Validity

Instrument validity reflects the accuracy with which a research tool measures the concept it is designed to assess. This concept is critical to ensuring that the data collected genuinely represent the variables or constructs being studied, thereby enhancing the credibility and applicability of research outcomes. There are several types of validity that researchers commonly evaluate. Content validity focuses on whether the instrument fully captures all aspects of the concept under investigation, ensuring that every dimension of the construct is adequately represented (Haynes, Richard, & Kubany, 1995). Construct validity, on the other hand, assesses whether the instrument truly measures the theoretical concept it claims to measure. This is often determined by examining correlations between the instrument and other established tools designed to assess the same

construct (Cronbach & Meehl, 1955). Both forms of validity play an essential role in confirming the reliability and relevance of research instruments.

. Criterion-related validity, encompassing both predictive and contemporaneous validity, evaluates the instrument's effectiveness in forecasting a result or its correlation with other established measures administered simultaneously (Anastasi & Urbina, 1997). Ensuring instrument validity is a meticulous process that may involve expert evaluations, pre-testing, and statistical analysis, which is fundamental for the reliability of research outcomes and their applicability to real-world settings (Carmines & Zeller, 1979).

In order to improve the accuracy of the study, the tools underwent a testing phase and necessary adjustments before the official data gathering process began. The assessment of content validity was utilized to gauge how well the data gathered with a specific tool accurately portrayed a particular area or aspect of a given concept. This study assessed content validity by engaging professionals and experts in this field of study as advocated by (Mugenda and Mugenda, 1999). Necessary revisions and modifications were conducted thereafter.

3.10 Diagnostic Tests

Multiple Regression Model Assumptions were conducted to ensure suitability of data for the primary assumptions of multiple linear regression models. This was deemed necessary because violation of such assumptions would result in erroneous estimation of the population parameters. The analysis involved the tests for multicollinearity, normality and heteroscedasticity as described below:

3.10.1 Multicollinearity

When discussing regression analysis, the term "multicollinearity test" refers to a diagnostic process that is utilised to evaluate the degree of correlation that exists between independent variables. This is done in order to facilitate the interpretation of the data. If the VIF for a predictor is high (typically a VIF above 5 or 10 is a cause for concern), it suggests that multicollinearity may be skewing the coefficient estimates (O'Brien, 2007). The Condition Index is another method, where values greater than 30 indicate a potential multicollinearity problem (Belsley, Kuh, & Welsch, 1980).

Detecting and addressing multicollinearity is crucial for ensuring the reliability of regression results, as it helps in deriving more accurate and interpretable findings from the data (Kutner,

Nachtsheim, Neter, & Li, 2004). Techniques such as removing highly correlated variables, combining variables, or using principal component analysis can be employed to mitigate the effects of multicollinearity (Hair et al., 1995). When the variance inflation factor (VIF) of any independent variable is more than or equal to 10 ($VIF \geq 10$), it is a sign that multicollinearity is present in the data. The presence of this assumption that was violated leads to an increase in the standard errors that are experienced. The presence of multicollinearity results in a decrease in the accuracy of the estimate coefficient, which in turn results in a decrease in the statistical capacity or power of the regression model.

3.10.2 Normality test

A test of normality was carried out with the purpose of determining whether or not the data that was obtained follows a distribution that is usual. The Kolmogorov-Smirnov and Shapiro-Wilk tests were utilised as part of the investigation in order to ascertain the natural distribution of the data that was being taken into consideration. According to Saunders and Thornhill (2012), if the estimated probability is larger than 0.05, this will indicate that the data in question follow a pattern that is consistent with a normal distribution. As a result of the fact that it does not result in inefficiency or bias in the models of regression, the misuse of the assumption of normalcy is one of the factors that is connected with a variety of consequences. For the sole purpose of computing the p values for evaluating significance, it is significant; nevertheless, this limitation is only taken into consideration in situations where the sample size is quite small.

3.10.3 Heteroscedasticity

To assess whether the error terms were consistent across the data, a heteroscedasticity test was conducted, specifically employing the Breusch-Pagan/Cook-Weisberg test. This test is designed to detect heteroscedasticity by examining whether the variance of errors differs across levels of an independent variable, which would suggest that the model's assumptions of constant variance are violated. The Breusch-Pagan/Cook-Weisberg test was performed by regressing the squared residuals from the original regression on the independent variables. A statistically significant result would indicate heteroscedasticity, meaning that the error variance is not constant, and further steps may be needed to correct this. As a consequence of the fact that an assumption was broken, there is a potential that the outcomes of the statistical analysis will be considered with scepticism. This influence is brought about as a result of the fact that heteroscedasticity has a tendency to increase

the variance of the coefficient estimates, despite the fact that the Ordinary Least Squares (OLS) method is unable to identify the rise in variance.

3.11 Data Analysis

According to Shamoo and Resnik (2003), the primary purpose of data analysis is to derive meaning and explanations from the findings of study by means of the analysis of the data. The research instruments were used to collect data of both a qualitative and quantitative nature. After the researcher had collected all of the questionnaires, he or she went through them to determine and check whether or not all of the questions had been answered. One of the main tasks of the editing process was checking for accuracy and uniformity in the responses. Information derived from organized queries were encoded to serve as input for the computer. After the validation process was completed, the conclusive information was transferred to the Statistical Package for Social Science (SPSS) for the purpose of statistical examination. The examination of numerical information took place using SPSS Version 20.0. This version offers increased adaptability, enabling the transformation of data into various arrangements. The initial dataset was retained prior to any data manipulation.

On the other hand, frequency distribution was utilized for the analysis of non-continuous variables. Calculations for inferential analysis were made with the use of the Pearson correlation coefficient and analysis, as well as multiple regression analysis. The researcher generated codes from qualitative data which was analysed thematically. Data was tape recorded, and a verbatim developed through transcription. Thereafter, emerging themes were coded, interpreted and analysed for meaning beyond face value.

This study conducted a methodical application of statistical techniques to the description of the gathered field data (Heeringa, West, and Berglund, 2017). Means, variances and SD were computed in the process of conducting descriptive analysis. Inferential analysis was used to show how the survey's factors relate to each other.

The study used both simple and multiple regression analysis to link the independent variables and the dependent variable as presented below.

Simple regression models

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon \dots \dots \dots (3.1)$$

$$Y = \beta_0 + \beta_2 X_2 + \varepsilon \dots \dots \dots (3.2)$$

$$Y = \beta_0 + \beta_3 X_3 + \varepsilon \dots \dots \dots (3.3)$$

$$Y = \beta_0 + \beta_4 X_4 + \varepsilon \dots \dots \dots (3.4)$$

$$Y = \beta_0 + \beta_5 X_5 + \varepsilon \dots \dots \dots (3.5)$$

$$Y = \beta_0 + \beta_6 X_6 + \varepsilon \dots \dots \dots (3.6)$$

Multiple regression model

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon \dots \dots \dots (3.7)$$

Whereby Y = learners' outcome in Makueni County

X₁= availability of learning resources, **X₂** =CBC supporting infrastructure, **X₃**= teaching methodologies, **X₄**=teacher capacity building, **X₅**= assessment criteria, **X₆**= stakeholder awareness,

β_0 =Constant, $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ = Coefficients of Determination

ε = Error Term.

Table 3.3: Analysis matrix

Objectives	Indicators	Scale	Analysis
To assess the effect of availability of learning resources on learners' outcomes in Makueni County.	• Books	Ordinal	Frequency
	• Good-quality instructional materials	Ratio	Correlation
To investigate the effect of CBC supporting infrastructure on learners' outcome in Makueni County.	• Digital gadgets	Ordinal	Frequency
	• Relevant reading materials.		
	• Teaching aids		
	• Furniture		
To determine the effect of teacher capacity building on learners' outcome in Makueni County.	• Classrooms	Ratio	Correlation
	• Safe toilets		
To investigate the effect of teaching methodologies on learners' outcome in Makueni County.	• Hand washing facilities	Ordinal	Correlation
	• Mentorship and coaching	Ratio	Correlation
To determine the effect of assessment criteria on learners' outcome in Makueni County.	• Seminars, workshops and conferences	Ordinal	Frequency
	• Story telling		
	• Songs and Music		
	• Use of poems		
	• Dialogue		
To establish t the effects of stakeholder awareness on learners' outcome in Makueni County.	• Role play	Ordinal	Frequency
	• Tests		
	• Rubrics		
	• Questions and answers,		
To establish t the effects of stakeholder awareness on learners' outcome in Makueni County.	• Journals, portfolios,	Ratio	Correlation
	• Oral or aural questions, checklists,		
	• Questionnaires		
	• Content		
To establish t the effects of stakeholder awareness on learners' outcome in Makueni County.	• Collaborative learning	Ordinal	Frequency
	• Feedback		
	• Support		

To examine implementation of competency based curriculum policy and its effects on learners' outcomes in Makueni County, Kenya	<ul style="list-style-type: none"> • Skills learnt. • Motor skills • Information • Knowledge • Understanding • Attitudes • Values • competencies • Behaviours mastered 	Ratio	Regression analysis
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3.12 Data Management and Ethical Considerations

According to Resnik (2011), this study recognized the importance of legal and moral concerns as a guideline for behavior that differentiates between activities that are allowed and actions that are not acceptable. Prior to beginning the research, the researcher made sure to obtain written consent from both Kenyatta University and the National Commission of Science, Technology, and Innovation (NACOSTI). Furthermore, the researcher made an effort to obtain agreement from the participants by presenting them with an explanation of the objectives of the study. In addition, once the research was over, the researcher disseminated the findings of the study to important stakeholders who were interested in the outcomes of the scientific investigation. The researcher adhered to three core principles: maintaining confidentiality, ensuring anonymity, and using the collected data solely for academic purposes.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSIONS

4.1 Introduction

The main aim of this study was to determine the effectiveness of the implementation of competence based curriculum on learner's outcome in Makueni County, Kenya. Specifically, the study sought to: assess the effect of availability of learning resources on learners' outcomes in Makueni County; investigate the effect of CBC supporting infrastructure on learners' outcome in Makueni County; determine the effect of teacher capacity building on learners' outcome in Makueni County; investigate the effect of teaching methodologies on learners' outcome in Makueni County; determine the effect of assessment criteria on learners' outcome in Makueni County; and establish the effect of stakeholder awareness on learners' outcome in Makueni County.

4.2 Response Rate

Response rate is a metric that indicates the proportion of respondents who participated in the study out of those who were selected to participate. A higher response rate is generally desirable because it suggests a more representative sample of the population, reducing the risk of bias and enhancing the credibility and generalizability of the findings. A total of 351 questionnaires were administered to the respondents made up of 117 Grade 6 teachers, 117 PTA representatives and 117 Chairpersons of Board of Management. In addition, the study interviewed 41 Curriculum Support Officers and 9 Sub County Directors of Education.

Table 4.1: Respondents' Response Rate

Respondents	Sample Size	Response	Response Rate
Administered Questionnaires	351	323	92.0%
Interviews Administered	50	37	74.0%
Total	401	360	89.8%

Source: Field Data (2023)

The response rate results in Table 4.1 shows varying levels of participation among different groups of respondents in the study, which include Grade 6 teachers, PTA representatives, Chairpersons of Board of Management, Curriculum Support Officers, and Sub County Directors of Education. Out

of the 351 questionnaires administered to grade 6 teachers, chairpersons of board of management and PTA representatives 323 questionnaires were dully filled and returned, yielding a response rate of 92 percent. In the case of interviews administered to curriculum support officers, the response rate was 90.2%, with 37 out of 41 interviews conducted. For Sub County Directors of Education, the response rate was 100%, with all 9 interviews successfully administered. Overall, the study achieved a response rate of 89.8%, indicating a strong level of engagement from participants across all respondent categories and enhancing the reliability of the study's findings.

These response rate results indicate a generally high level of engagement from most respondent groups, with grade 6 teachers, chairpersons of board of management, curriculum support officers, and sub county directors of education showing particularly strong participation. These response rate results are consistent with the suggestions by existing empirical studies that, response rate of 65% of the sample size is deemed suitable for analysis (Baruch, 1999). Furthermore, this response rate is in line with the recommendation made by Orodho and Kombo (2002). They suggested that a response rate that is greater than fifty percent is conducive to the collection of a substantial amount of data that can be extrapolated to reflect the perspectives of respondents with regard to the research issue within the population that is being targeted. As a consequence of this, these findings can be extrapolated and considered to be representative of the larger population.

4.3 Background Information of the Respondents

In the context of a study, the term "demographic characteristics of respondents" refers to the unique personal and socio-economic characteristics of persons who responded to the survey. Factors such as age, gender, and ethnicity, level of education, income, occupation, marital status, and geographical location are often included in this category of characteristics. The most important parts of the background information that were analyzed were the following: gender, age, greatest degree of education acquired, number of years working in current school, and for the teachers, it included class taught. Table 4.2 summarizes the demographic characteristics.

Table 4.2: Demographic Information on Respondents

Demographic Information	Category	Frequency	Percentage
Gender	Male	198	61.3
	Female	125	38.7
Age Bracket	Below 25 years	29	9.0
	26-35 years	143	44.3
	36-45 years	86	26.6
	46-55 years	56	17.3
	Above 55 years	9	2.8
Academic Qualification	Certificate	205	63.5
	Diploma	71	22
	Degree	41	12.7
	Masters	6	1.9
Number of years in Current School	Less than 2 years	26	8.0
	2 to 5 years	66	20.4
	6 to 9 years	131	40.6
	10 years and above	100	31.0
Class taught	Class 5 and 6	46	14.2
	Class 6	277	85.8

Demographic results in Table 4.2 shows that majority (61.3%) of the respondents were male, while 38.7% were female. This gender distribution indicates a higher representation of males among the study participants. The gender composition is important in this study because it was considered that it may influence teaching styles and perspectives on learner outcomes. Regarding the age distribution, slightly more than half (51.01%), constituting majority of the respondents, fell within the 26 to 35 years age bracket, reflecting a significant youth demographic. Additionally, 9.0% of the respondents were aged below 25 years, 44.3% were aged between 26 and 35 years, 26.6% fell in the age 36 and 45 years age bracket, 17.3% were aged between 46 and 55 years, and finally 2.8% were above 55 years old. This diverse age distribution indicates a wide range of experience levels and generational perspectives among the respondents.

These results are consistent with findings of a study by Psaki, Haberland, Mensch, Woyczynski and Chuang (2022) which examined teacher demographics in educational research and found a male majority in their sample, emphasizing the need to consider gender-related factors in curriculum assessment. Furthermore, study by Korlat, Kollmayer, Holzer, Lüftenegger, Pelikan, Schober and Spiel (2021) investigated gender disparities in educational contexts and highlighted the impact of gender on teaching styles and its potential influence on learner outcomes, aligning with the importance of gender composition in the current study. In terms of age distribution, the

results are consistent with those of Tang, Wong, Li and Cheng (2020) who analysed teachers' demographic characteristics in curriculum implementation and found a significant presence of young teachers, particularly in the 26 to 35 years age bracket, emphasizing the influence of generational perspectives on curriculum effectiveness.

In terms of academic qualifications, majority (63.5%) of the respondents had certificate as highest educational attainment, 22% had diploma, and 12.7% were bachelor's degree holders. The results also show that 1.9% of the study participants had a master's degree. These academic qualifications are indicative of the educational background of the key stakeholders in education in Makueni County. The distribution indicates that most respondents possessed certifications, whereas a smaller fraction may affect their ability to execute curriculum modifications efficiently. The data regarding the tenure of respondents in their current schools exhibits a diverse distribution. Specifically, 8.0% of respondents had been at their current institutions for less than 2 years, 20.4% for 2 to 5 years, 40.6% for 6 to 9 years, and 31.0% for 10 years or more.

This distribution implies existence of varying levels of experience, which is likely to influence their familiarity with curriculum changes and their impact on learner outcomes. Regarding the class taught, 14.2% of respondents were involved in teaching both class 5 and 6, while a significant majority (85.8%) were engaged in teaching specifically grade 6. This distribution reflects the distribution of respondents across different teaching roles and suggests that the study encompassed teachers with different teaching assignments within the curriculum. These findings agree with observations by Ferrero, et al. (2019) who found a prevalence of certificate holders in certain regions, highlighting the need for tailored capacity-building efforts. The results are also consistent with the findings of a study by Chen et al. (2020), which explored the relationship between teacher experience and curriculum effectiveness, emphasizing that diverse experience levels can influence pedagogical approaches and strategies for curriculum implementation. These results collectively highlight the significance of academic qualifications and years of experience in shaping the capacity and perspectives of educators in the context of curriculum changes in Makueni County.

4.4 Pilot Test Results

The piloting phase of this research project involved the selection of a total of 36 participants, which accounts for 10% of the sample size. These participants were comprised of Grade 6 teachers, members from the Parent Teacher Association, and Chairpersons of Board of Management from

Kitui County. In order to acquire valid input for the purpose of improving the questionnaire, these respondents were not included in the final sampling units but rather were excluded. Taking into consideration the findings of Kothari and Garg (2004), it is recommended that the pilot sample constitute a minimum of ten percent of the total sample collected for the study. These findings were utilized to ascertain whether or not the questions were correctly comprehended by the respondents, as well as whether or not there were any questions within the questionnaire that were ambiguous. This was done in order to ascertain the validity and reliability of the instruments.

4.4.1 Validity Test

An instrument's validity is defined as a measurement that determines how well it achieves its intended purpose. According to Creswell (2009) and Mohajan (2017), a valid study is one in which the findings may be generalized to persons and situations that are not equivalent to the ones that have been studied specifically. According to Creswell (2009), this is determined by rigorously examining and meticulously designing the components of the instruments with a particular emphasis on the study objectives. The methodologies of construct validity and content validity were both applied in this particular research endeavor. Each of the sections of the questionnaire analyzed information for a distinct purpose, and the questionnaire was divided into multiple sections. This was done to ensure that the information that was assessed was closely related to the goals that were being pursued by the study. Another benefit of this was that it helped to guarantee that the construct validity of the questionnaire was preserved.

In addition, the supervisors of the study conducted a comprehensive review of the questionnaires in order to ensure that the findings contained information that was accurate. This was a need for the data set to be authentic. Regarding the questionnaire, the outcomes of the KMO and Bartlett's Test of Sphericity (significance) were computed and presented in the form of Table 4.3. These outcomes demonstrated the significance of the questionnaire.

Table 4.3: Validity Test using KMO and Bartlett's Test

Variable	KMO	Significance
Availability of Learning Resources	.659	.000
CBC Supporting Infrastructure	.818	.000
Teacher Capacity Building	.908	.000
Teaching Methodologies	.628	.000

Assessment Criteria	.687	.000
Stakeholder Awareness	.855	.000
Learners' Outcomes	.646	.000

Source: Field Data, 2023

With KMO values above the acceptable threshold of 0.5, all of the following variables are suitable for further statistical analysis: learners' outcomes (.646), assessment criteria (.687), teacher capacity building (.908), CBC supporting infrastructure (.818), and availability of learning resources (.659). Factor analysis relies on the variables' interrelatedness, and Bartlett's Test of Sphericity confirms this with a significance level of .000 for all variables. The data collected is sufficiently validated for further statistical analysis due to the combination of strong KMO values and substantial Bartlett's test results.

4.4.2 Reliability Test

The coherence of the measurements that are obtained and the degree to which they are consistent from one instrument administration to another are both aspects that are referred to as reliability (Taber, 2013). More often than not, data collected by collecting samples from the same group many times yields trustworthy findings. With the help of SPSS, a reliability coefficient for the questionnaire was created after the pilot project successfully concluded. In this study, Cronbach's alpha was used as a reliability test to find out if the questionnaire items were trustworthy. The reliability of a data collection tool is defined by Creswell and Creswell (2017) as follows: when a respondent is interviewed twice using the same questionnaire and the results from both interviews are similar. The results of this study indicate that reliability is achieved with a Cronbach alpha coefficient of 0.7 or above. The results of the tests were used to arrive at this conclusion. For the purposes of conducting prediction tests or making assumptions on construct measurements, a dependability level of 0.70 is deemed competent (Shemwell, Chase, and Schwartz 2015). The results of the reliability test are displayed in Table 4.4.

Table 4.4: Reliability Test Results

Variable	Number of Items	$\alpha > 0.7$	Comments
Availability of Learning Resources	11	0.707	Reliable
CBC Supporting Infrastructure	9	0.790	Reliable
Teacher Capacity Building	7	0.939	Reliable

Teaching Methodologies	7	0.727	Reliable
Assessment Criteria	6	0.710	Reliable
Stakeholder Awareness	9	0.911	Reliable
Learners' Outcomes	4	0.782	Reliable

Source: Field Data, 2023

As indicated by the results of the reliability test that are presented in Table 4.4, all of the variables that were investigated displayed a high level of internal consistency. This was determined by the Cronbach's alpha coefficient. According to the findings of the study, reliability was defined as a Cronbach's alpha value of 0.7 or higher. This is a criteria that is endorsed by Shemwell, Chase, and Schwartz (2015) as being adequate for prediction tests or assumptions of construct measures. Each of the study variable exceeded this threshold of 0.7. The results show that the variable Availability of Learning Resources (11 items) had an alpha of 0.707, CBC Supporting Infrastructure (9 items) 0.790, Teacher Capacity Building (7 items) 0.939, Teaching Methodologies (7 items) 0.727, Assessment Criteria (6 items) 0.710, Stakeholder Awareness (9 items) 0.911, and Learners' Outcomes (4 items) 0.782. These values were all above 0.70, indicating strong levels of internal consistency. This consistency is important as it implies that the items within each variable are measuring the same underlying construct. Therefore, based on these results, all variables in the study were deemed reliable and suitable for data collection, providing a strong foundation for the subsequent analysis and interpretations in the research.

4.4.3 Factor Analysis

Factor analysis was performed with the purpose of reducing the amount of redundant data by determining whether or not there were any variables that were associated with one another. Through the process of defining the elements, it is also helpful in analyzing the structure of the interrelationships. Factor analysis was carried out in this study by establishing the cut-off point at a factor loading of 0.5. This was done in accordance with a recommendation made by Tabachinick and Fidell (2007), who stated that a factor loading of 0.5 is considered to be satisfactory.

Factor Analysis on Availability of Learning Resources

Tabachinick and Fidell (2007) state that a factor loading of 0.5 is an accurate measurement of data that is derived from real-world situations. Therefore, the decision criterion in this study was that an indicator is preserved for subsequent investigations if it has a factor loading of at least 0.5, and

if it does not have such a loading, then it is eliminated. Table 4.5 shows the factor loading on indicators of availability of learning resources.

Table 4.5: Factor Loading on Availability of Learning Resources

Statement	Factor Loading
Number of textbooks against the number of learners	0.628
number of work books	0.863
Programmed materials	0.713
Number of computers against the number of learners	0.566
Number of Programs	0.723
Flat pictures	0.82
Number of Maps	0.699
Number of models	0.525
Availability of real objects	0.807
Posters availability	0.661
Number of televisions	0.594

The factor analysis results for the availability of learning resources, as depicted in Table 4.5, indicates that all 11 indicators exceeded the factor loading cutoff point of 0.5. The results shows that indicators such as the number of textbooks against the number of learners (0.628), number of workbooks (0.863), programmed materials (0.713), number of computers against the number of learners (0.566), number of programs (0.723), flat pictures (0.82), number of maps (0.699), number of models (0.525), availability of real objects (0.807), posters availability (0.661), and number of televisions (0.594) all had factor loadings above 0.5. This indicates a strong relationship between these indicators and the underlying factor they are intended to measure. Consequently, no indicators were dropped from this variable, and all were deemed suitable for further analysis in the study.

