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Teacher Preparedness and Implementation of Competency-Based Curriculum in Public Junior Secondary Schools in Bomet County, Kenya

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Abstract

The success of the Competency-Based Curriculum (CBC) in Kenya rests on the readiness of teachers, especially in Public Junior Secondary Schools (JSS). The present study assessed the level of teachers' preparedness and how it relates to the implementation of the CBC. A descriptive survey design was used, and JSS teachers who were conveniently sampled from the five sub-counties in Bomet County. Questionnaires, interview schedules, and classroom observation checklists were used to gather the data. The questionnaire within a pilot study was found sufficiently reliable, where the Cronbach's alpha (α) was 0.82, and face and content validity were checked with the opinions of curriculum specialists and experts in educational research. Descriptive and inferential statistics were used for quantitative data and thematic analysis for qualitative data. Results indicated that while the majority of teachers were familiar with the basics of CBC, there were deficiencies in pedagogical knowledge, resources, and opportunities for professional development. Teacher preparedness was significantly positively associated with successful implementation of CBC. The study suggests that there should be an intensive in-service training, adequate supply of resources, and regular supervision to teachers to facilitate meaningful implementation of CBC in Junior Secondary Schools.

Keywords: Competency-Based Curriculum, Teacher Preparedness, Influence, Implementation, Junior Secondary Schools, Bomet County, Kenya.

Introduction

It is widely accepted that no society progresses socially, economically, or technologically without a sound system of education. As the world's education systems move from memorization-based systems to skills-based approaches, many countries are revising their curricula to meet the demands of the century (UNESCO, 2017). In Kenya, this change is represented in the Competency-Based Curriculum (CBC) which was piloted by the Ministry of Education in 2017 to among others provide learners with critical thinking, problem-solving, communication, and collaboration skills as part of the broader Kenyan educational reforms (KICD, 2017). The CBC will be popularized among students, it is believed, by the CBC. Through the CBC, the 8-4-4 system gives way to a new structure of 2-6-3-3-3 that is also built around learner-centered pedagogy, formative assessment, and the inclusion of core competencies like digital literacy, self-efficacy, and citizenship (Republic of Kenya, 2018). The commencement of CBC in Junior Secondary Schools (JSS) in 2023 offers challenges and opportunities to teachers, learners, and policymakers. At the heart of this enactment is the readiness of teachers, in the form of key actors, who are the vehicles through which curriculum objectives and policies are experienced in classrooms.

Teacher preparedness is the degree to which teachers have the appropriate knowledge, skills, attitudes, and resources required to most effectively facilitate learning (Darling-Hammond, 2006). To

facilitate the successful implementation of CBC, teachers need to not only have a clear understanding of the philosophy and the guiding principles of the curriculum, but also need to have the pedagogy and assessment skills necessary for experiential and competence-based learning (Ong'ondo & Boit, 2019). Yet emerging reports from the field and studies indicate that teachers have not been well-prepared to implement CBC, due to inadequate teacher training, lack of teacher resources, minimal professional supports, and limited support from education stakeholders, including school administrators (MoE, 2022; TSC, 2023).

Structural challenges like large class sizes, ambiguous policy directions, and existing inequalities in resource distribution limited teachers' capacity to respond to the demands of the new curriculum (Waweru & Muthoni, 2021). These problems are much more desperate in public junior secondary schools due to infrastructural and administrative compulsion, which even impact negatively on the implementation of the curriculum. In recognition of the above stated concerns, this study aims to establish the preparedness of the public JSS teachers in Kenya to implement the CBC and further determine the extent to which their preparedness influences the successful implementation of the CBC. By understanding the successes and challenges of T-Ready, the study intends to support evidence-based approaches to strengthen CBC delivery in Kenya's public education system.