Factor Analysis on CBC Supporting Infrastructure

The second objective of the study was to investigate the effect of CBC supporting infrastructure on learners' outcome in Makueni County. Table 4.6 shows the factor loading on indicators for CBC supporting infrastructure.

Table 4.6: Factor Loading on CBC Supporting Infrastructure

Statement	Factor Loading
Number of classrooms	0.546
Number of school toilets against number of the pupils	0.791
Girls rooms with materials	0.680
Number of water facilities e.g. taps, tanks against school population	0.722
Class rooms chairs and desks	0.840
Class room board	0.712
Location and condition of administrative offices	0.890
Number of computer rooms and laboratories	0.863

Each indicator had factor loading above 0.5, indicating a strong and relevant association with the underlying construct they are intended to measure. Specifically, the factor loadings for the indicators were as follows: Number of classrooms (0.546), Number of school toilets against the number of pupils (0.791), Girls rooms with materials (0.680), Number of water facilities like taps and tanks against school population (0.722), Classrooms chairs and desks (0.840), Classroom board (0.712), Location and condition of administrative offices (0.890), and Number of computer rooms and laboratories (0.863). The consistency in exceeding the threshold suggests a high degree of relevance and reliability of these indicators in measuring CBC supporting infrastructure. No indicator falls below the minimum required factor loading of 0.5, thus affirming the cohesiveness of this variable in the study and its suitability for further analysis. The high loadings, particularly for items like location and condition of administrative offices and number of computer rooms and laboratories, indicates the strong link between these indicators and the overall supporting infrastructure for CBC.

Factor Analysis on Teacher Capacity Building

The third objective of the study was to determine the effect of teacher capacity building on learners' outcome in Makueni County. Table 4.7 shows the factor loading on indicators for teacher capacity building.

Table 4.7: Factor Loading on Teacher Capacity Building

Statement	Factor Loading
Learning of new skills	0.741

Attending of seminars, conferences and or workshops	0.717
Expose to mentors and coaches	0.586
Training on the curriculum	0.693
In service training on planning	0.769
Expose to education testing program	0.835
Expose to lead teacher training and resources	0.795

The factor analysis results for teacher capacity building, as shown in Table 4.7, indicate strong factor loadings for all the indicators, each being above the cutoff point of 0.5, suggesting their significant relevance in measuring the construct of teacher capacity building. Specifically, the factor loadings are: Learning of new skills (0.741), Attending seminars, Conferences and workshops (0.717), Exposure to mentors and coaches (0.586), Training on the curriculum (0.693), In-service training on planning (0.769), Exposure to education testing program (0.835), and Exposure to lead teacher training and resources (0.795). These values exceed the set threshold for factor loading, indicating that each indicator is a strong and relevant measure within the domain of teacher capacity building, thus none of the indicators was dropped. The high loadings, especially for indicators like exposure to education testing programs and in-service training on planning, highlight their strong association with enhancing teacher capacity.

Factor Analysis on Teaching Methodologies

The fourth objective of the study was to investigate the effect of teaching methodologies on learners' outcome in Makueni County. Table 4.8 shows the factor loading on indicators of teaching methodologies.

Table 4.8: Factor Loading on Teaching Methodologies

Statement	Factor Loading
Use of repetition during teaching	0.728
Use of question and Answer	0.708
telling of stories when teaching	0.643
use dialogue when teaching	0.932
use songs during teaching lessons	0.702
use of poems and rhymes	0.762
I use role play	0.774

The factor analysis results for the indicators of teaching methodologies, as presented in Table 4.8, exhibit strong factor loadings, with each being greater than the 0.5 threshold, thereby demonstrating their significant relevance to the construct of teaching methodologies. The specific factor loadings based on the findings are: use of repetition during teaching (0.728), use of question and answer (0.708), telling of stories when teaching (0.643), use of dialogue when teaching (0.932), use of songs during teaching lessons (0.702), use of poems and rhymes (0.762), and use of role play (0.774). Based on these results, the use of dialogue when teaching shows a very high factor loading of 0.932, emphasizing its strong association with effective teaching methodologies. The uniformity in high factor loadings across all indicators indicates their collective strength and relevance in measuring various teaching methods, thereby confirming their suitability for further analysis in the study.

Factor Analysis on Assessment Criteria

The fifth objective of the study was to determine the effect of assessment criteria on learners' outcome in Makueni County. Table 4.9 shows the factor loading on indicators of assessment criteria.

Table 4.9: Factor Loading on Assessment Criteria

Statement	Factor Loading
Traditional stand and deliver instructions	0.550
learners copying notes, completing independent worksheet	0.708
Teacher makes decision	0.506
learners are engaged and challenged to think while processing	0.607
learners know their goals for learning	0.571
Thinking skills are routinely addressed	0.807

The factor analysis for the assessment criteria in Table 4.9 shows that all the six indicators had factor loadings above the 0.5 threshold. Based on the results, traditional stand and deliver instructions (0.550), learners copying notes, completing independent worksheets (0.708), teacher makes decisions (0.506), learners are engaged and challenged to think while processing (0.607), learners know their goals for learning (0.571), and thinking skills are routinely addressed (0.807). Each of these values are greater than the minimum factor loading criterion of 0.5, demonstrating that each aspect is an effective measure within the domain of assessment criteria. The high factor

loading for 'Thinking skills are routinely addressed' (0.807) indicates its strong association with effective assessment criteria. The consistency in achieving the factor loading threshold across all indicators suggests their collective strength and relevance, thereby confirming their appropriateness for further analysis in the context of the study. This none of the indicators was excluded.

Factor Analysis on Stakeholder Awareness

The sixth variable that was investigated in this study was the impact that the knowledge of stakeholders had on the outcomes of learners in Makueni County. All of the indicators of stakeholder awareness were subjected to factor analysis as a variable in the study. The factors that have an impact on the measures of stakeholder awareness are shown in Table 4.10.

Table 4.10: Factor Loading on Stakeholder Awareness

Statement	Factor Loading
Learners	0.760
Employers	0.538
Consultants or specialists	0.717
Local universities	0.737
Curriculum Support Officers	0.857
Professional bodies	0.688
Community	0.777
Research institutions	0.675
Assessors and moderators	0.865

The factor analysis results for the indicators of stakeholder awareness, as shown in Table 4.10, reveal that all the indicators have factor loadings above the 0.5 threshold. This indicates their strong relevance in measuring stakeholder awareness. The specific factor loadings are: learners (0.760), employers (0.538), consultants or specialists (0.717), local universities (0.737), Curriculum Support Officers (0.857), professional bodies (0.688), community (0.777), research institutions (0.675), and assessors and moderators (0.865). These values, each exceeding the minimum criterion of 0.5, affirm that every listed stakeholder is a valid and relevant measure within the domain of stakeholder awareness. The particularly high loadings for Curriculum Support Officers and assessors and moderators, both above 0.85, indicates their strong association with stakeholder awareness. This uniformity in being above the factor loading threshold across all

indicators suggests their collective importance and relevance, thereby confirming their suitability for further analysis in the context of the study.

Factor Analysis on Learners' Outcome

Table 4.11 shows the factor loading on indicators of learners' outcome.

Table 4.11: Factor Loading on Learners' Outcome

Statement	Factor Loading
Learners are able to analyze complex problems and come up with innovative solutions.	0.503
Learners are able to apply effective cognitive strategies for learning and problem-solving.	0.862
Learners are able to effectively communicate verbal information.	0.524
Learners are able to demonstrate proficient motor skills.	0.653

The factor analysis results for the indicators of learners' outcomes are shown in Table 4.11. Based on the results, all the indicators had factor loading greater than of 0.5, highlighting their relevance in measuring the construct of learners' outcomes. Specifically, the factor loadings were as follows; learners are able to analyze complex problems and come up with innovative solutions (0.503), learners are able to apply effective cognitive strategies for learning and problem-solving (0.862), learners are able to effectively communicate verbal information (0.524), and learners are able to demonstrate proficient motor skills (0.653). A high factor loading for 'Learners are able to apply effective cognitive strategies for learning and problem-solving' (0.862) emphasizes its significant association with learners' outcomes. The consistency in meeting the factor loading threshold across all indicators confirms their collective strength and relevance, thereby affirming their suitability for further analysis in the study and thus no sub variable was deleted.

4.5 Descriptive Statistics Results

The purpose of descriptive statistics is to summarize and organize data in a manner that makes it simple to comprehend. In order to provide straightforward summaries of the sample and the measurements, descriptive statistics are utilized to provide a description of the fundamental characteristics of the data. According to Holcomb (2016), descriptive statistics are essential because they make it possible to present data in a meaningful manner. Therefore, descriptive

statistics provide a more straightforward interpretation of the data and facilitate the emergence of patterns from the data. In addition, Sekaran and Bougie (2016), Blumberg, Cooper, and Schindler (2014), and Kothari (2011) all hold the same opinion. To evaluate the results, the researchers utilized two measures of central tendency: the SD and the mean. Additionally, percentages (%) were utilized to show the frequency with which each item was given a Likert score. According to Kothari and Garg (2014), the SD is the most popular and generally acknowledged measure of dispersion in research projects, even if the mean is often used to demonstrate central tendency.

4.5.1 Availability of Learning Resources

The first objective of the study was to assess the effect of availability of learning resources on learners' outcomes in Makueni County. Eleven statements were presented to the respondents to collect their level of satisfaction with the availability of learning resources in their respective schools. Descriptive analysis results on this variable are captured in Table 4.12.

Table 4.12: Descriptive Statistics on Availability of Learning Resources

Statement	Very Satisfied	Satisfied	Moderately Satisfied	Dissatisfied	Very Dissatisfied	Mean	Std. Dev.
Number of textbooks against the number of learners	5.00%	5.60%	27.60%	36.50%	25.40%	3.72	1.06
number of work books	9.60%	9.30%	12.40%	46.10%	22.60%	3.63	1.20
Programmed materials	6.20%	5.30%	10.20%	43.00%	35.30%	3.96	1.11
Number of computers against the number of learners	5.90%	9.00%	13.90%	34.70%	36.50%	3.87	1.17
Number of Programs	5.60%	7.40%	12.10%	48.60%	26.30%	3.83	1.08
Flat pictures	11.80%	9.60%	4.00%	57.30%	17.30%	3.59	1.22
Number of Maps	5.00%	5.30%	5.90%	56.30%	27.60%	3.96	1.00
Number of models	10.20%	9.30%	8.00%	44.30%	28.20%	3.71	1.25
Availability of real objects	2.80%	5.30%	3.10%	73.10%	15.80%	3.94	0.81
Posters availability	7.70%	5.00%	5.60%	28.20%	53.60%	4.15	1.21
Number of televisions	3.10%	5.90%	2.80%	84.50%	3.70%	3.80	0.73
Overall Mean						3.83	

Additionally, for programmed materials, the majority (78.30%) of the respondents were dissatisfied. The mean score was relatively high at 3.96 with a SD of 1.11, indicating a strong negative reception for these materials, though with some differing opinions. When assessing the ratio of computers to learners, most (71.20%) of the respondents expressed dissatisfaction. The mean response was 3.87 with a SD of 1.17, reflecting non-availability but also highlighting the need for more uniform access across learners. In the case of the number of programs, three-quarters (75%) of respondents reported dissatisfaction, with a mean of 3.83 and a SD of 1.08. This implies that the programs were generally not well-received, but there were differences in how they were valued across respondents.

The results further show that flat pictures had a lower satisfaction rate, with 74.60% of the respondents being dissatisfied, and a mean of 3.59, the lowest among the items. The high SD of 1.22 indicates significant differences in opinions, possibly reflecting uneven distribution or varying relevance of these materials. The number of maps saw the majority (83.90%) expressing dissatisfaction, a high mean of 3.96, and a lower SD of 1.00, suggesting consistent dissatisfaction and poor availability. For models, the dissatisfaction rate was 72.50%, with a mean of 3.71 and a relatively high SD of 1.25, indicating varied experiences among the respondents.

The availability of real objects had an 89.90% dissatisfaction rate, the highest among the categories, with a mean of 3.94 and the lowest SD of 0.81, showing both high dissatisfaction and inconsistency in responses. Moreover, posters availability had an 81.80% dissatisfaction rate, with a mean of 4.15, and a SD of 1.21, indicating that while most of the respondents found posters unimportant, there was a significant variation in their perceived value. Finally, the statement on the number of televisions showed that 88.20% were dissatisfied, with a mean of 3.80 and a SD of 0.73, reflecting widespread dissatisfaction with their availability. The mean dissatisfaction score across all categories was 3.83, indicating that generally the respondents were dissatisfied with the availability of learning resources in Makueni County. However, the varying SDs indicate that experiences differed among respondents, suggesting areas where resource distribution or quality could be improved.

These findings are contrary to the Basic Education Curriculum Framework (BECF) formulated by The Kenya Institute of Curriculum Development (2017) which offers guidance for crafting and executing the fundamental education curriculum across pre-primary, primary, and secondary

education tiers in Kenya. The BECF is rooted in the Competence-Based Curriculum (CBC) methodology, which spotlights the acquisition of practical abilities enabling learners to apply knowledge in real-world contexts. In this structure, learners are expected to gain eight fundamental skills, including communication, teamwork, critical reasoning, innovative problem-solving, artistic expression, responsible citizenship, digital proficiency, independent learning, self-confidence, and understanding others' perspectives.

Thematic Analysis

During the interviews with the curriculum support officers and sub county education officers in Makueni County, the KIIs were asked to give their views regarding availability of CBC learning materials. Most of the KII acknowledged the efforts made in distributing CBC materials but pointed out challenges in ensuring adequate and timely availability in all schools. They emphasized the importance of having sufficient textbooks and other resources to support the hands-on, practical approach of CBC. Concerns were also raised about the need for more teacher training to effectively use these materials. Some officers suggested that collaborations with local communities and stakeholders could help in supplementing government efforts, ensuring that all learners have the necessary resources to fully benefit from the CBC approach. Respondent M1 explained that;

“While there has been progress in the distribution of Competency-Based Curriculum (CBC) materials in Makueni County, the situation is mixed and varies significantly across different regions and schools. Urban areas generally have better access to CBC materials compared to rural schools, where shortages are more pronounced. Moreover, there is serious disparity in access between public and private schools, with private schools often having better resources than public schools”.

The responses from curriculum support officers and sub-county education officers in Makueni County as presented imply that there are serious challenges in the equitable distribution and availability of Competency-Based Curriculum (CBC) learning materials, highlighting a disparity that affects the effectiveness of the CBC approach in the County. The responses indicate that despite progress, the uneven access to resources between urban and rural schools, as well as public and private institutions, highlighting the need for enhanced distribution strategies, increased

teacher training, and community engagement. These disparities hinders the hands-on, practical education that CBC aims to provide, potentially widening the educational gap between different regions and types of schools, and affecting the overall quality of education and competency development among learners in Makueni County. These responses are consistent with the assertions by Mynbayeva, Sadvakassova and Akshalova (2018) that, teaching aids and educational resources play a crucial role in nurturing personal characteristics, societal roles, and academic proficiencies in learners. These materials can be customized to support endeavours related to career advancement, emphasizing aspects like accountability and effective task management. They also encompass enhancing skills like self-motivation, making choices, addressing challenges, and speaking up for oneself.

In addition respondent M2 noted that;

“The quantity and quality of CBC materials present challenges in our County. There's a consensus that while basic materials are available, more specialized resources, particularly for subjects like science and for special needs education, are lacking. In our opinion, there is need for timely distribution and replenishment of materials to ensure consistent access across all schools. Regarding digital resources, we have a concern about the scarcity, especially accentuated by the pandemic's push towards digital learning. The digital divide in this region has made it difficult for all learners to benefit equally from the CBC, with those in less developed schools at a disadvantage. Despite the government's efforts, the availability of digital resources needs to be addressed more effectively”.

Based on these KII responses, it is evident that there is critical issues in the provision of Competency-Based Curriculum (CBC) materials in schools in Makueni county, with a particular shortfall in specialized resources for science subjects and special needs education. The inconsistency in the distribution and replenishment of these materials exacerbates the problem, leading to uneven access across schools. The transition towards digital learning, hastened by the pandemic, further accentuates the digital divide, placing learners in less developed schools especially those in rural set up at a disadvantage. This situation points to the urgent need for more effective strategies to ensure equitable access to both physical and digital CBC resources, to prevent widening the educational inequality and to support the holistic development of all learners in line with the CBC's objectives.

Moreover, from the perspective of educators and those overseeing curriculum implementation key informant M5 explained that;

“There’s a general awareness and enthusiasm for the CBC there is a general feeling that most schools are inadequately equipped with the necessary materials to implement CBC effectively. This includes a lack of hands-on learning materials, which are crucial for the practical, skill-based approach of the CBC. So we feel there is need for more consistent efforts and support in providing these resources. In addition, while there have been commendable efforts by the government and NGOs in supplying CBC materials, there are still significant gaps that need to be addressed. These include ensuring equitable distribution across urban and rural areas, improving the quality of materials, and enhancing the supply of digital and specialized resources. Addressing these challenges is essential for the successful implementation of the CBC in Makueni County”.

Moreover, respondent M7 explained that;

“We recognize the distribution of CBC materials as a step forward, yet we still face significant challenges in reaching all corners of our county. Many rural schools are left waiting for resources long after their urban counterparts have received theirs,” explained a sub-county education officer. The logistical hurdles are not just about geography; they also involve administrative bottlenecks that delay delivery times significantly. We need to enhance our logistics, perhaps through technology or better planning, to ensure timely delivery. Additionally, continuous feedback loops from the schools could help us identify and address distribution issues more effectively”.

Moreover, interviewee M15 indicated that;

“The training for our teachers is not keeping pace with the deployment of new CBC materials,” stated a curriculum support officer. Even when schools receive the necessary resources, there is a noticeable gap in how effectively these materials are utilized in the classroom. Teachers need more structured and continuous professional development to truly transform these resources into meaningful educational experiences. It's not just about one-off training sessions; we need a sustainable program that supports teachers throughout the academic year, providing them with ongoing guidance and updates on the latest educational strategies and materials”.

Key informant M20 added that;

“Our efforts are fragmented, commented another sub-county director. While we have partnerships with NGOs and local communities that help fill some gaps, there is no comprehensive strategy that ensures equitable distribution across both urban and rural areas. We often find that private schools have advanced much further in implementing CBC due to better funding and resources, deepening the divide between different types of educational institutions. We must develop a more unified approach that includes all stakeholders’ government agencies, private sector partners, and community organizations to create a more equitable educational landscape. This should also include special attention to the needs of schools in disadvantaged areas to prevent them from falling further behind”.

Based on the opinions of the key informants, it is evident that there has been progress in distributing Competency-Based Curriculum (CBC) materials in Makueni County, yet significant challenges remain. It is evident that, while urban areas and private schools generally have better access, rural and public schools face serious shortages. The responses points to the need for more specialized resources, especially for science and special needs education. The information has highlighted a digital divide, disadvantaging learners in less developed schools. Although there is enthusiasm for CBC, schools are often inadequately equipped, particularly lacking in hands-on learning materials vital for CBC's practical approach. Efforts by the government and NGOs have been commendable, but the need for equitable distribution, improved material quality, and enhanced digital resources is critical for CBC's successful implementation in the region. This is consistent with the observations by Thomas Bossuroy, Clara Delavallade and Eliana La Ferrara (2021) that the availability of school library resources has a positive impact on learning outcomes, particularly in reading and math. Specifically, the study found that providing school libraries with additional resources, including books, textbooks, and other materials, resulted in significant improvements in learners’ reading and math scores. The study also found that the impact of school library resources was more significant for girls than boys.

4.5.2 CBC Supporting Infrastructure

The second objective of the study was to investigate the effect of CBC supporting infrastructure on learners’ outcome in Makueni County. The nine statements on CBC supporting infrastructure

were presented to the respondents to collect their level of satisfaction with the CBC supporting infrastructure in their respective schools. The findings of the descriptive statistics produced for the CBC supporting infrastructure are shown in Table 4.13.

Table 4.13: Descriptive Statistics on CBC Supporting Infrastructure

Infrastructure	Very Satisfied	Satisfied	Moderately Satisfied	Dissatisfied	Very Dissatisfied	Mean	Std. Dev.
Number of classrooms	7.40%	5.60%	6.80%	44.30%	35.90%	3.96	1.15
Number of school toilets against number of the pupils	8.00%	4.60%	7.10%	47.10%	33.10%	3.93	1.15
Girls rooms with materials	7.40%	12.40%	10.80%	51.70%	17.60%	3.6	1.14
Number of water facilities e.g. taps, tanks against school population	9.00%	11.50%	16.70%	40.60%	22.30%	3.56	1.21
Class rooms chairs and desks	3.40%	5.30%	8.70%	51.10%	31.60%	4.02	0.96
Number of classrooms	6.80%	4.30%	8.40%	56.30%	24.10%	3.87	1.05
Class room board	5.30%	4.00%	16.40%	39.60%	34.70%	3.94	1.07
Location and condition of administrative offices	5.90%	7.40%	13.90%	41.20%	31.60%	3.85	1.12
Number of computer rooms and laboratories	4.60%	8.00%	13.90%	36.80%	36.50%	3.93	1.11
Overall Mean						3.851	

The results in Table 4.13 depict that the majority of respondents (80.20%) were dissatisfied with the number of classrooms, with a mean response rate of 3.96. This suggests a high level of overall discontentment with the number of classrooms in the schools, indicating disparities in the quality or availability of classrooms. For the number of school toilets in relation to the number of pupils, most (80.20%) of the respondents indicated that they were dissatisfied. The mean response was 3.93, and a SD of 1.15 highlights that, while dissatisfaction is generally high, there are areas needing improvement.

Moreover, most (69.30%) of the respondents were dissatisfied with girls' rooms and their materials. The mean response for this infrastructure was 3.60, and a SD of 1.14 suggesting moderate dissatisfaction and significant variations in the provision of these facilities. For water facilities like taps and tanks, most (62.90%) of respondents expressed dissatisfaction. A mean score of 3.56 and a higher SD of 1.21 indicate a need for more consistent and better-quality water facilities in the schools.

Moreover, majority (82.70%) of the respondents were dissatisfied with the availability of classroom chairs and desks, with a high mean of 4.02 and a SD of 0.96 indicating more uniform feeling across respondents. In addition, approximately three-quarters (74.30%) of the respondents expressed dissatisfaction with the classroom boards. The response was 3.94 with a SD of 1.07, suggesting generally poor availability and variations in quality. The location and condition of administrative offices saw a dissatisfaction rate of 72.80%, with a mean of 3.85 and a SD of 1.12. This implies that while facilities are generally inadequate, the condition and accessibility vary.

Finally, majority (73.30%) of the respondents were dissatisfied with the number of computer rooms and laboratories. The mean dissatisfaction score was 3.93, and the SD was 1.11, indicating a high level of dissatisfaction and highlighting the need for improvements in some schools. The overall mean dissatisfaction score across all aspects of CBC supporting infrastructure was 3.851, reflecting a generally negative attitude towards the infrastructure. However, the variations in SDs across different categories suggest disparities in infrastructure quality and availability, indicating areas where targeted improvements could enhance educational outcomes.

These findings are consistent with the assertions by Silverman (2006) that visual materials help learners achieve clarity in their thoughts and comprehension of information. They enable the understanding of concepts through making connections and facilitate the integration of new knowledge with prior learning. Additionally, these materials assist educators in identifying learners' misconceptions. Visual learning also fosters various modes of thinking (Foliaki, 2012). According to Cubillas (2020), visual resources are particularly effective in conveying concepts and content in a more accessible manner, especially for visually oriented learners, and they significantly enhance the classroom learning experience. When course content is enriched with diagrams, videos, visual representations, charts, maps, photographs, and diagrams, learners grasp the material more readily (Kurgatt & Omuna, 2016).

Thematic Analysis

During the interviews with the curriculum support officers and sub county education officers in Makueni County, the KIIs were asked to give their opinions regarding CBC support infrastructure in schools in Makueni County. Most of the KII expressed a positive view towards the impact of Competency-Based Curriculum (CBC) support infrastructure on learner outcomes. They acknowledge the importance of having adequate infrastructure, like well-equipped classrooms, libraries, and access to technology, as key elements in facilitating the CBC's interactive and practical learning approach. There is a recognition that such infrastructure not only aids in academic performance but also supports the holistic development of learners. However, these responses also highlight existing challenges, including the need for sufficient funding and effective teacher training programs to maximize the benefits of these infrastructures.

Interviewee M3 explained that;

“I believe that the Competency-Based Curriculum (CBC) support infrastructure significantly influences learner outcomes. In my opinion, the presence of well-equipped classrooms, libraries, and technological facilities is fundamental to the success of the CBC. These infrastructures provide a conducive environment for hands-on, interactive learning, which is at the heart of the CBC approach”.

In addition, key informant M6 asserted that:

“I've observed that schools with better infrastructure tend to have learners who are more engaged and perform better academically. Moreover, such facilities support the all-around development of learners, equipping them with various skills and competencies necessary in the modern world. However, I must admit that there are challenges, such as limited funding and the need for ongoing teacher training, to fully utilize these infrastructures. I firmly believe that investing in education support infrastructure is crucial for enhancing learning outcomes in Makueni County under the CBC framework”.

The perspective provided emphasizes the significant impact of Competency-Based Curriculum (CBC) support infrastructure on learner outcomes. Key components such as well-equipped

classrooms, libraries, and technological facilities are identified as critical for the success of the CBC. These facilities foster an environment conducive to hands-on, interactive learning which is central to the CBC approach. The observations suggest that schools with superior infrastructure tend to see higher student engagement and academic performance, as well as a broader development of essential skills and competencies. However, the summary also acknowledges challenges, notably limited funding and the necessity for continuous teacher training to maximize the use of available infrastructure. The assertion underlines that while infrastructure is crucial, its benefits are fully realized only when educators are properly equipped to use these resources effectively. In essence, investing in educational support infrastructure, alongside addressing funding and training challenges, is fundamental for improving learning outcomes under the CBC in Makueni County. This approach not only enhances academic performance but also supports the holistic development of learners, preparing them with the skills needed for success in the modern world.

In addition, respondent M21 explained that;

“In my experience, the support infrastructure for the Competency-Based Curriculum in Makueni County has truly made a significant difference in the way our students learn and grow. From my perspective, it's undeniable that the presence of well-equipped classrooms, comprehensive libraries, and widespread access to technology is absolutely essential. These elements are the backbone of facilitating the interactive, hands-on approach that the CBC is known for. But it's more than just the physical resources; it's about creating an ecosystem where learners are encouraged to explore, innovate, and apply their knowledge in real-world scenarios”.

In support of the opinions of respondent M21, key informant added that;

“The impact of this infrastructure extends beyond academic achievements; it fosters critical thinking, problem-solving skills, and a lifelong love for learning. As I've observed the changes and improvements in our educational environment, I'm convinced that investing in such infrastructure is investing in the future of our learners, equipping them not just with knowledge, but with the skills and mind set needed to navigate and contribute to an ever-evolving world”.

The KIIs have emphasized on the support infrastructure for the Competency-Based Curriculum (CBC) indicating its pivotal role in shaping learner outcomes in Makueni County. Based on the responses, it is clear that the availability of well-equipped classrooms, libraries, and technological facilities is indeed vital for the CBC, facilitating hands-on, interactive learning that fosters engagement and better academic performance among learners. In their view, such infrastructure not only enhances the learning experience but also supports the holistic development of learners, preparing them with the skills and competencies needed for the future. However, the challenges of limited funding and the necessity for continuous teacher training to maximize the potential of these facilities highlight the need for strategic investments and policies.

This is in agreement with Muneja (2015) who illuminated the challenges faced by high school educators when attempting to implement the Competency-Based Curriculum (CBC). Muneja (2015) found that teachers faced a multitude of obstacles that had an adverse impact on their ability to effectively implement the curriculum. These difficulties included insufficient teacher knowledge regarding appropriate teaching and evaluation techniques, a scarcity of suitable textbooks, and subpar quality of teaching materials. Additionally, the study noted a shortage of adequate information and communication technology (ICT) tools for instructional purposes, along with a lack of motivation among teachers to engage with the curriculum.

One of the respondents indicated that the critical role of basic amenities like clean water, proper sanitation, and safe transportation. Respondent M10 emphasized that:

“These facilities directly influence learners’ health, attendance, and concentration in class, which are fundamental for effective learning. Schools lacking these basic infrastructures struggle not just in retaining learners but also in maintaining teaching standards”.

In addition, a significant number of KIIs pointed out the importance of infrastructures that support extracurricular activities, such as sports facilities, music, and art rooms. These facilities were seen as vital for the holistic development of learners, contributing to a well-rounded education. The respondents believed that such amenities support creative expression and offer a necessary break from traditional academic subjects, thus enhancing the overall learning experience.

The insights from key informant interviews stresses the fundamental role of essential amenities like clean water, proper sanitation, and safe transportation in the educational setting. These basic

facilities have a direct impact on learners' health, which in turn affects their attendance and ability to concentrate in class, elements crucial for effective learning. The responses imply that schools that lack these amenities face challenges in student retention and in upholding teaching standards. Moreover, the significance of infrastructure supporting extracurricular activities, including sports, music, and art facilities, was also highlighted for fostering the holistic development of learners. Such amenities not only encourage creative expression but also provide a necessary respite from traditional academic learning, enriching the overall educational experience. Ensuring these facilities are available is key to promoting a well-rounded education that nurtures all aspects of learner development.

Respondent M17 observed that:

“Schools equipped with modern teaching tools and resources, such as computer labs and internet connectivity, tend to produce more confident and competent learners. The integration of technology has been seen as key to preparing learners for the digital world and enhancing the quality of education. The necessity of specific infrastructures for inclusive education is highly acknowledged, especially those catering to learners with special needs. These facilities are important in ensuring that all learners, regardless of their individual challenges, have access to quality education and the opportunity to achieve positive outcomes”.

Based on the above responses, it is evident that most of the KIIs pointed out the importance of having well-equipped libraries, science labs, and emergency preparedness facilities. These were seen as essential components of a school's infrastructure, enabling hands-on learning experiences and ensuring a safe learning environment. The consensus was that operational support infrastructures, when effectively utilized, have a profound impact on learners' outcomes, leading to improved academic performance and overall development. These results align with the research undertaken by Wambua and Waweru (2019), which aimed to identify the challenges related to the implementation of the Competency-Based Curriculum (CBC) in public elementary schools in Machakos County. The study's findings indicated that the Ministry of Education ought to augment resource allocation for teacher training and actively include educators in curriculum reform efforts. The purpose of this interaction is to encourage them to rethink their perspectives on the curriculum, which will ultimately result in a more efficient execution.

4.5.3 Teacher Capacity Building

The third objective of the study was to determine the effect of teacher capacity building on learners' outcome in Makueni County. Seven statements on teacher capacity building were presented to the respondents to collect their level of satisfaction with teacher capacity building in their respective schools.

Table 4.14: Descriptive Statistics on Teacher Capacity Building

	Very Satisfied	Satisfied	Moderately Satisfied	Dissatisfied	Very Dissatisfied	Mean	Std. Dev.
Learning of new skills	4.60%	7.10%	16.70%	35.30%	36.20%	3.91	1.11
Attending of seminars, conferences and or workshops	6.80%	4.30%	18.30%	48.30%	22.30%	3.75	1.06
Expose to mentors and coaches	0.90%	2.20%	14.90%	35.30%	46.70%	4.25	0.85
Training on the curriculum	12.40%	11.10%	19.80%	46.40%	10.20%	3.31	1.18
In service training on planning	6.20%	3.70%	13.60%	40.20%	36.20%	3.97	1.1
Expose to education testing program	2.50%	1.90%	13.00%	49.50%	33.10%	4.09	0.87
Expose to lead teacher training and resources	6.50%	9.90%	13.90%	38.10%	31.60%	3.78	1.18
Overall Mean						3.866	

The findings, as illustrated in Table 4.14, provide insightful data regarding the satisfaction levels of respondents with various aspects of teacher capacity building in Makueni County. For the aspect of learning new skills, majority of the respondents (71.5%), expressed dissatisfaction. This is highlighted by a mean response of 3.91 and a SD of 1.11, indicating a general leaning towards dissatisfaction among the respondents. This suggests a potential gap in the effectiveness of skill development initiatives, which could have implications for learner outcomes, as teacher skill

proficiency is directly linked to the quality of education. In the area of attending seminars, conferences, and workshops, most (70.6%) of the participants were dissatisfied with a mean response of 3.75 with a SD of 1.06, indicating a moderate level of dissatisfaction. This reflects on the quality or relevance of such professional development activities, pointing towards a need for more targeted and impactful training sessions.

The exposure to mentors and coaches was met with significant dissatisfaction, with majority (82%) of the respondents indicating that they were not satisfied. A mean of 4.25 and a SD of 0.85 demonstrates a high level of dissatisfaction among the respondents. This implies that current mentoring and coaching systems in Makueni County are not effectively meeting teachers' needs or contributing positively to their professional growth. Regarding training on the curriculum, slightly more than half (56.6%) of the respondents were dissatisfied, as indicated by a mean of 3.31 and a SD of 1.18. This suggests that while there was some level of dissatisfaction, it is comparatively lower in this area, which might point to a relatively more effective approach in curriculum training.

Furthermore, the results show that in-service training on planning had 76.4% of the respondents not satisfied, with a mean score of 3.97 and a SD of 1.10. This indicates a need for enhancement in planning-related training to better cater to teachers' needs. The exposure to education testing programs had majority (82.6%) of the respondents expressing dissatisfaction, reflected in a mean of 4.09 and a SD of 0.87. This high level of dissatisfaction signify shortcomings in how testing programs are integrated into teacher training. Finally, exposure to lead teacher training and resources saw most (69.7%) of the respondents expressing dissatisfaction. The mean response was 3.78 with a SD of 1.18, suggesting a moderate level of dissatisfaction with this component of teacher capacity building.

In general, the average mean response for all the statements on capacity building was 3.866, indicating a general trend of dissatisfaction among grade 6 teachers, PTA representatives and chairpersons of board of managements in Makueni County regarding various capacity-building initiatives. This implies that the current approaches to teacher capacity building in the County might are not fully effective in enhancing teachers' skills and competencies, which are likely to subsequently impact learner outcomes. The findings suggest a need for a reassessment and enhancement of teacher capacity-building programs to better align them with both teacher needs

and learner outcomes. These findings are in agreement with the study by Chaudhary (2015) which argued that the execution of the curriculum is influenced by a range of elements, including educators, learners, ideological factors, and cultural education. The study also unveiled that the government supplied tangible resources such as sports facilities, workshops, libraries, classrooms, laboratories, and recreational areas. Chaudhary (2015) noted that, to facilitate the establishment of a conducive curriculum environment, proper implementation entails equipping the central government with essential facilities like workshops, libraries, and classrooms, laboratories, and sports areas. Chaudhary (2015) also highlighted that the effective execution of the curriculum was notably impacted by the availability of superior resources and suitable facilities.

Thematic Analysis

During the interviews with the curriculum support officers and sub county education officers in Makueni County, the KIIs were asked to give their opinions regarding teacher capacity building in Makueni County. They were asked, ‘In your own opinion, do you think teacher capacity building has been effectively undertaken in Makueni County? Explain.’ The consensus on teacher capacity building was that while there have been significant efforts, there is still room for improvement. Most of the Key Informant Interviews (KIIs) acknowledged that there have been initiatives aimed at enhancing teacher skills, particularly in adapting to the Competency-Based Curriculum (CBC). They identified obstacles including inadequate resources, the necessity for more frequent and thorough training programs, and the tailoring of training to local settings and requirements. They underscored that effective teacher capacity development is essential for the successful execution of the CBC and for enhancing the overall quality of education. The respondents emphasized the necessity of ongoing professional development, support, and mentorship for educators to ensure they are adequately prepared to address the changing requirements of the educational environment in Makueni County.

Interviewee M20 explained that;

“My observation is that while there have been concerted efforts towards teacher capacity building, the initiatives often appear sporadic and not as well-coordinated as one would hope. There's a clear need for continuous and structured training programs that are practical and hands-on. This gap between theory and practical application in classrooms

has been a significant concern. I believe that more interactive and classroom-based training methods are essential for the real improvement of teaching skills”.

These feedback from key informant interviews imply that although there have been efforts towards enhancing teacher capacity in Makueni County, these initiatives often lack coordination and continuity. There is a pressing need for ongoing, structured training programs that emphasize practical, hands-on experience, bridging the gap between theoretical knowledge and its application in the classroom. The concern points to the necessity of adopting more interactive and classroom-based training approaches to effectively enhance teaching skills. Such training methods would not only improve teacher effectiveness but also directly impact the quality of education, aligning with the Competency-Based Curriculum's goals of fostering a more interactive and practical learning environment.

This concurs with suggestions by Desimone and Garet (2015) that, effective teacher PD is critical to improving learner learning outcomes and closing achievement gaps. The article outlined five essential aspects of successful teacher professional development: emphasis on subject matter, interactive educational experiences, logical connection, time allocation, and group involvement. Addressing the initial aspect, which is content focus, emphasizes the importance of aligning PD with specific content standards and learner learning goals. The second feature, active learning, suggests that effective PD should engage teachers in hands-on activities, discussion, and reflection, rather than passive listening.

In addition, respondent M14 explained that;

“I've noticed progress in certain areas such as digital literacy and competency-based teaching. However, it's apparent that more subject-specific training is required. Although new methodologies, particularly related to the CBC, have been introduced, ongoing support and refresher courses are essential to maintain and enhance these standards. This approach would ensure that all teachers, regardless of their current skill level, have the opportunity to improve and stay updated with educational trends”.

The observations by KIIs as presented above shows progress in areas like digital literacy and competency-based teaching methods in Makueni County, indicating the positive steps taken towards modern educational practices. However, the need for more subject-specific training emerges as a critical area for further development. While new teaching methodologies in line with

the Competency-Based Curriculum have been introduced, the necessity for continuous support and refresher courses is evident to uphold and advance these teaching standards. This indicates that implementing such an approach would guarantee that all teachers, irrespective of their existing expertise, receive opportunities to enhance their skills and remain abreast of the latest trends in education, thereby contributing to a more dynamic and effective learning environment.

Moreover, respondent M22 added that;

“There seems to be a disparity in the effectiveness of these training programs. Some teachers, especially in urban areas, have benefited greatly from capacity-building initiatives, but those in more remote or rural areas still face challenges. This has led me to believe that there's a need for more inclusive and accessible training programs that reach all teachers equally. It's crucial that these programs are tailored to meet the unique needs of teachers in different regions”.

The feedback points to a serious disparity in the effectiveness of teacher training programs across Makueni County, with teachers in urban areas benefiting more than their counterparts in rural or remote areas. This discrepancy points to the need for more inclusive and accessible training initiatives that cater equally to all educators, regardless of their geographical location. Tailoring these programs to address the specific needs and challenges faced by teachers in various regions is crucial to ensure that every teacher has the opportunity to enhance their skills and effectively implement the Competency-Based Curriculum, thereby contributing to a more equitable and effective educational environment.

In addition, interviewee M18 explained that;

“From my evaluations and feedback, it's clear that while strides have been made in teacher capacity building, particularly with the new CBC, there remains a significant need for more tailored and continuous training. Teachers in our county often express that the training sessions are too sporadic and lack depth in practical applications, which are crucial for competency-based teaching,” remarked one curriculum support officer”.

While supporting the observation by respondent M18, interviewee M19 added that;

“To address this, we believe that a comprehensive overhaul of our professional development programs is necessary. These programs should not only be regular but also

deeply immersive, providing teachers with real classroom scenarios to practice new methods. Moreover, there's a pressing need to integrate local cultural and societal contexts into the training materials, ensuring that teachers can relate the content to their students' real-life experiences. This contextualization is often missing, making it harder for teachers to apply what they learn effectively”.

The feedback suggests that while there has been moderate success in capacity building, there is considerable room for improvement. Teachers require more support, especially in adapting to new curriculums and teaching methods. This support should be continuous, targeted, and adapted to the evolving educational environment.

Furthermore, respondent M21 asserted that;

“Another critical aspect we've noticed is the disparity in training quality and access between urban and more remote rural areas, explained another sub-county education officer. Teachers in urban centers often have access to better resources and more frequent training opportunities, which is not the case for their counterparts in rural areas. This imbalance not only affects the quality of education but also demoralizes teachers in less advantaged areas who feel left behind”.

Respondent M29 observed that;

“To combat this, our goal is to develop a more equitable training system. This system would utilize digital platforms to bridge the access gap and ensure consistent quality across all areas. Additionally, setting up regional training hubs could provide ongoing support and development opportunities, making professional growth accessible for all teachers, irrespective of their geographic location. We must ensure that every teacher, regardless of where they teach, has the necessary tools and knowledge to implement CBC effectively and inspire their students”.

The implications of the responses from the sub-county education officer highlight the significant disparity in teacher training quality and access between urban and rural areas in Makeni County. This gap not only impacts the overall quality of education but also affects teacher morale in less advantaged areas. To address these challenges, the proposed solution involves developing a more equitable training system that leverages digital platforms to ensure consistent training quality and

accessibility across all regions. Additionally, the creation of regional training hubs aims to provide continuous support and professional development opportunities for all teachers, ensuring that they are equipped with the necessary tools and knowledge to effectively implement the Competency-Based Curriculum and inspire their students, regardless of their geographic location. This strategic approach seeks to bridge the educational divide and foster a more inclusive and effective educational environment.

These responses imply that there is an important area for development in teacher training programs, emphasizing the need to balance the focus on technical skills with soft skills such as communication and empathy. The responses imply that despite some success in capacity building, there is a significant need for enhanced support for teachers, particularly in adapting to new curriculums and teaching methodologies. This support should not only be ongoing but also specifically tailored to meet the changing demands of the educational landscape. Providing teachers with comprehensive training that includes both soft and technical skills is crucial for fostering a more supportive, engaging, and effective learning environment for learners in Makueni County. This is in agreement with a study by Ashiono (2018) which revealed that a mere 4% of teachers utilized ICT as a regular tool for teaching numeracy concepts. The study's overarching conclusion was that the utilization of ICT by teachers for teaching numeracy skills in lower primary schools was insufficient. The research identified a lack of adequate preparation among teachers to effectively employ ICT in teaching numeracy concepts.

Finally, respondent M32 suggested that;

“There is need to ensure the effective application of learned skills in diverse classroom settings. Despite the commendable efforts in teacher training, applying these skills effectively in the real-world context of classrooms remains a challenge. Capacity building should not only focus on imparting knowledge but also on ensuring its practical implementation in classrooms across Makueni County. My experience and observations lead me to believe that while strides have been made in teacher capacity building in Makueni County, there is still a significant need for more comprehensive, practical, and continuous professional development programs. These programs should be designed to reach all teachers and ensure the effective application of skills learned in classroom environments”.

Based on the above interview response, most Key Informant Interviews (KIIs) recognized the initiatives undertaken to enhance teacher skills, especially in adapting to the Competency-Based Curriculum (CBC), but highlighted several challenges, such as insufficient resources, the need for more regular and comprehensive training programs, and adapting training to local contexts. There was a strong emphasis on the necessity for effective teacher capacity building for the successful implementation of the CBC and the overall enhancement of education quality. A key observation was the sporadic and uncoordinated nature of these initiatives, underlining the need for more continuous, structured, and hands-on training programs to bridge the gap between theoretical knowledge and practical classroom application. Progress in areas like digital literacy and competency-based teaching was noted, yet there was a call for more subject-specific training and ongoing support to keep teachers up-to-date with educational trends. The KIIs also pointed out disparities in the effectiveness of training programs, especially between urban and rural areas, suggesting a need for more inclusive and accessible training tailored to different regional needs.

Additionally, there was a notable emphasis on the importance of soft skills such as communication and empathy in teacher training. The feedback indicate moderate success in capacity building, but with significant room for improvement, especially in supporting teachers to adapt to new curriculums and teaching methods. Finally, the respondents agreed on the crucial need for the effective application of learned skills in diverse classroom settings, acknowledging that despite commendable training efforts, the practical application in classrooms remains a challenge. The overarching sentiment was that while progress has been made in teacher capacity building in Makueni County, there is an urgent need for more comprehensive, practical, and continuous professional development programs that are accessible to all teachers and ensure the effective application of skills in classroom environments.

4.5.4 Teaching Methodologies

The fourth objective of the study was to investigate the effect of teaching methodologies on learners' outcome in Makueni County. Seven statements on teacher teaching methodologies were presented to the respondents to collect their views regarding the extent of the use of various teaching methodologies in their respective schools. Table 4.15 presents the descriptive statistics results generated for teaching methodologies.

Table 4.15: Descriptive Statistics on Teaching Methodologies

Method	No Extent	To some extent	Moderate Extent	Great Extent	Very great Extent	Mean	Std. Dev.
Use of repetition during teaching	7.10%	9.90%	11.10%	46.10%	25.70%	3.73	1.16
Use of question and Answer telling of stories when teaching	8.00%	8.40%	10.20%	53.90%	19.50%	3.68	1.12
use dialogue when teaching	6.20%	7.40%	9.00%	42.70%	34.70%	3.92	1.14
use songs during teaching lessons	5.00%	4.60%	9.30%	42.40%	38.70%	4.05	1.05
use of poems and rhymes	6.50%	7.70%	8.70%	47.40%	29.70%	3.86	1.12
I use role play	6.20%	5.90%	9.60%	44.60%	33.70%	3.94	1.11
Overall Mean	4.30%	7.10%	5.90%	52.00%	30.70%	3.98	1.02
						3.880	

Table 4.15 shows that most respondents rated the use of repetition in the classroom as very high (71.8%), with a mean score of 3.73 and a SD of 1.16. This suggests that repetition is a widely accepted and practiced teaching method, possibly due to its effectiveness in reinforcing learning concepts. In the case of the use of question and answer, majority (73.4%) of the teachers reported using this method frequently. The mean of 3.68 and a SD of 1.12 indicate its prevalent use, reflecting its importance in promoting critical thinking and engagement among learners.