Preparedness of teachers and the possibility of teaching curriculum content are defined by Darling-Hammond (2006) as the

extent to which teachers have the sort of knowledge, skills, attitudes, and resources they need to teach in such a way that students learn what they are intended to learn. It involves professional capacity, pedagogical competency, knowledge of content, and psychological preparedness. Indeed 'the curriculum' is an artifact (Fullan, 2007) that is played with rather than implemented which makes the success of a level pedagogy and curriculum delivery stage dependent upon teachers who have the capacity to internalize the curriculum goals and the capabilities by which they can be turned into curriculum practice.

Teacher readiness under CBC involves content mastery, communication technology (ICT), digital literacy, familiarity with competency-based pedagogy, use of formative assessment strategies to assess learners' understanding, learners' engagement in learner-centered activities, and the sharing and use of feedback (KICD, 2017). The CBC is a move away from the traditional content-based/exam-oriented education system to one that is learner-centered/competence-driven. This involves the teacher taking the role of facilitator rather than knowledge depositor and leading the learners towards challenging problem-solving, collaborative, and critical thinking situations (UNESCO, 2017). The Kenya Institute of Curriculum Development (KICD, 2017) states that teachers should apply ICT practices in their teaching coupled with 21st-century competencies of communication, digital literacy, and self-efficacy. Ong'ondo and Boit (2019), Waweru and Muthoni (2021) observe that though teachers embrace CBC in general, most of them do not know how to teach a competency-based lesson, and this could be attributed to little orientation on CBC and lack of instructional materials to support CBC.

Teacher Professional Development (TPD) is at the core of preparing teachers with competencies needed to roll out CBC. Studies reveal that ongoing, practical training has more impact than a one-shot workshop (Guskey, 2002). In Kenya, both TSC and MoE have started on-job training for teachers as they get ready to implement CBC. Yet, a number of studies show that there has been inadequate training particularly at the junior secondary level. The MoE (2022) noted that few teachers had received in-depth training on CBC pedagogy, and many desired more intensive and ongoing professional learning.

Adequate teaching and learning materials for CBC are also crucial to the successful implementation of the program. They comprise textbooks for the new curriculum, ICT infrastructure equipment, teaching and learning materials, and test items. A TSC survey (2023) reveals that too many public junior secondary schools do not have competency-based teaching and learning materials, which complicates the work and requires innovative approaches by teachers in delivering CBC-aligned lessons. Likewise, a study by Muthui and Mbinda (2021) established that inequalities in resource allocation for urban and rural schools escalated implementation barriers, stifled the motivation and readiness of teachers.

However, some systemic barriers persist that are undermining the realization of the potential of CBC despite the intervention on the part of the State and other players. These are overcrowded classes, lack of policy clarity, resistance to change, and lack of administrative support (Waweru & Muthoni, 2021). Meanwhile, the extra work of designing personalized learning experiences and assessment has become too much for some teachers (Owino, 2020). These are not just factors on which teachers' practice and performance hinge, but they affect their attitudes and willingness to adopt curriculum reform too.

Despite the importance of teachers' readiness, research also suggests the association between readiness and successful implementation of curriculum is not automatic. A Western

Kenyan-based study Ochieng and Simiyu (2021) indicated that more comprehensively and professionally trained and resourced teachers in schools realized the same higher levels of CBC compliance and learning engagement. In contrast, schools in which teachers felt ill-prepared reported issues in delivering lessons, assessing students and interpreting the curriculum. These results are consistent with international studies, including UNESCO (2017), that highlight the need to develop teacher capacity in a competency-based education system.

Statement of the Problem

Success of CBC implementation in Kenya depends on how much the teachers, especially those teaching in JSS, are prepared. Despite the fact that teachers were being trained at the national level, many continued to lack significant skills in the areas of learner-centered pedagogy, digital skills, competency-based assessment, and the use of educational materials. In Bomet County, issues like varied training, limited support, and resource-related challenges have raised questions regarding the quality of CBC implementation. Nonetheless, there is scant empirical knowledge about how, if at all, teacher preparedness affects this process. A gap, therefore, exists between CBC implementation and teacher preparedness that this study seeks to address in public junior secondary schools in Bomet County.

Research Objectives

This study primarily seeks to explore teacher preparedness and its relationship with the implementation of the CBC in public JSS in Bomet County, Kenya.

Specific Objectives

- i. To determine the extent of teachers' professional preparedness for the implementation of CBC in Bomet County, Kenya.
- ii. To explore the availability and adequacy of teaching and learning resources that facilitate the CBC utilization in Bomet County, Kenya.
- iii. To establish the extent of teachers' use of CBC-aligned pedagogical methods in Junior secondary schools in Bomet County.
- iv. To assess the difficulties teachers encounter in implementing CBC in Bomet County, Kenya.
- v. To determine the extent to which teacher preparedness relates to the effectiveness of CBC implementation in public JSS in Bomet County, Kenya.

Research Questions

- i. How competent are teachers in readiness for full implementation of CBC in Bomet County, Kenya?
- ii. What support do teachers have for implementing CBC in Bomet County, Kenya?
- iii. How do Bomet County teachers implement CBC-compliant teaching strategies in their teaching?
- iv. What are the barriers that teachers encounter while they attempt to implement CBC in Bomet County?
- v. What is the effect of teacher readiness on CBC implementation in Bomet County?

Methodology

Research Design

A mixed-methods descriptive survey design was used in this study. The quantitative part specifically looked at differences in teachers' readiness and implementation of CBC, whereas qualitative information generated an in-depth contextual understanding of the teachers' reality and frustration. This design was considered suitable for the study of perceptions, practices, and statistical relationships in a natural school environment (Creswell & Plano Clark, 2018).

Study Area and Target Population

The study was carried out in Bomet County, Kenya, in public Junior Secondary Schools in five sub-counties: Bomet Central, Bomet East, Chepalungu, Sotik, and Konoin. Returning teachers at the junior secondary schools in the public schools that are found in these sub-counties formed the population under study. Based on statistics from the Bomet County Education Office (2024), as presented in Table 1, the number of teachers in each sub-county is as tabulated.

Table 1: Total Number of Teachers per Sub-county

Sub-County	Number of JSS Teachers
Bomet Central	180
Bomet East	160
Chepalungu	200
Sotik	170
Konoin	190
Total	900

Sample Size and Sampling Techniques

The study used stratified random sampling to ensure representation across all sub-counties. The Yamane (1967) formula was applied to determine the appropriate sample size:

$$n = \frac{N1 + N(e)2n}{1 + N(e)^2} = \frac{1 + N(e)2N}{1 + N(e)^2}$$

Where:
n = sample size
N = population (900)
e = margin of error (0.08)
$$n = \frac{9001 + 900(0.08)^2}{1 + 900(0.08)^2} \approx 138$$
$$138n = 1 + 900(0.08)^2 \approx 138$$

To enhance representativeness and account for non-response, the sample was rounded up to 150 respondents. The sub-county sample distribution was proportionally allocated as follows:

Study Area and Target Population

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Table 2: Sample Distribution per Sub-county

Sub-County	Population	Proportional Sample
Bomet Central	180	30
Bomet East	160	27
Chepalungu	200	33
Sotik	170	28
Konoin	190	32
Total	900	150

Random sampling was then conducted within each sub-county to select participating teachers.

Data Collection Instruments

In the gathering of data, two tools were utilized:

- i. A standardized questionnaire for the quantitative data, with the following sections: demographics, preparedness, resources, use of CBC pedagogy, and challenges of the process.
- ii. A pretested interview guide for qualitative data, which was conducted with 15 purposively selected teachers (3 per each sub-county) to further understand their training experiences, teaching practices, and system barriers.