Moreover, telling stories during teaching was also notably favored, with most (77.4%) of the respondents indicating that the approach was being used to a great extent. The mean score of 3.92 and a SD of 1.14 suggest that storytelling was a popular method for engaging learners and enhancing their understanding. The use of dialogue in teaching was reported to be widely practiced (42.4% to a great extent and 38.7% to a very great extent), as reflected by a mean of 4.05 and a SD of 1.05. This indicates a strong inclination towards interactive teaching approaches that encourage discussion and exchange of ideas.

In addition, the making use of songs in the course of instruction was yet another strategy that was utilized frequently. This method was utilized by 77.1% of respondents, with 47.4% of them to a large extent and 29.7% to a very great extent. Due to the fact that it has a mean of 3.86 and a SD of 1.12, it emphasizes the significance of musical components in improving the overall learning

experience. In addition, the use of rhymes and poems was widespread, as reported by 78.3 percent of respondents (44.6% to a great extent and 33.7% to a very large level). Considering that the mean score in this instance was 3.94 and the SD was 1.11, it can be inferred that poetic elements are regularly applied to effectively interest learners and assist learning. Significant amount of success was achieved through the utilization of role play, with 82.7% of respondents reporting that they utilized this strategy to a great extent (52% to a great extent and 30.7% to a very great level). The replies gave a mean of 3.98 and a SD of 1.02, which reflects its widespread acceptance and deployment in the classroom. This indicates that it is effective in producing learning experiences that are both immersive and participatory.

The results had an overall mean of 3.880, suggesting a strong inclination towards diverse and interactive teaching methodologies in Makueni County. These methods, including storytelling, dialogue, songs, poems, and role play, are being employed extensively by teachers in Makueni County, potentially contributing positively to learners' outcomes. The use of these varied approaches are likely to enhance learner engagement, understanding, and retention, thereby positively impacting their overall learning experience. These findings agree with the conclusion made by Tilya and Mafumiko (2018) which underlined the significance of harmonizing instructional approaches with the curriculum to ensure effective learning results and to stimulate learner participation and enthusiasm. The study demonstrated the results of a survey carried out among teachers in Tanzanian secondary schools, which sought to gauge the congruence between their teaching methods and the competence-based curriculum. The findings suggest that although many teachers are familiar with the new curriculum and its emphasis on competency development, they persist in utilizing traditional teaching techniques that prioritize rote learning and memorization.

Thematic Analysis

During the interviews with the curriculum support officers and sub county education officers in Makueni County, the KIIs were asked to give their opinions regarding teaching methodologies on learners' outcomes in Makueni County. They were asked; do you think teaching methodologies have any effect on learners' outcome in Makueni County? In Response, interviewee M1 explained that;

“In my view, based on what I've gathered from curriculum support officers and sub-county education officers in Makueni County, teaching methodologies have a significant impact on learners' outcomes. I strongly believe that effective teaching methods, especially those integrating real-life skills and focusing on competency-based education, positively influence learners' academic performance and future readiness. These methods are crucial not only for imparting knowledge but also for developing essential life skills in learners”.

Based on insights from curriculum support officers and sub-county education officers in Makueni County, there is a consensus that teaching methodologies profoundly influence learners' outcomes. Effective teaching strategies, particularly those that incorporate real-life skills and emphasize competency-based education, are seen as vital for enhancing learners' academic achievements and preparing them for future challenges. Such methodologies are deemed essential not only for knowledge transmission but also for cultivating critical life skills among learners, underscoring the importance of adopting innovative and practical teaching approaches in the educational system of Makueni County. These results agree with the assertions by Anderson-Levitt (2017) which described the key features of CBE, which emphasizes the development of competencies such as critical thinking, problem-solving, and collaboration, rather than the acquisition of specific knowledge or skills. The author discussed the benefits and challenges of CBE, including its potential to better prepare learners for the challenges of the 21st century, as well as concerns about its potential to perpetuate inequalities and to devalue specific forms of knowledge. The article also explores the global diffusion of CBE, highlighting the role of international organizations in promoting the adoption of CBE frameworks in different countries

Key informant M4 explained that;

“There is the need for teaching methodologies to be adaptable and responsive to the diverse needs of learners. I consider personalized and differentiated teaching strategies essential for enhancing educational outcomes. I've noticed a shift towards more experiential and inquiry-based learning methods, which promote critical thinking and problem-solving skills, contrasting with the less effective traditional rote learning methods that can hinder creative and critical thinking”.

The responses from the KII imply that there is need for teaching methodologies to be adaptable and responsive to the diverse needs of learners is highlighted, with a particular emphasis on

personalized and differentiated teaching strategies as key to improving educational outcomes. A noticeable shift towards experiential and inquiry-based learning methods is evident, which fosters critical thinking and problem-solving skills among learners. This approach stands in contrast to traditional rote learning methods, which are less effective in nurturing creative and critical thinking abilities, underlining the importance of innovative teaching strategies that cater to the varied learning styles and needs of learners in Makueni County.

Moreover, interviewee M7 explained that;

“The importance of modern and dynamic teaching methods, including technology integration in classrooms, can't be overstated in my opinion. Innovative methods using digital tools have transformed learners' outcomes positively. I believe these methodologies are key in fostering collaboration, creativity, and real-world application, leading to better educational results and effectively preparing learners for the future. The use of multimedia and interactive tools, in particular, has improved engagement and understanding”.

These responses indicate the significance of adopting modern and dynamic teaching methods, particularly the integration of technology in classrooms, is paramount. The incorporation of innovative digital tools has markedly enhanced learners' outcomes by transforming traditional educational practices. These methodologies are instrumental in promoting collaboration, creativity, and the application of knowledge to real-world scenarios, thereby improving educational results and equipping learners for future challenges. Specifically, the use of multimedia and interactive tools has been effective in increasing learner engagement and deepening understanding, highlighting the crucial role of technology in advancing the educational environment.

Finally, respondent M15 suggested that;

“There is need for teaching methods to cater to different learning styles and abilities. Methods emphasizing practical application over theoretical knowledge, and those promoting inclusivity and catering to learners with special needs, are vital for equitable learning outcomes. I am convinced that methodologies focusing on experiential learning, active participation, problem-solving, and group work enhance critical thinking, collaboration skills, and overall academic performance”.

Based on the thematic analysis results above; The KIIs emphasized that effective teaching methods, particularly those integrating real-life skills and competency-based education, positively influence learners' academic performance and future readiness. They highlighted the importance of adaptability and responsiveness of teaching methodologies to diverse learner needs, advocating for personalized and differentiated strategies that promote experiential and inquiry-based learning. Additionally, the integration of modern and dynamic teaching methods, including technology, was deemed crucial for fostering collaboration, creativity, and real-world application, ultimately leading to better educational results. Lastly, the KIIs stressed the necessity of catering to different learning styles and abilities, emphasizing practical application, inclusivity, and support for learners with special needs as essential elements for equitable learning outcomes. These results are generally consistent with conclusion made by Tsisindu, Joel, and Edward (2016) that educators lack the essential competencies to effectively address the academic necessities of learners with special needs (LWSNs).

4.5.5 Assessment Criteria

The fifth objective of the study was to determine the effect of assessment criteria on learners' outcome in Makueni County. Six statements on assessment criteria were presented to the respondents to collect their views regarding the extent of the use of various assessment criteria in their respective schools.

Table 4.16: Descriptive Statistics on Assessment Criteria

	Not at all	To some extent	Moderate Extent	Great Extent	Very Great Extent	Mean	Std. Dev.
Traditional stand and deliver instructions	5.00%	8.70%	6.50%	41.50%	38.40%	4.00	1.12
Learners copying notes, completing independent worksheet	8.00%	6.20%	8.00%	37.50%	40.20%	3.96	1.21
Teacher makers decision	6.80%	7.70%	9.60%	45.20%	30.70%	3.85	1.14
Learner are engaged and challenged to think while processing	5.90%	9.00%	6.50%	42.10%	36.50%	3.94	1.15
Learner know their goals for learning	10.80%	9.60%	20.70%	47.40%	11.50%	3.39	1.15
Thinking skills are routinely addressed	0.60%	2.20%	1.20%	70.30%	25.70%	4.18	0.62

Descriptive statistics results in Table 4.16, provide a comprehensive view of the extent to which different assessment strategies were being implemented in schools in Makueni County. For the traditional stand and deliver instructions, this strategy was reported to be utilized by the majority of respondents (79.9%), with 41.5% of them utilizing it to a great extent and 38.4% utilizing it to a very great level. This is demonstrated by the fact that the mean response was 4.00, and the SD was 1.12, which highlights the fact that it is prevalent in the instructional strategy. Despite being a traditional method, its high usage suggests a continued reliance on this approach, which may or may not align with contemporary educational demands. In the context of learners copying notes and completing independent worksheets, majority (77.7%) of the respondents to a great extent were using this approach. The mean score of 3.96 and a SD of 1.21 imply that while this method is widely used, there is some variation in its application, possibly reflecting differing views on its effectiveness.

In addition, the criteria where the teacher takes decisions was extensively embraced, as demonstrated by the fact that 76.9% of respondents expressed their use of this technique. The average value is 3.85, while the SD is 1.14 suggest its significant role in the assessment process, though it may also point to a teacher-centered approach in assessment practices. Majority (78.6%) of the respondents reported that engaging and challenging learners to think while processing was a method being adopted to great extent in the schools with a mean of 3.94 and a SD of 1.15. This highlights significant emphasis on interactive and thought-provoking assessment methods, which are crucial for deeper learning. The criteria where learners know their goals for learning showed a more diverse response, with 59% indicating its use to a great extent. The mean of 3.39 and a SD of 1.15 suggest a more moderate application of this criterion, which might reflect varying levels of learner-centered goal setting in the learning process.

Furthermore, thinking skills being routinely addressed was highly reported, with 96% (70.3% to a great extent and 25.7% to a very great extent) using this method, as indicated by a mean of 4.18 and a low SD of 0.62. This demonstrates a strong focus on developing thinking skills, which is essential for comprehensive learning and critical thinking development. The results had an overall mean response of 3.887, the findings indicate a diverse application of assessment criteria in

Makueni County schools. It is evident from the findings that traditional assessment criteria like stand and deliver instructions and note-copying are still prevalent in Makueni County, but there is also a significant focus on engaging learners in thinking and processing. This mix of traditional and interactive approaches suggests an evolving framework in assessment practices, aiming to cater to various learning needs and enhance overall learner outcomes.

The findings are consistent with observations by Jelagat's (2020) that Educational Assessment Resource Centers rarely implemented educational initiatives that specifically catered to the needs of children with special requirements. Furthermore, the research concluded that 9 out of 15 (60%) County Education Officers had an incomplete understanding of the roles played by the EARCs within their respective counties. The findings also supports the findings of a study by Mapunda, Omollo, and Bali (2017) which underscored the lack of specific policy structures aimed at executing specialized educational measures for pre-schoolers in the Dodoma municipality. As a result, the mismatch between policy goals and their practical realization, both within the municipal and educational institution contexts, became conspicuous.

Thematic Analysis

During the interviews with the curriculum support officers and sub county education officers in Makueni County, the KIIs were asked to give their opinions regarding assessment criteria and their effects on learners' outcomes in Makueni County. They were asked; do you think assessment criteria have any effect on learners' outcome in Makueni County? In Response, respondent M25 explained that;

“I strongly believe that assessment criteria should encompass comprehensiveness, adaptability, and fairness to effectively gauge learners' competencies and skills. Moreover, these criteria serve as guiding principles in the teaching process, establishing clear benchmarks for learner achievement. Many of us emphasize the imperative for assessment criteria to evolve in tandem with the evolving educational landscape, underscoring the need for staying current and relevant in the assessment process”.

The responses points to consensus among key informants in Makueni County that assessment criteria play a crucial role in influencing learners' outcomes. There is a strong belief that for assessments to truly reflect learners' competencies and skills, the criteria must be comprehensive, adaptable, and fair. These criteria not only serve to accurately measure learner achievement but

also act as key guidelines within the teaching process, setting clear benchmarks for what learners should accomplish. The need for assessment criteria to continuously evolve alongside the educational landscape is emphasized, highlighting the importance of keeping the assessment process up-to-date and relevant to ensure it effectively contributes to the educational development of learners. This agrees with the observations by KICD (2017) which revealed an inclination towards different evaluation methods for learners with special requirements. These methods include formative assessment, ongoing assessment, verbal assessment, assessment based on projects, and observation-centered assessment.

Another significant revelation from the interview pertains to the profound impact of assessment criteria on learners' learning strategies and priorities. Interviewee M16 explained that;

“It becomes apparent that well-designed criteria possess the power to influence how learners approach learning and set their study priorities. We collectively highlight a shift away from assessment methods solely centered on memorization, recognizing their limitations, and gravitating towards criteria that foster deeper engagement with the material, encouraging critical analysis and problem-solving skills. Furthermore, we place substantial emphasis on the importance of aligning assessment criteria with real-world skills and learning objectives. This alignment emerges as crucial for enhancing learners' holistic development and preparedness for the future. We also stress the necessity for diverse and holistic assessment methods that account for learners' varied learning processes and abilities, ultimately promoting more equitable learning outcomes”.

The responses from the KII further emphasises the transformative impact of well-structured assessment criteria on learners' learning approaches and priorities. There is a visible shift from traditional memorization-based assessments towards criteria that encourage deeper engagement, critical analysis, and problem-solving abilities in learners. The emphasis is on creating assessment criteria that are aligned with real-world skills and learning objectives, which is deemed essential for fostering learners' holistic development and preparing them for future challenges. Furthermore, the importance of implementing diverse and holistic assessment methods is highlighted, acknowledging the variety in learners' learning styles and abilities. Such methods are viewed as key to achieving more equitable and comprehensive learning outcomes, ensuring that all learners have the opportunity to demonstrate their knowledge and skills effectively.

Furthermore, respondent M35 asserted that;

“Assessment criteria wield significant and multifaceted influence over learners' outcomes. They shape not only learners' learning approaches but also guide the teaching process, ultimately determining the depth of understanding and skill development. The need for adaptability, fairness, alignment with real-world skills, and the incorporation of diverse assessment methods resonate as critical factors in our pursuit of improving educational outcomes in Makueni County”.

According to their responses, the respondents stressed the importance of assessment criteria being comprehensive, adaptable, and fair to effectively evaluate learners' competencies and skills, emphasizing their role as guiding principles in the teaching process. Moreover, a significant revelation was the influence of well-designed criteria on learners' learning strategies, shifting away from memorization-focused methods towards those that encourage deeper engagement, critical analysis, and problem-solving. Alignment of assessment criteria with real-world skills and learning objectives was deemed crucial for holistic learner development, and there was a strong emphasis on the necessity for diverse and equitable assessment methods. The assessment criteria were recognized as multifaceted influencers, shaping learning approaches, guiding teaching, and determining the depth of understanding and skill development, with adaptability, fairness, alignment with real-world skills, and diversity in assessment methods considered essential for improving educational outcomes in Makueni County. These KII responses concur with the observations by Mapunda, Omollo, and Bali (2017) which indicated serious lack of specific policy structures aimed at executing specialized educational measures for preschoolers in the Dodoma municipality. As a result, the mismatch between policy goals and their practical realization, both within the municipal and educational institution contexts, became conspicuous.

4.5.6 Stakeholder awareness

As the sixth objective, this study sought to find out how raising stakeholder awareness affected student performance in Makueni County. Respondents were asked to rate the level of involvement of different stakeholders in their schools based on nine statements about stakeholder awareness. The purpose of this survey was to gauge the level of participation from various parties in the adoption of CBC curricula in Makueni County schools. Table 4.17 presents the descriptive statistics results generated for stakeholder awareness.

Table 4.17: Descriptive Statistics on Stakeholder awareness

Stakeholder	Not at all	To Some Extent	Moderate Extent	Great Extent	Very Great Extent	Mean	Std. Dev.
Learners	3.40%	2.50%	5.60%	64.40%	24.10%	4.03	0.84
Employers	2.50%	3.40%	5.90%	58.20%	30.00%	4.10	0.84
Consultants or specialists	1.50%	0.30%	5.60%	21.10%	71.50%	4.61	0.75
Local universities	1.90%	3.10%	7.70%	57.90%	29.40%	4.1	0.81
Curriculum Support Officers	0.60%	0.60%	5.30%	56.00%	37.50%	4.29	0.65
Professional bodies	0.90%	1.20%	2.80%	43.70%	51.40%	4.43	0.7
Community Research institutions	1.50%	6.20%	5.90%	47.70%	38.70%	4.16	0.9
Assessors and moderators	0.60%	0.90%	29.70%	39.00%	29.70%	3.96	0.83
Overall Mean						4.229	

The findings reveal that most respondents (64.40%) demonstrated a strong awareness of stakeholder involvement in implementing the CBC curriculum in schools within Makueni County. This high level of awareness is supported by a mean score of 4.03 and a standard deviation (SD) of 0.84, highlighting the positive impact of stakeholder engagement on learners' outcomes. Among the stakeholders, employers were reported to be highly involved, with 58.20% of respondents acknowledging significant participation. The responses yielded a mean score of 4.1 and an SD of 0.84, suggesting that employer engagement plays a critical role in facilitating CBC curriculum implementation. Specialists or consultants were perceived as the most actively involved stakeholders, with 71.50% of respondents indicating very high engagement. Their participation was reflected in a mean score of 4.61 and an SD of 0.75, underscoring their pivotal role in the curriculum's execution. Local universities also contributed substantially, as 57.90% of respondents noted their involvement. This group achieved a mean score of 4.1 and an SD of 0.81, emphasizing the importance of collaboration with universities for effective CBC implementation. Curriculum Support Officers were acknowledged as valuable contributors, with 56.00% of respondents indicating considerable involvement. Their role was further supported by a mean score of 4.29 and an SD of 0.65, demonstrating their significance in shaping the curriculum's success in

the region. Similarly, professional organizations were recognized for their substantial engagement, with 51.40% of respondents affirming their participation. The mean score of 4.43 and an SD of 0.7 indicate that these organizations were actively involved within the county. Community involvement was also highlighted, with 47.70% of respondents rating their participation as significant. The community's role in CBC implementation was reflected in a mean score of 4.16 and an SD of 0.9, showcasing their active engagement with schools in Makueni County.

Research institutions, although less prominent compared to other stakeholders, still contributed notably, with 39.00% of respondents recognizing their engagement. This involvement was supported by a mean score of 3.96 and an SD of 0.83, indicating their valued contribution to the CBC curriculum's implementation. Assessors and moderators also played a significant role, with 48.90% of respondents acknowledging their active involvement in the process. The responses had a mean of 4.38 and a SD of 2.32, indicating diversity in the level of involvement of this group in the execution of the CBC curriculum. The results of the descriptive statistics indicate that stakeholders significantly influence learners' outcomes in Makueni County, with various degrees of contribution from different stakeholders. These findings underscore the necessity of ongoing collaboration and involvement with stakeholders to improve the educational experience and outcomes for learners in the region.

Thematic Analysis

During the interviews with the curriculum support officers and Sub-County education officers in Makueni County, the KIIs were asked to give their opinions regarding stakeholder awareness and its effects on learners' outcomes in Makueni County. They were asked, 'In your own opinion comment on stakeholders' awareness on CBC learning material in Makueni County.' In Response, key interviewee M1 explained that;

"In Makueni County, I've observed mixed environment of awareness regarding Competency-Based Curriculum (CBC) learning materials among various stakeholders, including educators, parents, and community members. From my interactions, I've noticed that while some stakeholders, especially educators, have a strong understanding of CBC, there is a recurring theme of needing more engagement and better information dissemination to reach other stakeholders like parents and community leaders. It's

important to note that awareness levels vary widely, particularly between urban and rural areas”.

These responses lead to the conclusion that in Makueni County, there are a varied level of awareness about the Competency-Based Curriculum (CBC) learning materials among different stakeholders such as educators, parents, and community members. Insights suggest that while educators may have a robust grasp of the CBC framework, there is a significant need for enhanced engagement and improved dissemination of information to other key stakeholders, including parents and community leaders. This disparity in awareness is notably pronounced when comparing urban to rural areas, indicating a critical need for targeted outreach and education efforts to ensure all stakeholders are well-informed and actively involved in the CBC implementation process. This concurs with the findings of a study by Sturdy, Smith-Merry, and Freeman (2012) which highlighted the challenges and limitations of stakeholder consultation as a form of social mobilization. The authors suggested that stakeholder consultation can be undermined by power imbalances and conflicts of interest among stakeholders, and that it may not always lead to meaningful change or transformation in policy outcomes.

Respondent M8 indicated that;

“From my perspective, I can say that I have a strong awareness of the Competency-Based Curriculum (CBC). However, I've noticed that not everyone in our community shares the same level of understanding. We really need more engagement and better communication to reach parents and community leaders who might not be as familiar with CBC”.

These observations indicate a personal strong understanding of the Competency-Based Curriculum (CBC), but this awareness is not uniformly shared across the community. There is a recognized need for increased engagement and improved communication strategies to better inform parents and community leaders who may not have the same level of familiarity with CBC. This indicates the importance of developing and implementing effective outreach initiatives to ensure a broad and comprehensive understanding of CBC among all community stakeholders, fostering a more inclusive and supportive educational environment.

Respondent M 11 responded by saying;

“I do have some awareness of CBC, but I'll admit that I don't fully understand its practical aspects. I think there's a need for more hands-on experiences with CBC materials. We need to go beyond just knowing about it; we need to understand how it works in practice. In our community, awareness of CBC varies widely. Some of us are quite informed, but others are not. I believe that comprehensive and accessible information dissemination strategies are crucial to bridge these awareness gaps”.

Moreover, respondent M14 said that;

“I agree that awareness is not enough for effective CBC implementation. Practical understanding and application are key. This means not only being aware but also receiving proper training, workshops, and ongoing support. This is especially crucial in rural areas where the awareness gap is more pronounced. Living in a rural area, I can say that there's less awareness of CBC compared to urban areas. We really need more support and education here to ensure that our children get the same opportunities. Just being aware is not sufficient; we need practical knowledge and skills”.

Based on the responses above, KII observed varying levels of awareness among stakeholders, including educators, parents, and community members, with educators generally having a stronger understanding. However, there was a consistent theme emphasizing the need for increased engagement and better information dissemination to reach parents and community leaders who may not be as familiar with CBC, particularly in rural areas where awareness gaps were more pronounced. Stakeholders stressed that awareness alone is insufficient, highlighting the importance of practical understanding through hands-on experiences, training, workshops, and ongoing support to ensure effective CBC implementation and equitable educational opportunities for all learners in the county. These responses mirror the conclusion arrived at by Nyambe (2020) that stakeholders, including parents, community members, and local leaders, were actively involved in school activities, which improved the quality of education provided in these schools. The study also found that stakeholder involvement positively influenced learners' academic performance, attendance, and discipline.

4.5.7 Learners' Outcome

The dependent variable in this study is learners' outcome in Makueni County. Four statements on learners' outcome were presented to the respondents to rate the average learning outcome on the basis of four of competences.

Table 4.18: Descriptive Statistics on Learners' Outcome

Statement	Poor	Fair	Good	Very good	Excellent	Mean	Std. Dev.
Learners are able to analyze complex problems and come up with innovative solutions.	0.00%	22.90%	32.80%	27.60%	16.70%	3.38	1.02
Learners are able to apply effective cognitive strategies for learning and problem-solving.	1.20%	14.20%	36.50%	31.90%	16.10%	3.47	0.97
Learners are able to effectively communicate verbal information.	0.30%	8.70%	44.00%	28.20%	18.90%	3.57	0.9
Learners are able to demonstrate proficient motor skills.	0.60%	11.80%	36.80%	31.60%	19.20%	3.57	0.95
Overall Mean						3.498	

Table 4.18 presents the descriptive statistics for learners' outcomes in Makueni County, focusing on four key competencies. The results show that none of the respondents rated learners' ability to analyze complex problems and innovate as poor, 27.60% of respondents perceived learners as having a very good ability in analyzing complex problems and innovating, while an additional 16.70% considered it excellent. The mean response for this competency was 3.38, indicating a moderate to good level of competence, with a SD of 1.02, suggesting some variability in perceptions.

Additionally, the results show that only 1.20% of the respondents rated learners' ability to apply effective cognitive strategies as poor, the majority of respondents (36.50%), rated learners' ability to apply effective cognitive strategies as good, and while 31.90% deemed it very good. The mean response for this competency was 3.47, reflecting a relatively good perception, with a SD of 0.97, indicating relatively consistent views among the respondents. Moreover, most (44.00%) of the respondents rated learners' ability to effectively communicate verbal information as Good, and

28.20% rated it as Very Good. The mean response for this competency was 3.57, signifying a good level of proficiency, with a SD of 0.9, suggesting relatively consistent perceptions among the respondents.

Finally, no respondents rated learners' ability to demonstrate proficient motor skills as Poor. Approximately a third (31.60%) of the respondents considered learners to have Very Good motor skills, while 19.20% rated learners' ability to demonstrate proficient motor skills as Excellent. The mean response for this competency was 3.57, indicating a good level of motor skills, with a SD of 0.95, suggesting some variability in perceptions. These findings suggest that, learners in Makueni County possess commendable competencies across the analyzed areas. While there is some variability in perceptions, particularly in the ability to analyze complex problems and innovate, the overall view is positive. These results provide valuable insights into how learners' outcomes are perceived in the county and can inform educational policies and practices to further enhance these competencies.

4.6 Diagnostic Tests

4.6.1 Test for Multicollinearity

In the context of a multiple regression model, multicollinearity is present when there is a significant degree of correlation between two or more predictor variables. If there is at least one exact linear relationship between some of the variables in a set of variables, then the set of variables is considered to be perfectly multi-collinear. Tolerance of the variable and the value of the variance inflation factor (VIF) were utilized, and it was determined that the absence of multicollinearity was indicated by values greater than 0.2 for Tolerance and values less than 10 for VIF.

Table 4.19: Test for Multicollinearity

Variable	Collinearity Statistics	
	Tolerance	VIF
Availability of Learning Resources	0.570	1.754
CBC Supporting Infrastructure	0.766	1.306
Teacher Capacity Building	0.708	1.413
Teaching Methodologies	0.562	1.780
Assessment Criteria	0.408	2.448
Stakeholder Awareness	0.469	2.131

The results of the multicollinearity test, indicate that all of the variables availability of learning resources, CBC supporting infrastructure, teacher capacity building, teaching methodologies, assessment criteria and stakeholder awareness were free from multicollinearity. These were among the variables that were considered independent. This paved way for regression analysis to be conducted on the data.

4.6.2 Test for Normality of Data

A random variable's likelihood of having a normal distribution can be ascertained using the normalcy concept. As it pertains to statistical tests, it is a look at whether the data is normal. Data may include non-normal results, modes, outliers, inaccurate distributions, measurement errors, zero or infinite limits, or sparse collections if the tests do not follow normality (Singh & Masuku, 2014). The proper fitting of a linear model relies on the dependent variable having a normal distribution. Table 4.20 displays the results of the Kolmogorov-Smirnov test, which was used to ascertain if the dependent variable followed a normal distribution.

Table 4.20: Test for Normality

	Kolmogorov-Smirnov^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Learners' Outcomes	.107	323	.089	.979	323	.105
a. Lilliefors Significance Correction						

The normality of the dependent variable was confirmed through statistical tests and visual analysis. Both the Shapiro-Wilk and Kolmogorov-Smirnov tests returned p-values exceeding 0.05, indicating that the data adhered to a normal distribution. The results of these tests are detailed in Table 4.20. Further support for the normality of the data came from the histogram depicted in Figure 4.1, which provided a visual affirmation of the distribution.

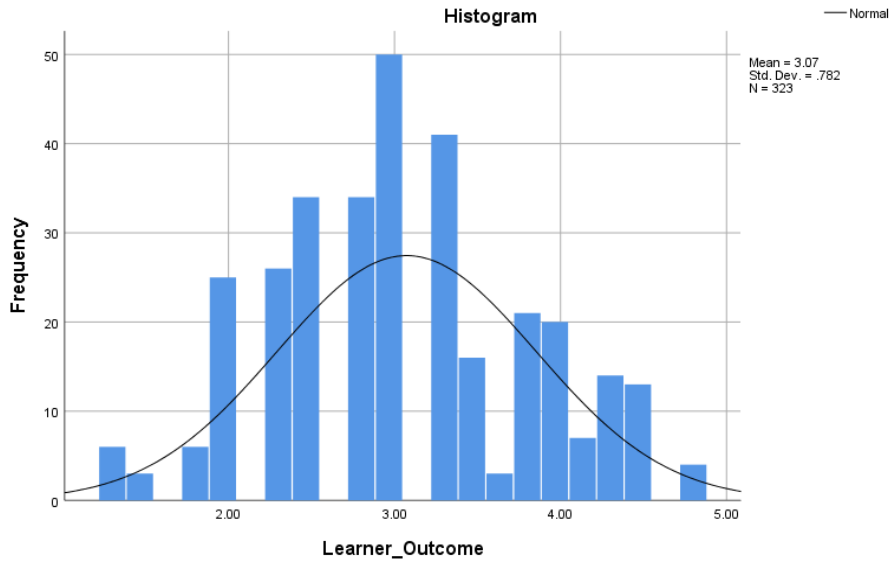


Figure 4.1: Normality Histogram

Source: Field Data (2023)

4.6.3 Test of Heteroscedasticity

The Breusch-Pagan test is a statistical method used to compare the null hypothesis, which assumes constant error variances, against the alternative hypothesis, which suggests that error variances vary. This test specifically examines the presence of heteroscedasticity in the data. The null hypothesis, stating that heteroscedasticity is absent, is tested, and if the p-value exceeds 0.05, the null hypothesis is rejected. The results indicate that the data support the alternative hypothesis, confirming the presence of heteroscedasticity.

Table 4.21: Heteroscedasticity Results

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity

Ho: Constant variance

Variables: fitted values of Learners' Outcomes

chi2 (1) = 0.836

Prob > chi2 = 0.1592

It can be seen from the findings shown in Table 4.29 that the probability chi-square value was $0.1592 > 0.05$, which indicates that heteroscedasticity was not present in the samples. This implies that the variability of the residuals was relatively consistent across the range of data points. This

is important because heteroscedasticity is likely to affect the reliability of regression models. Therefore, the absence of heteroscedasticity in the data implies that the assumptions of homoscedasticity, where the variances of the errors are constant, were met, enhancing the validity of the regression analysis results.

4.7 Inferential Statistics

In addition to the descriptive statistics and discussed above, this study conducted inferential analysis which included both Pearson correlation analysis and regression analysis. With regards to regression analysis, this study carried out both simple and multiple linear regression analysis. The inferential analysis conducted are discussed below.

4.7.1 Correlation Analysis Results

Using a matrix of Pearson's Coefficients of Correlation became the tool of choice for figuring out how much one variable's value changes in relation to another variable's changes. A correlation coefficient between two variables should be between minus one and plus one, with minus one signifying an inverse relationship, plus one a perfect positive correlation, and zero signifying no association whatsoever (Kothari and Garg, 2014). The study's findings are presented in Table 4.22, which is a correlation matrix constructed using the SPSS software and relating the researched variables.

Table 4.22: Correlation Matrix

		Learners' Outcome	Learning Resources	CBC Support Infrastructure	Teacher Capacity Building	Teaching Methodologies	Assessment Criteria	Stakeholder awareness
Learners' Outcome	Pearson Correlation	1.000						
	Sig. (2-tailed)							
Learning Resources	Pearson Correlation	.764**	1.000					
	Sig. (2-tailed)	0.000						
CBC Support Infrastructure	Pearson Correlation	.482**	.413**	1.000				

	Sig. (2-tailed)	0.000	0.000					
Teacher Capacity Building	Pearson Correlation	.639**	.481**	.327**	1.000			
	Sig. (2-tailed)	0.000	0.000	0.000				
Teaching Methodologies	Pearson Correlation	.660**	.528**	.312**	.435**	1.000		
	Sig. (2-tailed)	0.000	0.000	0.000	0.000			
Assessment Criteria	Pearson Correlation	.599**	.499**	.325**	.359**	.583**	1.000	
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000		
Stakeholder awareness	Pearson Correlation	.535**	.452**	.384**	.331**	.461**	.706**	1.000
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	

** Correlation is significant at the 0.01 level (2-tailed).

All of the p-values for the correlation analysis results as presented in Table 4.22 are less than 0.01, indicating a significant association between the independent variables (learners' outcomes) and CBC supporting infrastructure, teacher capacity building, instructional methodologies, evaluation criteria, and stakeholder awareness. What this means is that there is a 95% confidence level of statistical significance between the dependent variable and each of the independent variables. Additionally, the results demonstrate that there is no problem with multicollinearity among the variables, since none of the Pearson Correlation Coefficients (r values) surpass 0.8.

The findings show a strong positive and significant association between availability of learning resources and learners' outcome in Makueni County ($r = 0.764$, $p < 0.05$). This implies that the more adequately equipped schools are with necessary learning materials, the better the learners' performance outcome. This underscores the need for policymakers and educational authorities to prioritize resource allocation in the educational sector, especially in the context of implementing a competence-based curriculum. The findings are consistent with the findings of a study by Bukoye (2018) that showed significantly strong and positive correlation between academic performance and learning materials. Bukoye (2018) indicated that schools equipped with ample resources

tended to achieve better academic results compared to schools with fewer materials. Additionally, the results agree with the observations by Okongo, Ngao, Rop, and Nyongesa (2015) that schools under the management of individuals demonstrated robust performance as a result of having ample and suitable teaching and learning resources.

Additionally, the results show that there is a strong positive and significant association between teacher capacity building and learners' outcome ($r = 0.639$, $p < 0.05$). This implies that there is a direct link between teacher capacity building and learners' outcome, suggesting that when teachers are better equipped with the skills and knowledge required for competence-based curriculum, learners benefit significantly. This concurs with assertions by Desimone and Garet (2015) that, effective teacher PD is critical to improving learner learning outcomes and closing achievement gaps. They outlined five essential aspects of successful teacher professional development: emphasis on subject matter, interactive educational experiences, logical connection, time allocation, and group involvement. The findings further are in support of the conclusion by Chaudhary (2015) that, the execution of the curriculum is influenced by a range of elements, including educators, learners, ideological factors, and cultural education. The study also unveiled that the government supplied tangible resources such as sports facilities, workshops, libraries, classrooms, laboratories, and recreational areas. Chaudhary (2015) also highlighted that the effective execution of the curriculum was notably impacted by the availability of superior resources and suitable facilities.

The results also show a strong positive and significant association between teaching methodologies and learners' outcome ($r = 0.660$, $p < 0.05$). This suggest that the way teachers deliver the curriculum, how they engage learners, the techniques they use to explain concepts, and the variety and adaptability of their instructional methods are significantly associated with learners' learning outcome and success. The implication of this finding is that there is a need for a focus on innovative, effective teaching methodologies that are aligned with the competence-based curriculum. The finding concurs with what Anderson-Levitt (2017) found that that CBE is becoming increasingly popular as a framework for education in many countries, driven in part by global policy actors such as the World Bank and UNESCO. The study described the key features of CBE, which emphasizes the development of competencies such as critical thinking, problem-solving, and collaboration, rather than the acquisition of specific knowledge or skills. Anderson-Levitt (2017) concluded that, while the diffusion of CBE has been driven in part by global policy

actors, its implementation has been shaped by local contexts and actors, resulting in a diversity of approaches and practices across different countries. The results also concurs with the assertions by Nodine (2016) that emergence of online learning and other technological innovations have enabled the growth of CBE programs and made them more accessible to learners.

Moreover, the study found a moderate positive and significant association between CBC Support infrastructure and learners' outcome ($r = 0.482$, $p < 0.05$). This result implies that the physical and organizational structures in place to support the CBC, such as classroom environments, technological resources, and administrative support systems, are important factors in the effective implementation of the curriculum and the achievement of desired educational outcomes. While the correlation is moderate, it still signifies that improvements in the CBC support infrastructure are likely to lead to better educational results for learners. These findings are consistent with those of Kanyonga, Mtana and Wendt (2019) which indicated that Tanzania encountered obstacles such as a scarcity of human resources and physical materials needed for proper implementation. A crucial finding indicated that the successful incorporation of the Competency-Based Curriculum (CBC) heavily relies on effectively training teachers and educators.

Furthermore, the findings revealed a strong positive and significant association between assessment criteria and learners' outcome ($r = 0.599$, $p < 0.05$). The findings imply that when assessments are well-designed, aligned with curriculum objectives, and effectively administered, they are likely to enhance learner learning and outcomes. It suggests that assessments should not only measure learner knowledge but also encourage and guide learning, providing feedback that helps learners understand their strengths and areas for improvement. The findings are in agreement with those of Kuyini and Major (2012) which revealed that while a significant number of schools had School Intervention Teams (SIT) responsible for directing learners towards assessments, there was a lack of clarity regarding the precise roles of these teams in certain schools.

Finally, it is evident that there existed a moderate positive and significant association between stakeholder awareness in implementation of competency based curriculum policy and learners outcome ($r = 0.535$, $p < 0.05$). This result suggests that active engagement of stakeholders such as parents, community members, educators, and policy makers in the implementation of the CBC is a key factor in enhancing learner learning and achievement. The involvement of these stakeholders likely brings diverse perspectives, resources, and support systems, which contribute to a more

holistic and effective educational experience for learners. This finding implies that fostering strong partnerships and collaboration among all parties involved in education can lead to more successful implementation of the curriculum and improved educational outcomes. These findings agree with the conclusion made by Biskupek (2016) that stakeholder power have a significant impact on project implementation, and that the ability of project managers to effectively manage stakeholder relationships is crucial to project success. The study identified several key factors that can influence stakeholder power, including the stakeholder's level of interest in the project, their level of influence over project decisions, and their level of dependence on the project. The article also provided several practical recommendations for project managers to manage stakeholder relationships effectively, such as identifying key stakeholders early in the project, engaging stakeholders in the project planning process, and communicating effectively with stakeholders throughout the project lifecycle.

4.7.2 Regression Analysis

This study chose linear regression analysis so that the data could fit into the model that was developed. This was because there were a lot of independent variables that affected the total, and the dependent variable was a ratio scale, thus the total of the statements changed depending on those variables. To find out how much the independent variable could explain the data without the dependent variable, we used the modified R square. The F statistics (ANOVA) were employed to ascertain the model's data-fitting accuracy. The regression coefficient summary was used to show how the success of competence-based curriculum implementation affected learner outcomes in Makueni County, Kenya.

4.7.2.1 Availability of Learning Resources and Learners' Outcomes

Linear regression analysis was conducted to assess the relationship between availability of learning resources and learners' outcomes. Table 4.23 shows model summary between availability of learning resources and learners' outcomes.

Table 4.23: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.764a	0.584	0.582	0.50574
a Predictors: (Constant), Learning Resources				

Source: Field Data, 2023

Based on the results in Table 4.23, R-squared was 0.584, implying that 58.4% of the variation in learners' outcomes in Makueni County is explained by the availability of learning resources. This implies a strong relationship where changes in learning resources significantly affect learners' outcomes. Additionally, the results revealed an adjusted R Squared of 0.582. This implies that after adjusting for any predictors in the model, 58.2% of the variation in learners' outcomes in the County is accounted for by the availability of learning resources. This value is very close to the R Squared, indicating a good fit of the model to the data with minimal overfitting.

Table 4.24 shows the NOVA results.

Table 4.24: ANOVA

Model		Sum Squares	of df	Mean Square	F	Sig.
1	Regression	115.041	1	115.041	449.771	.000 ^b
	Residual	82.104	321	0.256		
	Total	197.145	322			
a. Dependent Variable: Learners' Outcomes						
b. Predictors: (Constant), Learning Resources						

Source: Field Data, 2023

Table 4.24 presents the results of the analysis of variance (ANOVA), demonstrating that the model effectively explains the influence of learning material availability on learner outcomes. With an F-value of 449.771 and a p-value of 0.000 well below the 0.05 threshold for statistical significance these findings confirm that the observed relationship is not attributable to random variation but represents a meaningful result. The ANOVA results provide robust evidence that the availability of learning resources significantly impacts learners' outcomes in Makueni County. Further details on regression coefficients are provided in Table 4.25.

Table 4.25: Regression Coefficient Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.899	0.106		8.451	0.000
	Learning Resources	0.669	0.032	0.764	21.208	0.000

a. Dependent Variable: Learners' Outcomes

Source: Field Data, 2023

$$Y = 0.899 + 0.669X_1$$

Where

Y= Learners' Outcomes

X₁= Availability of Learning Resources

The results shown in Table 4.25 from the regression coefficient show that there is a strong and statistically significant correlation between the accessibility of learning resources and the results achieved by learners ($\beta=0.669$, $p=0.000<0.05$). This indicates that there is an expected equivalent improvement of 0.669 units in the outcomes of learners for every unit increase in the amount of learning materials that are available to them. The t-statistics value of 21.208 and the p-value of 0.000 both lend further support to the claim that this effect is statistically significant, strongly indicating that better access to learning resources is a key factor in improving educational outcomes among learners in Makueni County. These findings point to the critical role played by adequate learning resources in educational settings, aligning with educational theories that emphasize the importance of resource availability in enhancing the learning experience and outcomes. This agrees with the findings of a study by Bukoye (2018) which demonstrated a significantly strong and positive correlation between academic performance and learning materials. Bukoye (2018) also found that schools equipped with ample resources tended to achieve better academic results compared to schools with fewer materials. Moreover, these findings corresponds with the results of a study by Okongo, Ngao, Rop, and Nyongesa (2015) which revealed that schools under the management of individuals demonstrated robust performance as a result of having ample and suitable teaching and learning resources.

4.7.2.2 CBC Supporting Infrastructure and Learners' Outcomes

The second objective of this study was to investigate the effect of CBC supporting infrastructure on learners' outcome in Makueni County. Table 4.26 shows model summary between CBC supporting infrastructure and learners' outcomes.

Table 4.26: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.482a	0.232	0.229	0.68684
a Predictors: (Constant), CBC Support infrastructure				

Source: Field Data, 2023

The results in Table 4.26 shows a coefficient of determination (R-squared) of 0.232 for the relationship between Competency-Based Curriculum supporting infrastructure and learners' outcomes in Makueni County. This implies that 23.2% of the variation in learners' outcomes in the county is attributed to the CBC supporting infrastructure. Furthermore, the adjusted R-Squared value of 0.229 suggests that after accounting for any predictors in the model, 22.9% of the change in learners' outcomes in the county is explained by CBC supporting infrastructure. These results point to the importance of the CBC supporting infrastructure in educational outcomes.

Table 4.27 shows the NOVA results.

Table 4.27: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	45.715	1	45.715	96.907	.000 ^b
	Residual	151.43	321	0.472		
	Total	197.145	322			
a. Dependent Variable: Learners' Outcomes						
b. Predictors: (Constant), CBC supporting infrastructure						

Source: Field Data, 2023

The findings from the ANOVA may be seen in Table 4.27. This data shows that the model successfully explained the impact of CBC supporting infrastructure on student achievement. The fact that the F-value is 96.907 and the p-value is 0.000, both of which are much lower than the

traditional threshold of 0.05 for statistical significance, is evidence of the significance of this finding. These ANOVA results provide strong evidence that CBC supporting infrastructure plays a significant role in influencing learners' outcomes in the county. Table 4.28 shows regression coefficient results.

Table 4.28: Regression Coefficient Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.278	0.186		6.861	0.004
	CBC supporting infrastructure	0.495	0.05	0.482	9.844	0.001

a. Dependent Variable: Learners' Outcomes

Source: Field Data, 2023

$$Y = 1.278 + 0.495X_2$$

Where

Y = Learners' Outcomes

X₂ = CBC supporting infrastructure

The regression coefficient results in Table 4.28 demonstrate a positive and statistically significant association between Competency-Based Curriculum (CBC) supporting infrastructure and learners' outcomes ($\beta = 0.495$, $p = 0.001 < 0.05$). This indicates that for every one-unit improvement in the availability and support of CBC infrastructure, there is a corresponding 0.495-unit increase in student outcomes. The t-statistic value of 9.844 and the p-value of 0.001 further reinforce the significant impact of CBC infrastructure on enhancing educational outcomes in Makeni County.

These findings highlight the critical role of investing in and maintaining CBC infrastructure to improve learners' educational experiences and achievements. This aligns with the broader objectives of competency-based education, which aims to elevate the quality of education and learner outcomes. These results are consistent with the findings of Adalikwu and Iorkpilgh (2013), who reported a significant relationship between the use of instructional materials and the academic performance of senior secondary school Chemistry students in Cross River State, Nigeria.

4.72.3 Teacher Capacity Building and Learners' Outcomes

The third objective of this study was to determine the effect of teacher capacity building on learners' outcome in Makueni County. Table 4.29 shows model summary between teacher capacity building and learners' outcomes.

Table 4.29: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.639a	0.409	0.407	0.60268
a Predictors: (Constant), Teacher Capacity Building				

Source: Field Data, 2023

The results in Table 4.29 revealed a coefficient of determination (R-squared) of 0.409 for the relationship between teacher capacity building and learners' outcomes in Makueni County. This implies that 40.9% of the variance in learners' outcomes is accounted for by teacher capacity building, indicating a strong relationship between the level of teacher capacity building and the outcomes of learners. The adjusted R-square value was 0.407 suggesting that after accounting for any predictors in the model, 40.7% of the change in learners' outcomes in the county is explained by teacher capacity building.

Table 4.30 shows the NOVA results.

Table 4.30: ANOVA

Model		Sum Squares	df	Mean Square	F	Sig.
1	Regression	80.55	1	80.55	221.763	.000 ^b
	Residual	116.595	321	0.363		
	Total	197.145	322			
a. Dependent Variable: Learners' Outcomes						
b. Predictors: (Constant), Teacher Capacity Building						

Source: Field Data, 2023

Based on the ANOVA results presented in Table 4.30, In Makueni County, it is clear that the model that was utilized was successful in providing an explanation for the large influence that teacher capacity building had on the results of learners. The fact that the F-value is 221.763 and

the p-value is 0.000, which is lower than the essential p-value of 0.05, demonstrates that the model is significant in terms of its ability to explain this association. These results indicate the importance of teacher capacity building as a key factor in positively influencing educational outcomes in the county. Table 4.31 shows regression coefficient results.