Validity and Reliability of Instruments

Instrument Validity

Validity of content was warranted by expert panel review by three Senior University lecturers in Curriculum and Instruction and Educational Media. Their feedback facilitated the clarification of vague items and ensured that the questionnaire mapped the constructs relevant for CBC implementation. Pilot testing was carried out in 10 Public JSS found in Narok County (which is not among the main sample) and the outcome was used to revise the questionnaire.

Instrument Reliability

The internal consistency of the questionnaire was assessed by Cronbach’s Alpha test. The results are shown in Table 3.

Table 3: Reliability Coefficient of different Constructs of the Questionnaire items

Construct	Number of Items	Cronbach’s Alpha
Teacher Preparedness	6	0.82
Resource Availability	5	0.78
Use of CBC-Aligned Pedagogy	4	0.80
Implementation Challenges	5	0.76

According to Mugenda & Mugenda (2003), a coefficient of 0.7 and above is acceptable for reliability in educational research. Therefore the instrument was appropriate for use in this study.

Data Analysis Procedures

Quantitative data were analyzed using SPSS (Version 25.0). Descriptive statistics including frequencies, means and percentages summarized the responses. Pearson correlation and linear

regression were used to test the relationship between teacher preparedness and CBC implementation. Qualitative data from interviews were analyzed thematically. Responses were transcribed, coded, and organized into themes to complement and explain the quantitative findings.

Ethical Considerations

The study upheld ethical principles including Informed consent, Confidentiality and anonymity of respondents, Voluntary participation as well as Proper data storage and reporting was observed.

Data Analysis and Results

This section presents the findings from both quantitative and qualitative data. Descriptive statistics were used to assess the level of teacher preparedness, resource availability, use of CBC-aligned pedagogy, and challenges. Inferential statistics, including Pearson correlation and regression analysis, were conducted to determine the influence of teacher preparedness on CBC implementation.

Table 4: Demographic Information of Respondents (N = 150)

Variable	Category	Frequency	Percentage (%)
Gender	Male	82	54.7
	Female	68	45.3
Teaching Experience	Less than 5 years	37	24.7
	5–10 years	58	38.7
	Over 10 years	55	36.6
Academic Qualification	Diploma	22	14.7
	Bachelor's Degree	123	82.0
	Master's Degree	5	3.3
CBC Training Attended	Yes	117	78.0
	No	33	22.0

Table 4 presents a descriptive overview of the 150 participants. Most (54.7%) of the respondents were male, while the remaining 45.3% were female. Faculty experience was reported as 5–10 years (38.7%) and over 10 years (36.6%), indicating an experienced workforce. Regarding education, 82.0% hold a bachelor's degree, and 3.3% have a master's or above degree. Notably, 78% of teachers have had at least one session of CBC training.

These results indicate that the sample represented an experienced and academically qualified teaching group, with advanced exposure to CBC training. However, attendance at training may not necessarily confer preparedness if the training is superficial or not contextually relevant (Makunja, 2016; Owino, Orodho, & Waweru, 2020).

JSS Teachers' Preparedness for the Implementation of CBC

The successful implementation of the Competency-Based Curriculum (CBC) in Kenya depends on the level of preparedness of teachers, who play a critical role in the curriculum change. Teacher readiness is defined as teachers having the requisite knowledge, skills, attitudes, and resources to effectively teach and

implement the curriculum as proposed in the CBC model (MOE, 2019). The questions in the questionnaire required teachers to self-assess their CBC readiness (five items) using a 5-point Likert Scale.

Table 5: Level of Teacher Preparedness (Mean Scores)

Preparedness Indicator	Mean	Std. Dev	Interpretation
Attended CBC in-service training	4.2	0.7	High
Confidence in implementing CBC	3.1	1.0	Moderate
Familiarity with competency-based assessments	2.8	0.9	Moderate
Ability to use learner-centered strategies	2.9	1.1	Moderate
Overall Preparedness Score	3.2	0.9	Moderate

Table 5 presents the average of scores in the major indicators of readiness. Of all three types of recruitment, participation in CBC training received the highest rating ($M = 4.2$, $SD = 0.7$) from the 228 enrolled participants, suggesting wide involvement. The only categories with average scores in the "moderate" range were confidence in implementing CBC ($M = 3.1$), familiarity with CBA ($M = 2.8$), and being able to employ LCS ($M = 2.9$).