Table 4.31: Regression Coefficient Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.911	0.149		6.118	0.001
	Teacher Capacity Building	0.628	0.042	0.639	14.892	0.000

a. Dependent Variable: Learners' Outcomes

Source: Field Data, 2023

$$Y = 0.911 + 0.628X_3$$

Where

Y = Learners' Outcomes

X₃ = Teacher Capacity Building

The relationship between teacher capacity building and learners' outcomes was favourable and statistically significant ($\beta=0.628$, $p<0.001$). This means that the projected improvement in learner outcomes in the county is 0.628 units for every unit improvement in teacher capacity building. Teacher capacity building significantly improves students' academic performance in Makeni County, according to a t-statistics value of 14.892 and a p-value lower than 0.001. Teachers play a crucial role in enhancing the quality of education and student results, and these findings show how important it is to invest in and enhance their capacity to positively affect students' educational experiences and accomplishments. These findings concur with the observations of a study by Komba and Mwandanji (2015) which revealed that a significant proportion of educators lacked sufficient familiarity with the curriculum. The research also disclosed that most of the evaluated lesson plans did not exhibit the characteristics of a competent-based lesson plan. Additionally, the

study pointed out that teachers' engagement of learners in classroom activities was generally inadequate, and fewer than half of the observed teachers conducted formative assessments. These findings also concur with the conclusion made by Makunja (2016) that there is need for the Ministry of Education to formulate strategies to guarantee the presence of teaching materials that are in line with the CBC principles. Ultimately, the research underscored the significance of adequately training teachers, offering suitable educational tools, and ensuring ample classroom space as essential elements for the effective implementation of the Competency Based Curriculum.

4.7.2.4 Teaching Methodologies and Learners' Outcomes

The fourth specific objective of this study was to investigate the effect of teaching methodologies on learners' outcome in Makueni County. Table 4.32 shows model summary between teaching methodologies and learners' outcomes.

Table 4.32: Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.660a	0.435	0.434		0.58884
a Predictors: (Constant), Teaching Methodologies					

Source: Field Data, 2023

The results in Table 4.32 show a coefficient of determination (R-squared) of 0.435 for the relationship between teaching methodologies and learners' outcomes in Makueni County. This implies that 43.5% of the change in learners' outcomes in Makueni County is explained by the teaching methodologies employed. This suggests a strong relationship between the teaching methodologies used and the outcomes of learners. The adjusted R-square value of 0.434 further suggests that after accounting for any predictors in the model, 43.4% of the variation in learners' outcomes is explained by the teaching methodologies employed. These results points to the critical effect of teaching methodologies on educational outcomes in Makueni County.

Table 4.33 shows the NOVA results.

Table 4.33: ANOVA Results

Model		Sum Squares	df	Mean Square	F	Sig.
1	Regression	85.844	1	85.844	247.577	.000 ^b
	Residual	111.302	321	0.347		
	Total	197.145	322			
a. Dependent Variable: Learners' Outcomes						
b. Predictors: (Constant), Teaching Methodologies						

Source: Field Data, 2023

Table 4.33 presents the findings from the analysis of variance (ANOVA), showing that the model used is statistically significant in explaining the relationship between teaching approaches and learners' outcomes. The statistical significance is supported by an F-value of 247.577 and a p-value of 0.000, which is below the threshold of 0.05. These results highlight the importance of teaching approaches as a key factor in enhancing educational outcomes, emphasizing their critical role in positively influencing learning achievements in the county. Results of the regression coefficient are presented in Table 4.34.

Table 4.34: Regression Coefficient Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.086	0.13		8.325	0.002
	Teaching Methodologies	0.607	0.039	0.660	15.735	0.001
a. Dependent Variable: Learners' Outcomes						

Source: Field Data, 2023

$$Y = 1.086 + 0.607X_4$$

Where

Y= Learners' Outcomes

X₄= Teaching Methodologies

Teaching methodologies had a positive and statistically significant effect on learners' outcomes ($\beta=0.607$, $p<0.001$). This implies that for every unit improvement in teaching methodologies employed, learners' outcomes is expected to improve by 0.607 units in learners' outcomes in the County. This significant effect is further supported by a t-statistics value of 15.735 and a p-value of less than 0.001, indicating that teaching methodologies play an important role in enhancing educational outcomes among learners in Makueni County. These findings points to the importance of developing effective teaching methodologies to positively impact learners' educational experiences and achievements, reflecting the vital role of teaching approaches in facilitating and improving the quality of education and learner outcomes.

These findings on teaching methodologies agrees with the observations by Nodine (2016) that, the evolution of CBE over time, highlighting key milestones such as the establishment of the Council for Adult and Experiential Learning (CAEL) in the 1970s, plays a major role in promoting the development of CBE programs in higher education. The author also discussed the emergence of online learning and other technological innovations, which have enabled the growth of CBE programs and made them more accessible to learners. In addition, Tsisindu, Joel, and Edward (2016) pointed out that educators lack the essential competencies to effectively address the academic necessities of learners with special needs (LWSNs). Moreover, the study revealed that these teachers rarely implement personalized education programs (IEPs) to address the individualized needs of the learners.

4.7.2.5 Assessment Criteria and Learners' Outcomes

The fifth objective of the study was to determine the effect of assessment criteria on learners' outcome in Makueni County. Table 4.35 shows model summary between assessment criteria and learners' outcomes.

Table 4.35: Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.599a	0.359	0.357		0.62765
a Predictors: (Constant), Assessment Criteria					

Source: Field Data, 2023

As depicted by Table 4.35, the model summary results yielded R-squared value of 0.359 for the relationship between assessment criteria and learners' outcomes in Makueni County. This implies that 35.9% of the change in learners' outcomes in Makueni County is explained by the assessment criteria used. This indicates a significant relationship between the assessment criteria employed and the outcomes of learners. The results also revealed an adjusted R-square value of 0.357, implying that after accounting for any predictors in the model, 35.7% of the variation in learners' outcomes is explained by the assessment criteria employed. These results point to the significance of assessment criteria in enhancing educational outcomes in Makueni County.

Table 4.36 shows the NOVA results.

Table 4.36: ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70.69	1	70.69	179.442	.000 ^b
	Residual	126.456	321	0.394		
	Total	197.145	322			
a. Dependent Variable: Learners' Outcomes						
b. Predictors: (Constant), Assessment Criteria						

Source: Field Data, 2023

Table 4.36 provides the results of the analysis of variance (ANOVA), indicating that the model effectively captures the relationship between assessment criteria and learners' outcomes. The statistical significance of the model is confirmed by an F-value of 179.442 and a p-value of 0.000, both of which meet the threshold for significance, with the p-value falling well below 0.05. These findings underscore the critical role of evaluation criteria in positively influencing educational outcomes in the county. Further details on the regression analysis are provided in Table 4.37.

Table 4.37: Regression Coefficient Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.208	0.144		8.42	0.008
	Assessment Criteria	0.564	0.042	0.599	13.396	0.003
a. Dependent Variable: Learners' Outcomes						

Source: Field Data, 2023

$$Y = 1.208 + 0.564X_5$$

Where

Y= Learners' Outcomes

X₅= Assessment Criteria

The assessment criteria had a positive and statistically significant effect on learners' outcomes ($\beta=0.564$, $p=0.003$). This implies that for every unit improvement in assessment criteria employed, learners' outcomes are expected to improve by 0.564 units in Makueni County. This significant effect is further supported by a t-statistics value of 13.396 and a p-value of less than 0.003, indicating that assessment criteria play an important role in enhancing educational outcomes among learners in Makueni County. These findings point to the importance of developing effective assessment criteria to positively impact learners' educational experiences and achievements, reflecting the vital role of assessment in facilitating and improving the quality of education and learner outcomes. The findings concur with the assertions by Villamero (2014) who conducted a study delving into how three regular primary school teachers in Negros Oriental, Philippines assessed learners with disabilities in typical classrooms and found the necessity for teachers to utilize a variety of assessment approaches when evaluating learners with special needs. Additionally, the teachers customized the content and delivery of these assessment strategies to suit the specific needs of learners with disabilities.

4.7.2.6 Stakeholder Awareness and Learners' Outcome

The study's sixth objective was to establish the effects of stakeholder awareness on learners' outcome in Makueni County. Table 4.38 shows model summary between stakeholder awareness and learners' outcomes.

Table 4.38: Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.535a	0.286	0.284		0.66208
a Predictors: (Constant), Stakeholder Awareness					

Source: Field Data, 2023

As depicted by Table 4.38, the model summary results yielded an R-squared value of 0.286 for the relationship between stakeholder awareness and learners' outcomes. This result implies that 28.6% of the variation in learners' outcomes in Makueni County is attributable to stakeholder awareness. This indicates a significant relationship between the level of stakeholder awareness and the outcomes of learners. The results also revealed an adjusted R-square value of 0.284, in the exclusion of the constant, 28.4% of the variation in learners' outcomes is explained by stakeholder awareness. This points to the significance of stakeholder awareness in enhancing educational outcomes in Makueni County. Table 4.39 shows the NOVA results.

Table 4.39: ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	56.436	1	56.436	128.746	.000 ^b
	Residual	140.71	321	0.438		
	Total	197.145	322			
a. Dependent Variable: Learners' Outcomes						
b. Predictors: (Constant), Stakeholder Awareness						

Source: Field Data, 2023

The findings of the analysis of variance are presented in Table 4.39. These data demonstrate that the model utilized by the research was statistically significant in terms of its ability to explain the impact of stakeholder awareness on the outcomes accomplished by learners in Makueni County. In order to demonstrate the importance of the model, the F-value was calculated to be 128.746 and the p-value was calculated to be 0.000, which is lower than the essential p-value of 0.05. Based on these findings, it is clear that the knowledge of stakeholders is an essential component in the process of positively affecting educational outcomes in the county.

Table 4.40: Regression Coefficient Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.458	0.147		9.916	0.012
	Stakeholder Awareness	0.481	0.042	0.535	11.347	0.009

a. Dependent Variable: Learners' Outcomes

Source: Field Data, 2023

$$Y = 1.458 + 0.481X_6$$

Where

Y = Learners' Outcomes

X₆ = Stakeholder Awareness

Stakeholder awareness had a positive and statistically significant effect on learners' outcomes ($\beta=0.481$, $p=0.009$). This implies that for every unit improvement in stakeholder awareness, learners' outcomes are expected to improve by 0.481 units in Makueni County. This significant effect is further supported by a t-statistics value of 11.347 and a p-value of less than 0.009, indicating that stakeholder awareness plays an important role in enhancing educational outcomes among learners in Makueni County. These findings point to the significance of developing effective stakeholder awareness strategies to positively impact learners' educational experiences and achievements, reflecting the vital role of stakeholder engagement in facilitating and improving the quality of education and learner outcomes. The observations concur with the findings of a study by Sturdy, Smith-Merry, and Freeman (2012) who indicated that stakeholder consultation enabled the voices and perspectives of different stakeholders, including service users, carers, and mental health professionals, to be heard and integrated into policy development. Sturdy, Smith-Merry, and Freeman (2012) also highlighted the challenges and limitations of stakeholder consultation as a form of social mobilization. The authors suggested that stakeholder consultation can be undermined by power imbalances and conflicts of interest among stakeholders, and that it may not always lead to meaningful change or transformation in policy outcomes.

4.7.2.7 Multiple Linear Regression Analysis

For the purpose of determining the overall joint effect of all the independent variables (the availability of learning resources, the CBC supporting infrastructure, teacher capacity building, teaching methodologies, assessment criteria, and stakeholder awareness) on the outcomes of learners in Makueni County, a multiple linear regression analysis was carried out.

Goodness of fit model summary

The R squared statistic was utilized in the process of interpreting and comprehending the outcome of the regression analysis. This was done to determine how well the model fit the data. In this particular investigation, the coefficient of determination, also known as R², was utilized as a helpful instrument due to the fact that it provides the percentage of the variance of one variable that can be predicted based on the other variable. The coefficient of determination, which represents the strength of the linear relationship between the independent variables and the dependent variable, is calculated in such a way that the value of R² is between 0 and 100. The summary of the model for the joint effect is presented in Table 4.41.

Table 4.41: Overall Model Fitness

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.872a	0.760	0.755	0.38694

a Predictors: (Constant), Stakeholder Awareness, Teacher Capacity Building, CBC Support infrastructure, Teaching Methodologies, Learning Resources, Assessment Criteria

In Table 4.41, the results of the model fitness test show a coefficient of determination (R-squared) of 0.76. This indicates that the independent variables described above are responsible for explaining 76% of the variation in the outcomes of learners in Makueni County. The fact that this is the case suggests that there is a robust and meaningful connection between the accessibility of educational resources, CBC supporting infrastructure, teacher capacity building, teaching methodologies, assessment criteria, stakeholder awareness, and learners' outcomes. Therefore, these findings emphasize the importance of these factors in shaping and improving educational outcomes in Makueni County.

a) ANOVA Analysis for the Overall Model

Table 4.42 provides the results for the overall analysis of the variance (ANOVA).

Table 4.42: Overall Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	149.832	6	24.972	166.786	.000 ^b
	Residual	47.313	316	0.15		
	Total	197.145	322			

a. Dependent Variable: Learners' Outcomes

b. Predictors: (Constant), Stakeholder awareness, Teacher Capacity Building, CBC Support infrastructure, Teaching Methodologies, Learning Resources, Assessment Criteria

The overall multiple regression model used was statistically significant in explaining the effect of stakeholder awareness, teacher capacity building, CBC support infrastructure, teaching methodologies, learning resources, and assessment criteria on learners' outcomes in Makueni County. The ANOVA results demonstrate the joint effect of the independent variables (Stakeholder awareness, Teacher Capacity Building, CBC Support infrastructure, Teaching Methodologies, Learning Resources, and Assessment Criteria) in predicting learners' outcomes. Furthermore, the F-statistic of 166.786 and the associated p-value of 0.000 are strong indicators of the model's significance. The p-value is less than 0.05, signifying a highly significant model. This implies that the combined effects of these independent variables have a significant impact on learners' outcomes in Makueni County.

b) Regression coefficients analysis of overall model

The regression coefficients of the overall model are presented in Table 4.43.

Table 4.43: Multiple Regression of Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.494	0.130		-3.799	0.000
	Availability of Learning Resources	0.354	0.032	0.404	11.079	0.000
	CBC Supporting Infrastructure	0.111	0.032	0.108	3.436	0.001
	Teacher Capacity Building	0.257	0.032	0.261	7.976	0.000

Teaching Methodologies	0.195	0.034	0.212	5.778	0.000
Assessment Criteria	0.103	0.041	0.11	2.545	0.011
Stakeholder Awareness	0.044	0.036	0.049	1.213	0.226

a. Dependent Variable: Learners' Outcomes

The regression model therefore became;

$$Y = -0.494 + 0.354X_1 + 0.111X_2 + 0.257X_3 + 0.195X_4 + 0.103X_5 + 0.044X_6$$

Where:

Y = Learners' Outcomes

X₁ = Availability of Learning Resources

X₂ = CBC Supporting Infrastructure

X₃ = Teacher Capacity Building

X₄ = Teaching Methodologies

X₅ = Assessment Criteria

X₆ = Stakeholder Awareness

There existed a correlation that was both favorable and statistically significant between the accessibility of learning resources and the outcomes of learners ($\beta=0.354$, $p=0.000$). Consequently, this indicates that there is an anticipated proportional improvement of 0.354 units in the outcomes of learners in Makueni County for every unit increase in the availability of learning resources. This significant effect is further corroborated by a t-statistics value of 11.079 and a p-value of 0.000, which indicates that the availability of learning materials plays a key role in increasing educational results among learners in the county with regard to the county as a whole. In light of these findings, it is essential to make certain that educational institutions are adequately stocked with the learning materials and resources that are required to support the academic achievement of students. Furthermore, the findings of the analysis indicate that there exists a positive and statistically

significant correlation between the CBC supporting infrastructure and the outcomes of the learners ($\beta=0.111$, $p=0.001$). It may be deduced from this that an enhancement in the infrastructure that underpins the Competency-Based Curriculum (CBC) will result in an anticipated rise of 0.111 units in the results of the learners. The relevance of CBC supporting infrastructure in positively influencing educational results in Makueni County is further supported by the t-statistics value of 3.436 and the p-value of 0.001, which both indicate that the significance does not change. This highlights the significance of investing in and maintaining infrastructure that is in line with the Broadcasting Corporation of Canada (CBC) in order to enhance the quality of education and the outcomes for learners.

Moreover, the results shows a positive and statistically significant relationship between teacher capacity building and learners' outcomes ($\beta=0.257$, $p=0.000$). This implies that for every unit improvement in teacher capacity building, there is an expected corresponding improvement of 0.257 units in learners' outcomes. The t-statistics value of 7.976 and a p-value of 0.000 confirm the significance of teacher capacity building in enhancing educational outcomes among learners in Makueni County. The results highlight the crucial importance of ongoing professional development for educators in enhancing the quality of education and student performance. These findings align with the results of Ngeno, Sang, and Chemosit's (2020) study, which showed that teachers who completed their training in 2009 at teacher training colleges were proficient in computer skills compared to other teachers recruited by the Instructors Service Commission (TSC) after 2006. This result aligns with the discoveries of the previously listed researchers. Based on the study's findings, the government plans to offer in-service services and training to teaching professionals who are currently employed but lack proficiency in computer skills. According to the findings of the study, educators ought to be ready to embrace and modify their teaching and learning practices in order to accommodate contemporary technologies. ICT services and computer training for educators should be improved, according to the report, in order to raise the level of computer proficiency among educators.

Furthermore, the results depicts that effective teaching methodologies had a positive and statistically significant effect on learners' outcomes ($\beta=0.195$, $p=0.000$). This suggests that when teachers employ engaging and effective teaching methods, learners' outcomes are expected to improve by 0.195 units. The t-statistics value of 5.778 and a p-value of 0.000 further support the significance of teaching methodologies in positively influencing educational outcomes. This

indicates the importance of innovative and learner-centered teaching approaches in enhancing the quality of education. This findings supports the findings of a study conducted by Tumwebaze (2021) to examine how the constructivist teaching method affects learners' achievements within Uganda's CBC and found that the use of constructivist teaching approaches positively influenced learners' outcomes in the CBC. Specifically, the study found that the use of constructivist teaching approaches improved learners' critical thinking, problem-solving, and collaborative learning skills. The study also found that teachers who used constructivist teaching approaches were better able to engage learners in the learning process, leading to better academic performance.

The study also revealed a positive and statistically significant relationship between assessment criteria and learners' outcomes ($\beta=0.103$, $p=0.011$). This implies that appropriate assessment criteria contribute to an expected improvement of 0.103 units in learners' outcomes. The t-statistics value of 2.545 and a p-value of 0.011 confirm the significance of assessment criteria in positively influencing educational outcomes. This points to the importance of fair and relevant assessment methods in gauging learners' understanding and motivating their academic performance. The finding is contrary to the findings of a study by Mapunda, Omollo, and Bali (2017) which underscored the lack of specific policy structures aimed at executing specialized educational measures for pre-schoolers in the Dodoma municipality. As a result, the mismatch between policy goals and their practical realization, both within the municipal and educational institution contexts, became conspicuous.

Finally, the results show that, while there is a positive trend, stakeholder awareness did not reach statistical significance in its relationship with learners' outcomes ($\beta=0.044$, $p=0.226$). This suggests that while stakeholders' involvement in education have a positive influence, it does not have a major driving factor in this particular context. This is in tandem with the conclusion made by Biskupek (2016) that there are several key factors that can influence stakeholder power, including the stakeholder's level of interest in the project, their level of influence over project decisions, and their level of dependence on the project.

These findings provide important information on the factors influencing learners' outcomes in Makueni County. Adequate learning resources, infrastructure that supports the CBC, teacher capacity building, effective teaching methodologies, and fair assessment criteria all play significant roles in improving educational achievements. However, the impact of stakeholder

awareness, while positive, may not be as pronounced in this context. Educational policymakers and institutions should consider these factors when aiming to enhance the quality of education and learners' performance in the county.

CHAPTER FIVE

SUMMARY OF THE FINDINGS, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a summary of findings from descriptive and inferential analysis based on the study specific objectives. The chapter in addition provides the conclusions as derived from the findings and recommendations based on the identified areas of weakness. The chapter concludes by making suggestions for further studies based on the inefficiencies of the current study.

5.2 Summary of Descriptive Findings

5.2.1 Availability of Learning Resources and Learners' Outcomes

The first objective was to assess the effect of availability of learning resources on learners' outcomes in Makueni County. Descriptive analysis results revealed that the availability of learning resources in Makueni County schools was generally unsatisfactory, as indicated by the overall mean dissatisfaction score of 3.83. This dissatisfaction is particularly pronounced in certain areas, reflecting the challenges in resource distribution and quality. The most significant dissatisfaction is observed in the availability of real objects, with most of respondents expressing dissatisfaction. This suggests a consistent experience of inadequate resources among respondents. Similarly, a high dissatisfaction rate of most of the respondents for the number of televisions was identified indicating a widespread issue with their availability, further pointing to the challenges in providing adequate learning resources.

In terms of specific learning materials, programmed materials and the number of maps are areas of significant concern. For programmed materials, majority of the respondents were dissatisfied, indicating a strong negative reception, though opinions vary. The number of maps also saw a majority expressing dissatisfaction, suggesting consistent dissatisfaction across the board. These findings highlight the need for improved access and quality of these specific types of learning resources in the county. The ratio of computers to learners and the number of programs available in schools was also an area of major concern. Most respondents of the respondents expressed dissatisfaction with the computer-to-learner ratio, indicating not only a lack of availability but also the need for more uniform access.

Similarly, for the number of programs available, three-quarters of the respondents reported dissatisfaction, suggesting that these programs were generally not well-received by the respondents, with varied valuation among respondents. These findings point to a need for reassessment and enhancement of digital resources and educational programs in the schools. Flat pictures and posters showed varying levels of dissatisfaction and perceived value among respondents. Flat pictures had a lower satisfaction rate, with most of the respondents being dissatisfied, indicating significant differences in opinions. This reflects uneven distribution or varying relevance of these materials. Posters, on the other hand, had an 81.80% dissatisfaction rate, suggesting that while they were generally deemed unimportant, there is notable variation in their perceived value. These results indicate specific areas where resource allocation and relevance could be improved in Makueni County schools.

The study revealed that the availability of educational resources in Makueni County significantly influenced student outcomes across various programs. Linear regression analysis indicated a coefficient of determination (R-squared) of 0.584, meaning that 58.4% of the variation in learners' outcomes could be attributed to the availability of learning resources. Additionally, the adjusted R-squared value of 0.582 confirmed that, after accounting for predictors, learning materials explained 58.2% of the variation in outcomes. The findings also established a statistically significant correlation between the learning resources students used and their academic performance. Evidence from the analysis of variance (ANOVA) supported this, showing an F-value of 449.771 and a p-value of 0.000, well below the threshold of 0.05. This confirmed the model's robustness.