These findings imply that although most teachers have been trained in CBC, many feel only moderately prepared to deliver it in practice. This implies a mismatch between training exposure and operational competence – a concern that has also been expressed by Wasanga (2021) who observed that CBC training in Kenya is often lacking in depth, causing a misalignment between policy expectations and classroom practice. The mean preparedness score of 3.2 also indicates a transitioning system where teachers are starting to accept CBC concepts, but they are in need of more capacity building to effectively implement the required pedagogies and assessments (KICD, 2021).

Availability of CBC Teaching Resources

The success of the Competency-Based Curriculum (CBC) largely depends on the availability and sufficiency of teaching and learning materials. These are textbooks based on CBC content, ICT tools, project-based learning materials, science kits, and teacher guides. These resources facilitate the provision of learner-centred teaching and the promotion of practical, inquiry-based learning experiences (KICD, 2020). Table 6 is the summary of the information gathered on the availability of teaching/learning facilities.

Table 6: Availability of CBC Teaching Resources

Resource Type	Adequate (%)	Inadequate (%)	Not Available (%)
CBC Textbooks	52.0	38.7	9.3
Project-Based Materials	18.0	56.0	26.0
ICT Tools and Equipment	12.7	47.3	40.0
Science Kits and Equipment	21.3	49.3	29.4

From Table 6, significant differences in resources are observed. At the same time, 52% of teachers claimed to have enough CBC books, stock of PML, project materials (18%), ICT tools (12.7%), and Science kits (21.3%) was adequate. More than 40% of the respondents indicated a total absence of the ICTs that are very essential for the implementation of the digital literacy components of the CBC.

These gaps in-service delivery negatively affect the effectiveness of CBC, which is a hands-on, technology-enriched, and project-based learning approach. According to Tilya and Mafumiko (2017), appropriate and relevant teaching materials are very essential for making the curriculum objectives reflect at the classroom level so that pupils can meet its outcomes. In the Kenyan setting, this is particularly urgent owing to regional variance in resource distribution.

Use of CBC Instructional Strategies

The CBC is designed to encourage teaching strategies that are learner-centered and that promote critical thinking, creativity and innovation, collaboration, and problem-solving by learners. The difference with the classical curriculum, which was dominated by memory and teacher-centered teachings, is that CBC focuses on practical and active learning. Thus, teachers are required to employ strategies such as project-based learning, collaborative learning, individualized education, and formative assessment in developing competencies among learners (KICD, 2020). Use of CBC Instructional Strategies is reported in Table 7.

Table 7: Frequency of Use of CBC Instructional Strategies

Strategy	Often (%)	Some times (%)	Rare ly (%)	Never (%)
Project-Based Learning	21.3	36.0	30.0	12.7
Collaborative Learning	28.7	33.3	25.3	12.7
Formative Assessment	24.0	30.7	28.0	17.3
Individualized Instruction	18.0	29.3	32.7	20.0

As shown in Table 7, the majority of the teachers hardly use the main CBC approaches. Use of project-based learning is low: Only 21.3% of teachers use it often, 30% rarely use it, and 12.7% never use it. Collaborative learning gets somewhat more use (28.7% often), but "tailoring instruction to individual students or small groups" comes in very rarely, with 50%+ of teachers reporting they rarely or never use it.