Furthermore, the study demonstrated that a one-unit increase in learning materials availability would lead to a 0.669-unit improvement in learners' outcomes. This conclusion was supported by regression coefficients, where the coefficient value was 0.669 ($p < 0.000$). The significance of this relationship was further reinforced by a t-statistic of 21.208, with a p-value below 0.000. These findings collectively emphasize the vital role of learning resources in enhancing educational outcomes. This conclusion aligns with prior research underscoring the importance of resource availability in improving the impact of educational interventions.

5.2.2 CBC Supporting Infrastructure and Learners' Outcomes

The second objective was to investigate the effect of CBC supporting infrastructure on learners' outcome in Makueni County. The descriptive analysis results indicated that the study respondents were generally dissatisfied with the Competency-Based Curriculum (CBC) supporting infrastructure in their schools, as reflected by an overall mean dissatisfaction score of 3.851. Specifically, the majority of respondents expressed dissatisfaction with the number of classrooms. This high level of discontentment suggested significant disparities in the quality or availability of classrooms. Similarly, the number of school toilets in relation to the number of pupils was a point of concern based on the results, with most respondents indicating dissatisfaction, highlighting areas in need of improvement.

Additionally, the state of girls' rooms and their materials was another area of dissatisfaction, with most respondents expressing discontent. This moderate dissatisfaction and the notable variations in responses suggested inconsistencies in the provision and quality of these facilities. Additionally, for water facilities like taps and tanks, a majority of respondents were dissatisfied, indicating a need for more consistent and better-quality water facilities in schools in Makueni County.

Furthermore, the findings revealed that the availability of classroom chairs and desks was a serious issue within the County, with the majority of the respondents indicating that they were dissatisfied. This high mean and lower SD indicated a more uniform feeling of dissatisfaction across respondents. Classroom boards also garnered a high level of dissatisfaction, with approximately three-quarters of respondents expressing discontent, pointing towards generally poor availability and variations in quality. Concerning the location and condition of administrative offices, there was a high dissatisfaction rate of about three quarters among respondents. This indicated that while facilities were generally inadequate, the condition and accessibility varied across schools.

Finally, the number of computer rooms and laboratories was a major point of discontent, with a majority of respondents dissatisfied, highlighting the need for improvements in some schools. The findings showed a general dissatisfaction with the CBC supporting infrastructure in Makueni County. The overall mean dissatisfaction score across all categories confirmed this negative attitude towards the infrastructure. However, the variations in SDs across different categories suggested disparities in infrastructure quality and availability, pointing to areas where targeted improvements could potentially enhance educational outcomes.

Based on the regression analysis results, the study found that the availability and support of Competency-Based Curriculum (CBC) infrastructure in Makueni County had a significant impact on learners' outcomes. Analysis of the data showed that the coefficient of determination (R-squared) was 0.232, indicating that 23.2% of the variance in learners' outcomes was attributable to CBC supporting infrastructure. Additionally, the study found that the adjusted R-Squared value was 0.229, suggesting that after accounting for predictors, 22.9% of the change in learners' outcomes could be explained by CBC supporting infrastructure. These statistics underscore the importance of CBC infrastructure in educational outcomes.

Furthermore, the study found that the relationship between CBC infrastructure and learners' outcomes was statistically significant. The ANOVA results showed an F-value of 96.907 and a p-value of 0.000, demonstrating the significance of this relationship. The regression coefficient results further revealed a positive relationship, with every unit increase in CBC infrastructure leading to an improvement of 0.495 units in learners' outcomes ($\beta = 0.495$, $p < 0.001$). The t-statistics value of 9.844 affirmed the strength of this relationship ($t = 9.844$, $p < 0.001$). These findings were found to be consistent with studies like Adalikwu and Iorkpilgh's (2013) research in Cross River State, Nigeria, which found a significant link between the use of instructional materials and the academic achievements of Chemistry learners, reinforcing the crucial role of adequate educational infrastructure in improving learners' academic performances.

5.2.3 Teacher Capacity Building and Learners' Outcomes

The third specific objective of this study was to determine the effect of teacher capacity building on learners' outcome in Makueni County. Descriptive analysis results revealed that regarding learning new skills, a significant majority of respondents were dissatisfied. This was reflected in the mean response of 3.91 and a SD of 1.11, indicating a general leaning towards dissatisfaction among teachers in Makueni County. This suggests a gap in the effectiveness of initiatives aimed at developing teachers' skills, potentially impacting the quality of education and learner outcomes. The study also found that attending seminars, conferences, and workshops was an area of concern, with most participants expressing dissatisfaction. The mean response was 3.75, and the SD was 1.06, pointing to the need for more relevant and impactful professional development activities for teachers.

Furthermore, the statement on the exposure to mentors and coaches attracted considerable dissatisfaction, as evidenced by the majority of responses indicating dissatisfaction. This highlighted a significant gap in the current mentoring and coaching systems in Makueni County, suggesting they are not effectively addressing teachers' needs or fostering their professional growth. The study found that training on the curriculum had a comparatively lower level of dissatisfaction, with slightly more than half of the respondents (56.6%) expressing dissatisfaction with this aspect of capacity building in the county. This suggests that, while there are areas for improvement, curriculum training might be relatively more effective compared to other aspects of capacity building.

Moreover, the study found that in-service training on planning and exposure to education testing programs were areas of high dissatisfaction. In-service training on planning had a dissatisfaction rate of 76.4%, and exposure to education testing programs had a high dissatisfaction rate of 82.6%. Additionally, exposure to lead teacher training and resources revealed a high level of dissatisfaction among most of respondents. The overall mean response across all aspects of teacher capacity building was 3.866, indicating a general trend of dissatisfaction with the capacity-building initiatives in Makueni County. These findings support Chaudhary's (2015) research, which underscored the importance of various factors, including educators and resources, in the effective implementation of the curriculum.

The regression analysis findings revealed that teacher capacity building had a significant effect on learners' outcomes in Makueni County. Analysis revealed that the coefficient of determination (R-squared) was 0.409, indicating that 40.9% of the variation in learners' outcomes could be attributed to teacher capacity building. Additionally, the study found that the adjusted R-squared value was 0.407, suggesting that after accounting for predictors, 40.7% of the change in learners' outcomes was explained by teacher capacity building.

Furthermore, the study found that the impact of teacher capacity building on learners' outcomes was statistically significant. The ANOVA results demonstrated an F-value of 221.763 and a p-value of 0.000, firmly establishing the significance of this relationship. The regression coefficient results showed a positive relationship, with every unit increase in teacher capacity building leading to an improvement of 0.628 units in learners' outcomes. The t-statistics value of 14.892 further reinforced the strength of this relationship. These findings are in line with the research findings of

Komba and Mwandangi (2015), which revealed deficiencies in educator familiarity with the curriculum and inadequate engagement of learners in classroom activities. Additionally, these results agree with the conclusion by Makunja (2016) that it is imperative for the Ministry of Education to ensure the availability of teaching materials aligned with CBC principles. This research highlights the importance of investing in teacher capacity as a pivotal factor in improving educational outcomes, emphasizing the need for effective training, suitable educational tools, and sufficient classroom space for the successful implementation of the Competency-Based Curriculum.

5.2.4 Teaching Methodologies and Learners' Outcomes

The study sought to investigate the effect of teaching methodologies on learners' outcome in Makueni County. Descriptive statistics results revealed that the use of repetition during teaching was a widely adopted methodology in Makueni County, as evidenced by the responses of the majority of teachers. The statistics indicated that repetition was employed to a great or very great extent. This prevalent use of repetition is attributable to its recognized effectiveness in reinforcing learning concepts. Repetition in teaching helps learners to solidify their understanding and retention of information, which is crucial for learning complex subjects. The high rate of its usage among teachers suggests that they valued this method for its ability to enhance learner comprehension and memory retention, an essential aspect of effective teaching.

In addition, the study found that the use of question and answer as a teaching methodology was also prominent, with most of the teachers reporting frequent usage. The use of question and answer is known to actively engage learners, promoting critical thinking and allowing for immediate feedback and clarification. This method's widespread use suggested that teachers in Makueni County recognized the importance of interactive learning. This points to the fact that the methodology enabled them to assess learners' understanding in real-time and fostered a more engaging and participative classroom environment. This approach not only helps in knowledge acquisition but also in developing learners' analytical and reasoning skills.

The study further established that storytelling was a favoured teaching approach, with most respondents indicating its use to a great or very great extent. Storytelling as a teaching tool is invaluable in capturing learners' interest and enhancing their understanding. The high rate of its use suggested that teachers found it effective in making lessons more engaging and relatable.

Stories have the ability to simplify complex concepts, making them more accessible to learners. They also have the potential to connect emotionally with learners, thereby making the learning experience more memorable. The use of storytelling in teaching also indicated a creative approach to education in Makueni County, where teachers are actively seeking ways to make learning more enjoyable and effective.

Moreover, based on the findings the use of dialogue in teaching was extensively practiced, with most of the teachers using it to a great or very great extent. This method's popularity points to the emphasis on interactive and communicative teaching approaches in the county. Dialogue in teaching fosters a two-way flow of ideas, encouraging learners to express their thoughts and opinions. This approach not only enhances understanding but also builds essential communication skills. The high rate of usage of dialogue indicated that teachers valued learner participation and were keen on creating a classroom environment that encouraged open communication and collaborative learning.

Regarding songs, poems, rhymes, and role-play, the study found that the use of songs, poems, rhymes, and role-play were also prominent teaching methodologies in Makueni County. The use of songs during teaching was reported by more than three quarters of the respondents. Similarly, the use of poems and rhymes was prevalent, and role-play was significantly employed. These findings indicate a strong inclination towards diverse and creative teaching methods within schools in Makueni County. Songs, poems, and rhymes are known for their effectiveness in making learning enjoyable and aiding memory retention, while role-play helps in developing practical skills and understanding real-life applications of concepts. The widespread use of these methods suggests that teachers in Makueni County are generally committed to employing a variety of techniques to cater to different learning styles and preferences, aiming to create a more dynamic and immersive learning experience for learners.

According to the findings of the regression analysis, the instructional strategies utilized by learners in Makueni County had a substantial impact on the outcomes they achieved. It was established through analysis that the coefficient of determination (R-squared) was 0.435, which indicates that the teaching approaches that were utilized explained 43.5% of the variance in the outcomes that were achieved by the learners. The study also discovered that the adjusted R-square value was 0.434, which indicates that after taking into account any variables, 43.4% of the change in the

outcomes of the learners was attributed to the teaching approaches that were utilized. The significant association between the two demonstrates the significant impact that instructional strategies have on the results of schooling.

Furthermore, the study found that the effect of teaching methodologies on learners' outcomes was statistically significant. The ANOVA results showed an F-value of 247.577 and a p-value of 0.000, underscoring the importance of teaching methodologies in positively affecting educational outcomes in the county. The regression coefficient results revealed that for every unit improvement in teaching methodologies, there was an expected increase of 0.607 units in learners' outcomes. The t-statistics value of 15.735 further supported this significant relationship. These findings agree with the observations by Nodine (2016), who noted the significance of evolving teaching methodologies, including the use of technology and online learning, in enhancing the development of Competency-Based Education (CBE) programs. Additionally, the results are in agreement with Tsisindu, Joel, and Edward (2016), who pointed out the lack of essential competencies among educators to effectively meet the academic needs of learners with special needs (LWSNs) and the rare implementation of individualized education programs (IEPs). This research underscores the importance of developing and implementing effective teaching methodologies to positively influence learners' educational experiences and achievements, emphasizing the pivotal role of innovative and adaptive teaching approaches in the quality of education and learner outcomes.

5.2.5 Assessment Criteria and Learners' Outcomes

The study's fifth objective was to determine the effect of assessment criteria on learners' outcome in Makueni County. Descriptive analysis findings revealed that traditional stand and deliver instructions were still widely used in Makueni County schools. The majority of the teachers reported using this method to a great or very great extent. Despite being a conventional teaching method, its continued prevalence indicated a reliance on traditional instructional techniques. This approach, characterized by teacher-led presentations and lectures, may be seen as less interactive but continues to hold a significant place in the educational practices of the county. The high usage of this method suggested that while educational methodologies are evolving, traditional practices still play a crucial role in the teaching and learning process.

The study also found that the method of learners copying notes and completing independent worksheets was also prominently used, with most of the teachers utilizing it to a great or very great

extent. This method's widespread application highlighted its importance as an assessment tool in the educational process. While this approach is often critiqued for being less engaging, its continued use suggested that educators in Makueni County valued it for its role in reinforcing learning and providing a structure for independent study. The variability in its application, as indicated by the SD, also suggested that teachers might be adapting this method to suit different classroom dynamics and learning needs.

It was further evident from the finding that the criterion where the teacher makes decisions was widely adopted, with majority of the teachers indicating its use to a great or very great extent. This approach, centered on teacher-led decision-making, highlighted a more traditional, teacher-centric assessment practice. The significant reliance on this method suggested that teachers in Makueni County might prefer maintaining control over the learning and assessment process, guiding the educational experience based on their expertise and judgment. The study found that engaging and challenging learners to think while processing was a frequently adopted methodology, with 78.6% of teachers using it to a great or very great extent. This approach, emphasizing learner engagement and critical thinking, indicated a shift towards more interactive and thought-provoking teaching methods. Such methods are crucial for promoting deeper understanding and encouraging learners to actively participate in their learning process.

The adoption of this approach suggested that educators in the county were increasingly focusing on developing critical thinking and problem-solving skills in learners, which are essential for holistic education. Furthermore, the study found that the practice of ensuring learners know their goals for learning showed a diverse range of application. This indicates that while some educators placed significant emphasis on goal-oriented learning, others might not prioritize it as much. The importance of learners understanding their learning objectives is crucial for self-directed learning and motivation. Furthermore, the study found that thinking skills being routinely addressed was a highly prioritized criterion, as evidenced by most of respondents using this method to a great or very great extent. This strong focus on developing thinking skills underscored a commitment to fostering critical thinking and analytical skills in learners, which are vital for their overall cognitive development and future learning endeavours.

The study indicated a diverse application of assessment criteria in Makueni County schools, with a mix of traditional and interactive approaches. This blend of methodologies suggested an evolving

educational landscape, where traditional practices coexist with more progressive, learner-centered approaches. The overall mean response of 3.887 reflected this diversity, pointing towards a dynamic and multifaceted assessment framework aimed at enhancing learner outcomes and catering to various learning styles and needs. With regards to regression analysis results, the study found that assessment criteria significantly influenced learners' outcomes in Makueni County. The findings indicated that the coefficient of determination (R-squared) was 0.359, meaning that 35.9% of the variance in learners' outcomes was explained by the assessment criteria used. Additionally, the study found that the adjusted R-square value was 0.357, suggesting that after accounting for predictors, 35.7% of the change in learners' outcomes was attributable to the assessment criteria employed. This substantial correlation highlights the critical role of assessment methods in educational outcomes.

Furthermore, the study found that the effect of assessment criteria on learners' outcomes was statistically significant. The ANOVA results showed an F-value of 179.442 and a p-value of 0.000, emphasizing the importance of assessment criteria in positively affecting educational outcomes in the county. The regression coefficient results revealed that for every unit improvement in assessment criteria, there was an expected increase of 0.564 units in learners' outcomes. The t-statistics value of 13.396 further supported this significant relationship. These findings are consistent with the research by Villamero (2014), who emphasized the need for varied and customized assessment approaches for learners with special needs. The study conducted in Negros Oriental, Philippines, found that teachers' use of diverse and tailored assessment strategies for learners with disabilities was essential. This research underscores the importance of developing and implementing effective assessment criteria to positively influence learners' educational experiences and achievements, emphasizing the pivotal role of comprehensive and adaptable assessment methods in the quality of education and learner outcomes.

5.2.6 Stakeholder Awareness and Learners' Outcomes

Additionally, the study aimed to ascertain the extent to which stakeholders' knowledge impacts learners' results in Makueni County. The study found that when it came time to decide how to implement the Competency-Based Curriculum (CBC), students in Makueni County schools were very involved as stakeholders. Of those who took the survey, 64.40 percent said that students were very involved, with an average score of 4.03 and a SD of 0.84. The fact that learners played a key

influence in determining the implementation of the CBC curriculum in the county was evidenced by this. The fact that they were actively involved in the process indicated that their requirements, points of view, and comments were taken into consideration, which may have a beneficial impact on the results of the curriculum. Similarly, employers were identified as important stakeholders actively engaged in the CBC curriculum implementation, with 58.20% of respondents indicating their participation to a great extent. The mean score of 4.10 and a SD of 0.84 emphasized the substantial role of employers in shaping the curriculum to align with workforce requirements. Their involvement suggested that the curriculum was designed to meet the needs of the job market, potentially enhancing learners' employability and career prospects.

Consultants or specialists emerged as highly involved stakeholders, with most of respondents reporting their engagement to a very great extent. The mean score of 4.61 and a SD of 0.75 highlighted the crucial role played by these experts in the CBC curriculum implementation. Their expertise and guidance were evidently valued, indicating that their contributions positively influenced the curriculum's design and execution. The study also found that local universities were actively participating in the CBC curriculum implementation, with more than a half of respondents indicating their involvement to a great extent. The mean score of 4.10 and a SD of 0.81 underscored the significance of collaborations with local higher education institutions. Their participation suggested a strong connection between school education and higher education, potentially facilitating a smoother transition for learners pursuing further studies.

The South African Qualifications Authority (Curriculum Support Officers) was perceived as having a positive impact, with most of respondents reporting their involvement to a great extent. The mean score of 4.29 and a low SD of 0.65 indicated the significant role played by Curriculum Support Officers in the CBC curriculum implementation. This implied that Curriculum Support Officers' standards and guidelines were influential in shaping the curriculum, ensuring its alignment with national educational standards. Professional bodies were actively engaged in the CBC curriculum implementation, with most of respondents indicating their participation to a great extent. The mean score of 4.43 and a SD of 0.7 suggested that professional bodies played a substantial role in shaping the curriculum to meet industry-specific needs. Their involvement indicated that the curriculum was designed to equip learners with relevant skills and knowledge for their chosen professions.

Community participation in the CBC curriculum implementation was substantial, with 47.70% of respondents reporting their involvement to a great extent. The mean score of 4.16 and a SD of 0.9 highlighted the active engagement of the community in the educational process. This suggested that schools in Makueni County recognized the importance of community input in shaping the curriculum to reflect local needs and values. Research institutions were perceived to have moderate involvement, with 39.00% of respondents indicating their engagement to a great extent. The mean score of 3.96 and a SD of 0.83 indicated that research institutions played a notable role in the curriculum implementation. Their contributions suggested a focus on evidence-based educational practices, which could inform curriculum improvements.

Assessors and moderators were significantly involved, with 48.90% of respondents indicating their participation to a great extent. However, the high SD of 2.32 suggested variability in responses regarding the extent of their involvement. This indicated that there might be differing perceptions of the role of assessors and moderators in the CBC curriculum implementation. The study's descriptive statistics revealed that stakeholders played pivotal roles in influencing learners' outcomes in Makueni County, contributing to varying degrees. Learners, employers, consultants, local universities, Curriculum Support Officers, professional bodies, the community, research institutions, and assessors/moderators all had their unique roles in shaping the CBC curriculum. These findings underscored the significance of ongoing collaboration and engagement with diverse stakeholders to enhance the educational experience and outcomes for learners in the region.

Stakeholder awareness was found to have a significant impact on the outcomes of learners in Makueni County, according to the findings of the study. It was determined that the coefficient of determination, often known as R-squared, was 0.286. This indicates that stakeholder awareness was responsible for explaining 28.6% of the variance in the results of the learners (R Squared = 0.286). Additionally, the study discovered that the adjusted R-square value was 0.284, which indicates that after taking into consideration the predictors, 28.4% of the change in the outcomes of the learners was related to the knowledge of the stakeholders (Adjusted R Squared = 0.284). This serves to emphasize the significance of stakeholder awareness in positively influencing educational outcomes within the county.

The regression coefficient results revealed that for every unit improvement in stakeholder awareness, there was an expected increase of 0.481 units in learners' outcomes. The t-statistics

value of 11.347 further supported this significant relationship. These findings were found to be consistent with the outcome of a research by Sturdy, Smith-Merry and Freeman (2012) that emphasized the value of stakeholder consultation in integrating diverse perspectives into policy development. Their study highlighted the importance of stakeholder engagement in policy outcomes, while also noting the challenges and limitations, such as power imbalances and conflicts of interest that can undermine the process. This research underscores the importance of developing and implementing effective stakeholder awareness strategies to positively influence learners' educational experiences and achievements, emphasizing the pivotal role of comprehensive and inclusive stakeholder engagement in the quality of education and learner outcomes.

5.3 Summary of Inferential Analysis

This study utilized correlation analysis to assess the effectiveness of the Competency-Based Curriculum (CBC) in influencing learners' outcomes in Makueni County, Kenya. The analysis sought to determine the strength and nature of the relationship between various educational factors and student performance, offering insights into how these factors interact within the context of CBC implementation. By focusing on these relationships, the study aimed to highlight areas that require attention to enhance the quality of education under this curriculum framework.

The results of the correlation analysis revealed strong and statistically significant associations between the independent variables and learners' outcomes, with the relationships being significant at a 95% confidence level ($p < 0.01$). Notably, there was a significant and positive correlation ($r = 0.764$, $p < 0.05$) between the availability of learning resources and learners' performance. This finding underscores the pivotal role that adequate provision of educational resources plays in driving improved academic outcomes. Schools equipped with essential learning materials are better positioned to foster academic achievement, demonstrating the importance of resource availability in the success of CBC implementation.

These findings are consistent with prior research by Bukoye (2018), which also established a strong positive correlation between the availability of learning materials and academic performance. Such results reaffirm the critical need for policymakers and educational stakeholders to prioritize resource allocation in schools, ensuring that all institutions are adequately equipped to meet the demands of a competency-based curriculum. By addressing resource disparities, educational authorities can enhance the efficacy of CBC implementation and contribute to

sustainable improvements in learners' outcomes, thereby supporting broader educational goals. This evidence further emphasizes that effective resource allocation is not only a matter of infrastructure but a foundational element for achieving the intended outcomes of curriculum reforms.

The study also found that there was a strong positive relationship (correlation coefficient = 0.639, $p < 0.05$) between teacher capacity building and learners' outcomes. These findings indicate that learners experience substantial benefits when teachers possess the necessary skills and knowledge for implementing a competence-based curriculum. This discovery reinforces the need of efficient teacher professional development in enhancing student learning outcomes, as emphasized by Desimone and Garet (2015). Furthermore, there was a significant and positive relationship ($r = 0.660$, $p < 0.05$) between teaching approaches and learners' outcomes. This indicates that the way teachers deliver the curriculum and engage learners plays a significant role in learners' learning outcomes and success. It emphasizes the need for innovative and effective teaching methods aligned with the competence-based curriculum, in line with the findings of Anderson-Levitt (2017).