These instructional approaches are narrowly followed. This means that there is a major policy-practice discrepancy. As Fullan (2007) argued, lasting change takes place at the level of the classroom something that is unlikely to happen without structured pedagogical support. In addition, Otieno and Simatwa (2020) also observe that follow-up of education reforms in Kenya has typically been poor since the country has adopted a policy approach with emphasis on the implementation phase leading to variations in the use of teaching methods proposed.

Challenges in CBC Implementation

The implementation prospects and challenges of the CBC in Kenya The successful launch of the Competency-Based Curriculum (CBC) in Kenya has been the biggest academic achievement in the country, but marred with a host of challenges, particularly at the junior secondary school (JSS) level. The philosophy underlying the CBC is one of learner-centric education focused on skills; however, the departure from the old curriculum has faced systematic, institutional, and pedagogical challenges (KICD, 2020; MOE, 2021).

Table 8: Major Challenges in CBC Implementation (N = 150)

Challenge	Frequency	Percentage (%)
Inadequate Training	111	74.0
Insufficient Resources	107	71.3
High Workload	89	59.3
Large Class Sizes	99	66.0
Lack of Administrative Support	67	44.7

As presented in Table 8, the most common concerns were unsatisfactory training (74.0%) and lack of resources (71.3%). Further reasons for the failure were excessive class sizes (66.0%), overwork of the teacher (59.3%), and lack of administration support (44.7%).

These problems suggest more systemic frailties in the implementation of the CBC. Thus, in a situation where class size is very high and there are inadequate or no teaching and learning materials to do the CBC, one is left far behind as a teacher to plan for the activities envisaged in individualized learning or project-based assessment. As UNESCO (2021) observes, teacher resistance is indeed not what often sabotages the diffusion of the CBC reforms in Sub-Saharan Africa, but rather structural impediments and under-resourcing.

Teachers' Preparedness and CBC Implementation

Teacher readiness is a crucial factor in the effective implementation of the CBC. Preparedness refers to teachers' awareness of CBC principles, comfort in applying CBC-aligned pedagogy, preparedness to assess competencies, and access to training and resources.

From the above statement, KICD (2020) argues that the successful implementation of CBC can only be realized through ensuring that teachers receive adequate theoretical and practical preparation. The correlation between teacher preparedness and CBC implementation is indicated in Table 9 whereas the regression analysis is presented in Table 10.

Table 9: Correlation Between Teacher Preparedness and CBC Implementation

Variable	R	p-value	Interpretation
Teacher Preparedness vs CBC Implementation	0.68	0.000	Significant positive correlation

As revealed in Table 9, the Pearson correlation coefficient ($r = 0.68$, $p < 0.001$) demonstrates a strong and significant positive relationship between teacher preparedness and CBC practice. Higher levels of readiness are therefore indicative of better adherence and success with implementing CBC.

This also reflects Fullan's (2007) theory of educational reform, that teacher capacity is a fundamental lever for change. Similarly, Owino et al. (2020) reported that teacher capacity (including teacher training, attitude towards CBC, and teaching experience) influences the extent and sustainability of CBC implementation in Kenya.

Table 10: Regression Analysis Summary

Model Variable	B	Std. Error	Beta	t	Sig.
(Constant)	1.12	0.41	--	2.73	0.007
Teacher Preparedness	0.74	0.08	0.68	9.25	0.000

Note: $R^2 = 0.46$ indicates that 46% of the variance in CBC implementation is explained by teacher preparedness.

Teacher readiness is also a significant predictor of CBC implementation in the regression analysis Table 10 ($\beta = 0.68$, $t = 9.25$, $p < 0.001$). The model accounts for 46% of the variance ($R^2 = 0.46$) in CBC implementation outcomes, which is a good amount of variation to explain in human social science research.

This result demonstrates that investment in teacher education is not just worthwhile but super effective. The magnitude of the beta coefficient intimates that any initiative to promote CBC uptake must first target teacher capacity, which can only be achieved through targeted, sustained, practical professional development (KICD, 2021; Makunja, 2016).