Moreover, CBC support infrastructure displayed a moderate positive correlation with learners' outcomes ($r = 0.482$, $p < 0.05$). This implies that the physical and organizational structures in place to support the CBC, such as classroom environments and administrative support systems, contribute to the effective implementation of the curriculum and improved educational outcomes. This finding corroborates the importance of adequately training teachers and educators for successful curriculum implementation, as noted by Kanyonga, Mtana, and Wendt (2019). Furthermore, assessment criteria demonstrated a strong positive correlation with learners' outcomes ($r = 0.599$, $p < 0.05$). This highlights the significance of well-designed and aligned assessments that provide valuable feedback to learners and guide their learning. Effective assessments positively influence learner learning outcomes, which is consistent with the importance of assessments in education, as emphasized by Kuyini and Major (2012).

Finally, stakeholder awareness in the implementation of the CBC policy showed a moderate positive correlation with learners' outcomes ($r = 0.535$, $p < 0.05$). This implies that active engagement of stakeholders, including parents, community members, educators, and policy makers, enhances learner learning and achievement. This finding emphasizes the importance of

fostering strong partnerships and collaboration among all education stakeholders, as supported by Biskupek (2016). The correlation analysis results revealed significant and positive associations between various educational factors and learners' outcomes in Makueni County, Kenya.

In addition to the correlation study, a regression analysis was carried out, and the results showed that the R-squared value was 0.760. This indicates that the collective influence of the independent variables was responsible for explaining 76% of the variation in the outcomes of learners in Makueni County. The fact that this R-squared value was so high indicated that there was a strong and significant relationship between the availability of learning resources, the CBC supporting infrastructure, the capacity building of teachers, teaching methodologies, assessment criteria, and the outcomes of learners. This highlights the significance of these factors in determining and enhancing educational outcomes in the county.

The ANOVA results indicated that the multiple regression model used was statistically significant in explaining the effect of the independent variables on learners' outcomes. The F-statistic was highly significant with a value of 166.786, and the associated p-value was 0.000 ($p < 0.05$). This suggested that the combined effects of the independent variables, including stakeholder awareness, teacher capacity building, CBC support infrastructure, teaching methodologies, learning resources, and assessment criteria, had a significant impact on learners' outcomes in Makueni County.

To be more specific, the findings of the regression coefficient showed that there was a positive and statistically significant association between the availability of learning resources and the outcomes of the learners. For every unit increase in the availability of learning resources, it was anticipated that there would be a 0.354 unit improvement in the outcomes of the learners ($\beta=0.354$, $p=0.000$). In addition, there was a correlation that was both favorable and statistically significant between the CBC supporting infrastructure and the outcomes of the learners. An enhancement in the infrastructure that underpins the Competency-Based Curriculum (CBC) resulted in an anticipated rise of 0.111 units in the results of the learners ($\beta=0.111$, $p=0.001$).

Regarding teacher capacity building, there was a positive and statistically significant relationship between teacher capacity building and learners' outcomes. For every unit improvement in teacher capacity building, an improvement of 0.257 units in learners' outcomes was expected ($\beta=0.257$, $p=0.000$). Moreover, effective teaching methodologies had a positive and statistically significant

effect on learners' outcomes. When teachers employed engaging and effective teaching methods, an improvement of 0.195 units in learners' outcomes was expected ($\beta=0.195$, $p=0.000$).

Concerning assessment criteria, the study found out that there existed a positive and statistically significant relationship between assessment criteria and learners' outcomes. Appropriate assessment criteria contributed to an expected improvement of 0.103 units in learners' outcomes ($\beta=0.103$, $p=0.011$). While there was a positive trend, stakeholder awareness did not reach statistical significance in its relationship with learners' outcomes. The influence of stakeholder awareness may not have been a major driving factor in this context ($\beta=0.044$, $p=0.226$).

5.4 Conclusion

Based on the findings, this study concludes that the availability of learning resources is a critical determinant of learners' outcomes in Makueni County. Access to quality learning materials and facilities forms the backbone of an effective educational system. This study's findings confirm that when schools are equipped with adequate resources, learners' performance and learning experiences are significantly enhanced. Therefore, investment in learning resources should be a top priority for educational authorities to ensure that learners in Makueni County have access to the tools and materials they need to succeed. The study also concludes that the evolving educational landscape, increasingly driven by technology and innovation, demands that learners are provided with resources that are not only sufficient in quantity but are also contemporary and relevant. This necessitates a strategic approach by educational authorities, where investments are not just focused on fulfilling basic needs but are also channelled towards integrating advanced educational technologies and resources. Thus, a comprehensive resource allocation plan that considers both traditional and modern educational tools is crucial for the holistic development of learners in Makueni County.

Additionally, the study concludes that the infrastructure supporting the Competency-Based Curriculum (CBC) plays an important role in influencing learners' outcomes in Makueni County. The physical and organizational aspects of educational institutions, including classroom environments and administrative support systems, are pivotal in the effective implementation of the CBC. Improving these infrastructural components can create conducive learning environments, thereby positively impacting educational outcomes. This emphasizes the need for continuous assessment and enhancement of the educational infrastructure in Makueni County. Moreover, the

quality, modernity, and appropriateness of infrastructure supporting the Competency-Based Curriculum (CBC) is vital in the effective delivery of education. The design and condition of classrooms directly affect the learning environment well-lit, ventilated, and ergonomically designed spaces can significantly enhance learner engagement and comfort. Additionally, the presence of adequate and advanced facilities such as science laboratories, computer rooms, and libraries equipped with current and diverse resources is essential for a comprehensive education that aligns with the CBC's objectives.

The study further concludes that teacher capacity building is significant for improving learners' outcomes. Teachers equipped with necessary skills and knowledge can effectively deliver the CBC, thereby enhancing learner learning. This underlines the importance of ongoing professional development and training for teachers. Initiatives aimed at enhancing teachers' abilities and teaching methods are crucial in ensuring they are well-prepared to meet the demands of the competency-based curriculum and contribute positively to the learners' academic achievements. The study also concludes that teacher capacity building helps in fostering a supportive and collaborative teaching environment. Encouraging mentorship programs, peer reviews, and collaborative planning within schools leads to a more cohesive and effective teaching community. By facilitating platforms for teachers to share best practices, experiences, and challenges, educational institutions help create a culture of continuous learning and improvement. Additionally, recognizing and addressing the emotional and mental well-being of teachers is important.

Moreover, teaching methodologies significantly influence learners' outcomes. Innovative and effective teaching strategies aligned with the CBC can greatly enhance learner engagement and understanding. The adoption of diverse teaching methods, including interactive and participatory approaches, facilitates a deeper comprehension of subjects and fosters critical thinking among learners. Therefore, teachers in Makueni County should continue to explore and implement varied and dynamic teaching methodologies to cater to different learning styles and enhance overall learner performance. Additionally, the study concludes that assessment criteria have a profound impact on learners' outcomes. Well-designed assessments that provide meaningful feedback are crucial in guiding learners' learning processes. Such assessments help in identifying areas where learners excel or need improvement, thereby informing teaching strategies and curriculum

adjustments. Therefore, it is essential to develop and implement effective assessment criteria that align with the goals of the CBC to ensure they contribute positively to learners' outcomes.

The study concludes that stakeholder awareness, although not showing a statistically significant relationship with learners' outcomes, remains an important aspect of the educational process. The involvement of various stakeholders, including parents, community members, educators, and policymakers, brings diverse perspectives and resources to the educational process. This collaborative approach, while not directly correlated with learner outcomes in this study, plays a vital role in shaping a holistic and inclusive educational environment. Furthermore, while stakeholder awareness is important, its influence on learners' outcomes may not be as pronounced as other factors. The findings suggest that while stakeholder involvement is beneficial, it may not directly translate into improved academic performance. This indicates that while it is crucial to engage stakeholders in the educational process, other factors such as resource availability, infrastructure, teacher capacity, teaching methodologies, and assessment criteria play more significant roles in determining learners' outcomes.

Learning outcomes, as this study concludes, are influenced by multifaceted factors. i. The significant correlations and relationships identified between various educational elements and learner performance highlight the complexity of educational processes. The study emphasizes the need for a holistic approach in addressing these factors, ensuring that resources, infrastructure, teacher capacity, methodologies, and assessments are all adequately considered and enhanced. While stakeholder awareness is important, its direct impact on learners' outcomes may not be as substantial as other factors. This study provides important insights for educational policymakers and practitioners in Makueni County and similar contexts, offering a roadmap for targeted improvements to optimize educational outcomes.

5.5 Recommendations of the Study

Management in the education sector should prioritize the allocation of learning resources in Makueni County schools, focusing on areas with the highest dissatisfaction rates. In addition, emphasis should be on improving the availability of real objects, televisions, programmed materials, maps, and computers. This should involve budget reallocations, seeking additional funding, or forming partnerships with private and public entities to increase resource availability. Additionally, there is need for management in the education sector both at the national level and

in Makueni County to upgrade the CBC supporting infrastructure, including classrooms, toilets, girls' rooms, water facilities, and administrative offices. Management should implement renovation projects and seek funding for new construction to address these deficiencies. Collaborating with local authorities and community organizations could facilitate this process.

Given the dissatisfaction with teacher capacity building, the study recommends that management should revamp professional development programs. This should include focus on practical, hands-on training, mentorship programs, and exposure to innovative teaching methodologies. In addition, there is need to engage with educational experts and institutions for specialized training programs. Also, teachers should be encouraged to diversify their teaching methods, incorporating repetition, question-answer sessions, storytelling, dialogue, and creative approaches like songs and role-play. Regular workshops and training sessions can be organized to introduce and reinforce these methodologies.

Finally, the ministry of education should focus on developing and implementing more effective assessment criteria. This includes a mix of traditional methods like note-taking and innovative approaches that engage learners in critical thinking and problem-solving activities. Regular training and workshops can help teachers adopt these assessment techniques effectively.

5.6 Policy Implications

The imperative for equitable distribution of educational resources becomes a cornerstone of policy implications. To bridge disparities in educational outcomes, policy directives must focus on standardizing resource allocation, particularly targeting rural and underprivileged schools. This policy should encompass a systematic approach to balance resource distribution, ensuring all schools, regardless of their geographical or economic status, have equal access to essential learning materials. Policy implications extend to the development of educational infrastructure. It is paramount to frame policies that not only address the physical structures of schools but also include provisions for modern educational facilities like computer labs and libraries. The policy should advocate for multi-faceted funding avenues, combining government initiatives with public-private partnerships, to facilitate comprehensive infrastructure development.

The study highlights the need for policies that support continuous professional development for teachers. These policies should promote state-sponsored training programs, offer incentives for further education, and encourage partnerships with educational institutions for ongoing teacher

development. Such policies would ensure teachers are well-equipped with contemporary teaching skills and knowledge, enhancing the overall quality of education. Moreover, updating the curriculum and assessment methods in line with current educational standards and practices is a critical policy implication. The focus should be on embedding competency-based learning within the curriculum and designing assessments that effectively gauge a broad spectrum of learner skills and knowledge. Policies should advocate for the modernization of teaching and assessment methods, aligning them with the evolving educational landscape.

Policies aimed at improving school infrastructure should prioritize creating environments that are safe, accessible, and conducive to learning. This includes a comprehensive approach involving increased government funding, collaboration through public-private partnerships, and active community participation in infrastructure projects. Special focus should be on the construction and maintenance of classrooms, sanitation facilities, and water systems. Furthermore, the development of a more holistic and comprehensive assessment system is a key policy implication. This system should move beyond conventional methods, incorporating continuous and formative assessments to evaluate a wide range of learner competencies. Policies in this domain should also include provisions for teacher training and guidelines to implement these advanced assessment practices effectively.

5.7 Contribution to Knowledge

This study contributes significantly to the existing body of knowledge by highlighting the crucial role of resource availability in influencing learners' outcomes in Makueni County. The detailed analysis, indicating a strong positive correlation between the availability of learning resources and educational outcomes, reinforces the fundamental principle that well-equipped schools are essential for enhancing learners' academic performance. This finding strengthens and extends previous research by underscoring the specific types of resources, such as real objects, televisions, and computers that are particularly influential in the Kenyan context.

Additionally, the study provides new insights into how the physical and organizational infrastructure of schools affects learners' outcomes. By quantifying the levels of dissatisfaction with various aspects of school infrastructure, such as classrooms, toilets, and computer rooms, the study shows the necessity of adequate infrastructure in the educational process. This is a significant contribution to educational policy and planning, especially in regions facing similar challenges as

Makueni County, and emphasizes the need for comprehensive infrastructure development as a key component of educational reform.

The findings regarding teacher capacity building and its impact on learners' outcomes add valuable knowledge in the field of educational development. The study's focus on various aspects of professional development, including seminars, mentorship, and curriculum training, provides a nuanced understanding of what constitutes effective teacher capacity building. This is particularly relevant for policymakers and educational administrators looking to design and implement more effective teacher training programs.

This study contributes to the understanding of how diverse teaching methodologies impact learners' outcomes. The emphasis on methodologies like repetition, storytelling, dialogue, and role-play provides a comprehensive view of teaching practices that are beneficial in the Kenyan educational context. This knowledge is crucial for educators and curriculum developers aiming to incorporate a variety of teaching methods to cater to different learning styles and enhance learner engagement and comprehension.

The study's findings on the correlation between assessment criteria and learners' outcomes offer new perspectives on the importance of effective assessment practices in education. The detailed analysis of various assessment methods, including traditional and interactive approaches, enriches the existing literature by showing how a balanced assessment framework can positively influence learner learning outcomes. This has implications for the design of assessment systems that are more aligned with contemporary educational goals.

By exploring the impact of stakeholder awareness on learners' outcomes, the study adds to the knowledge about the importance of collaborative efforts in education. The involvement of various stakeholders, including learners, employers, and community members, is shown to be a significant factor in educational success. This finding is particularly relevant in the context of implementing new educational policies or curricula, highlighting the need for inclusive and participatory approaches.

The study's use of correlation and regression analysis to assess the relationships between multiple educational factors and learners' outcomes provides a holistic understanding of the educational landscape in Makueni County. This comprehensive approach contributes to a more integrated view of how various elements, from resources to teaching methodologies, collectively impact

educational outcomes. Such an integrated perspective is essential for developing well-rounded educational policies and practices. The contributions of this study to knowledge extends beyond academic understanding to practical implications. The evidence provides actionable insights for policymakers, educators, and administrators, particularly in regions with similar educational challenges as Makueni County. The study provides a data-driven foundation for formulating policies and practices that are tailored to the specific needs and conditions of the educational environment, ultimately aiming to enhance the quality of education and learner outcomes.

5.6 Suggestions for Further Research

This study identified learning resources, infrastructure, teacher capacity, teaching methodologies, assessment criteria, and stakeholder awareness as key determinants of learners' outcomes in schools in Makueni County, explaining 76% of the variation. The study this suggests that future research should delve into uncovering the factors accounting for the remaining 24% of the variation in learners' outcomes. This should involve examining variables like learner motivation, community socio-economic status, or school management practices. Such studies will be able to provide a more comprehensive understanding of all elements impacting learners' outcomes in Makueni County and similar contexts.

In addition, while this study sheds light into the effectiveness of the competence-based curriculum in Makueni County, there is a need to expand this research to other counties in Kenya. Comparative studies across different counties will highlight regional variations and commonalities in the implementation and effectiveness of the curriculum. This broader approach will be instrumental in formulating more generalized conclusions and recommendations applicable across diverse educational settings within the country. Furthermore, the study suggests that future researchers should examine the impact of parental education levels and socio-economic status on learners' outcomes under the competence-based curriculum in Makueni County and beyond. Understanding the role of parental involvement and socio-economic factors is likely to provide deeper understanding of the external influences on educational success and inform strategies to engage parents more effectively in the educational process.

Finally, the findings of this study have shown teacher capacity building as a significant factor affecting learners' outcomes. It is thus recommended that future research should focus on the professional development experiences and needs of teachers, exploring how these factors vary

across different regions in Kenya. Assessing the availability and impact of professional development programs on teachers' instructional practices and learners' learning will aid in developing more tailored and effective teacher training strategies. Also, to gain a dynamic understanding of the competence-based curriculum's impact, longitudinal studies are necessary. Such studies will help track changes over time, providing a clear picture of the long-term effects of curriculum implementation on learners' outcomes. This approach will also help identify trends and patterns that may not be evident in cross-sectional studies, contributing to more robust educational planning and policy formulation.

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APPENDICES

APPENDIX I: LETTER OF INTRODUCTION

KENYATTA UNIVERSITY

POSTAL ADDRESS, 43844-00100

NAIROBI, KENYA

Dear Respondent,

RE: INTRODUCTION LETTER

I am a postgraduate student in Kenyatta University pursuing a degree in Doctor of Philosophy in Public Policy and Management. I am conducting a study to assess the effectiveness of the implementation of competence-based curriculum policy on Learners outcome in Makueni County, Kenya. Kindly assist in this endeavour by duly filling the attached questionnaire/interview schedule as will be directed.

The gathered information will be strictly for purposes of academia and the data provided will not be used for any other purpose. Also, be sure to note that your feedback will certainly be regarded with utmost confidentiality and can be divulged only after your approval.

Yours Sincerely,

APPENDIX II: QUESTIONNAIRE

This questionnaire is broken up into four components, each of which will taking a fraction of a minute of your time to complete. To the questions that have been posed, kindly submit responses that are accurate. Due to the fact that this activity is intended for academic purposes, any information that is gathered from participants will be treated with the strictest confidentiality.

SECTION A: RESPONDENT BASIC INFORMATION

1. What is your gender?

Female Male

2. How old are you?

Below 25 years 26-35 years 36-45 years
46-55 years Above 55 years

3. What is your level of Education?

Certificate Diploma Degree Masters
Other (Specify).....

4. For how long have you worked in your current school?

Less than 2 years 2 to 5 years 6 to 9 years
10 years and above

5. Which class do you teach?

Class 5 Class 6

SECTION B: AVAILABILITY OF LEARNING RESOURCES

6. For this question, please respond by ticking the appropriate box the extent to which you your satisfied by the number of the following learning resources in your school using a scale of 1-5 where, 5 = Very satisfied, 4=satisfied, 3=moderately satisfied, 2= Dissatisfied, 1= very Dissatisfied

		1	2	3	4	5	Quantity
a.	Number of textbooks against the number of learners						
b.	number of work books						
c.	Programmed materials						
d.	Number of computers against the number of learners						
e.	Number of Programs						
f.	Flat pictures						
g.	Number of Maps						
h.	Number of models						
i.	Availability of real objects						
j.	Posters availability						
k.	Number of televisions						

How did availability of resources affect learners' outcomes

.....

.....

....

SECTION C: CBC SUPPORTING INFRASTRUCTURE

7. To what extent are you satisfied with the number of the following CBC supporting infrastructure in your school?

		1	2	3	4	5	Quantity
a.	Number of classrooms						
b.	Number of school toilets against number of the pupils						
c.	Girls rooms with materials						
d.	Number of water facilities e.g taps, tanks against school population						
e.	Class rooms chairs and desks						
f.	Number of classrooms						
g.	Class room board						
h.	Location and condition of administrative offices						
i.	Number of computer rooms and laboratories						

In what ways did the school infrastructure affect outcomes among CBC learners?.....

.....

.....

.....

SECTION D: TEACHER CAPACITY BUILDING

8. To what extent are you satisfied with the number of the following teacher capacity building practices in your school.

		1	2	3	4	5	Number of times in a term
a.	Learning of new skills						
b.	Attending of seminars, conferences and or workshops						
c.	Expose to mentors and coaches						
d.	Training on the curriculum						
e.	In service training on planning						
f.	Expose to education testing program						
g.	Expose to lead teacher training and resources						

How did capacity among teachers affect CBC learners' outcomes?.....

.....

.....

.....

SECTION E: TEACHING METHODOLOGIES

9. How frequently do you use the following teaching methodologies in your teaching?

		1	2	3	4	5
a.	Use of repetition during teaching					
b.	Use of question and Answer					
c.	telling of stories when teaching					
d.	use dialogue when teaching					
e.	use songs during teaching lessons					
f.	use of poems and rhymes					
g.	I use role play					

In what ways did teaching methodologies affect CBC learners' outcomes?.....

SECTION F: ASSESSMENT CRITERIA

10. How frequently do you use the following assessment criteria in assessing the learners?

	STATEMENTS	1	2	3	4	5
a.	Traditional stand and deliver instructions					
b.	Students copying notes, completing independent worksheet					
c.	Teacher makes decision					
d.	Student are engaged and challenged to think while processing					
e.	Student know their goals for learning					
f.	Thinking skills are routinely addressed					

How did assessment criteria affect CBC learners' outcomes?.....

.....

SECTION G: STAKEHOLDER AWARENESS

11. To what extent have the following stakeholders been involved in the implementation of CBC curriculum?

	STATEMENTS	1	2	3	4	5	Number of time involve in previous year
a.	Learners						
b.	Employers						
c.	Consultants or specialists						
d.	Local universities						
e.	Curriculum Support Officers						
f.	Professional bodies						
g.	Community						
h.	Research institutions						
i.	Assessors and moderators						

In what ways did stakeholder awareness affect CBC learners' outcomes?.....

.....

SECTION H: LEARNERS' OUTCOME

12. To what extent do you rate the average learning outcome of your class on the basis of the following competences?

	STATEMENTS	SD=1	D=2	NS=3	A=4	SA=5
a.	Learners are able to analyze complex problems and come up with innovative solutions.					
b.	Learners are able to apply effective cognitive strategies for learning and problem-solving.					
c.	Learners are able to effectively communicate verbal information.					
d.	Learners are able to demonstrate proficient motor skills.					

What is your opinion in relation to learners' outcomes among CBC learners?.....

.....

.....

APPENDIX III: KEY INFORMANT INTERVIEW GUIDE

1. In your own opinion comment on availability of CBC learning material in Makueni County

.....
.....
.....
.....

2. Do you think operation education support infrastructures have influence learners’ outcome in Makueni County?

Why?

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.....

3. In your own opinion do you think teacher capacity building has been effectively undertaken in Makueni County? Explain

.....
.....
.....
.....

4. Do you think teaching methodologies have any effect on learners’ outcome in Makueni County?

Explain

.....
.....
.....

5. Do you think assessment criteria have any effect on learners' outcome in Makueni County?

Explain

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.....
.....

6. In your own opinion comment on stakeholders awareness on CBC learning material in Makueni County

.....
.....
.....
.....

APPENDIX VI: STUDY AREA MAP (Makueni County)



Kenya National Bureau of Statistics (2020)

APPENDIX V: RESEARCH AUTHORIZATION


REPUBLIC OF KENYA
MINISTRY OF EDUCATION
STATE DEPARTMENT FOR BASIC EDUCATION

Telephone:
Fax:
Email: valentibuseni@gmail.com
When replying please quote

County Director of Education Office
P.O. BOX 41 - 90300
MAKUENI
26th October, 2023

Ref No. MKN/C/ED/S/33/VOL.II/175

Flora Muiatya, MBi OCW
KENYATTA UNIVERSITY

RE: RESEARCH AUTHORIZATION

This office is in receipt of a letter from the Director General, National Commission for Science, Technology and Innovation (NACOSTI) authorizing you to carry out research on **"Implementation of Competency Based Curriculum Policy and learner's outcome in Makueni County"** for the period ending **17th October, 2024.**

Following this authorization, you are allowed to proceed with your research as requested.


Charles O. Nyakundi
County Director of Education
MAKUENI COUNTY
Copy to:
Director General/ CEO, NACOSTI