Qualitative Findings

A thematic analysis of open responses and interpreter interpretations creates depth to the qualitative data by pointing to 4 themes.

- i. **Inadequate Practical Training:** Workshops were said to be superficial and little connected to the classroom. Although many of the teachers had received training in CBC, it was felt that the sessions were too theoretical and did not include demonstrations of how to implement the translation in the classroom nor subject-specific strategies. Educators demanded more interactive, sustained mentoring programmes.

"We are being told what CBC is but we are not being told how to implement it in a practical approach in our subjects," one teacher said.

This is consistent with Wasanga (2021) who acknowledges the importance of context-sensitive training that bridges the theory-practice divide.

- ii. **Resource Scarcity:** The absence of CBC materials, ICT tools, and project resources were reasons for teachers' challenges. The absence of essential teaching tools – particularly ICT equipment, textbooks, and project work materials – was consistently underlined by teachers. Rural schools were particularly disadvantaged.

"Sometimes, we ask the students to come with materials from home, but most don't have money to buy them."

This corresponds with earlier research findings by Tilya and Mafumiko (2017) who stressed that resource constraints are more concentrated in marginalized areas, thus threatening equitable curriculum implementation.

- iii. **Supportive but Overwhelmed** A majority of teachers were in support of CBC, but had difficulties in implementation. Echo chamber Most teachers were philosophically supportive of the CBC, applauding its learner-centredness. They also feel bogged down by paperwork, lesson preps, and assessments.

"I love CBC, but it's unmanageable in a class of over 60 kids."

This is in line with Otieno and Simatwa (2020) findings that implementation challenges are because the system is overwhelmed rather than resistance.

- iv. **Innovative Efforts** Some teachers innovatively employed locally available materials in implementing CBC projects. However, a couple of the teachers were creative in cases where they utilized the local resources to develop CBC-related activities, indicating resilience and owned initiative among some of the teachers.

"We made science models from maize stalks and banana fiber and the learners were excited and fully involved."

This underscores that teachers can be innovators if supported and valued, within the framework of CBC. The results show a strong relationship between teacher preparedness and successful CBC delivery. According to Darling-Hammond (2006), 'teachers' skills and confidence are also critical factors in shaping the nature of curriculum reform'.

Most teachers, though, had been, at the very least, trained in some way about CBC, yet the quality and intensity of the training were often not sufficient to effect classroom change, a finding which corroborates that of Ong'ondo & Boit (2019) and that of MoE (2022). Insufficient teaching and learning materials were largely identified as a key challenge constraining CBC implementation and supported by similar findings by Muthui & Mbinda (2021). The CBC's hands-on, project-based approach to learning is difficult to achieve where ICT tools, labs, or even at least instructional material is not present.

The study further indicates that although teachers had a positive attitude toward a cognition-based approach to teaching science, the approach seemed to have impacted minimally on their teaching practices. This gap reflects what Waweru and Muthoni (2021) ascertain that curriculum change is superficial when it lacks practical teacher-centred classroom level training and support. In addition, large class sizes and administrative overload were seen to stifle learner engagement quality—an observation confirmed by those of Owino (2020) and that of the TSC (2023).

Summary of Key Findings

- i. Most teachers have attended CBC training, but their practical readiness remains moderate.
- ii. Severe shortages in CBC-aligned resources—especially ICT tools—hinder effective pedagogy.
- iii. CBC strategies like project-based learning and individualized instruction are rarely used.
- iv. Teacher preparedness significantly predicts successful implementation of CBC ($r = 0.68$; $R^2 = 0.46$).
- v. Systemic constraints such as workload, class size, and resource scarcity remain major barriers.
- vi. Some teachers are innovatively adapting to these challenges using locally available solutions.

Conclusion and Recommendations

Conclusion

The study concludes that teacher preparedness significantly influences the effective implementation of the Competency-Based Curriculum in Kenya's public junior secondary schools. While teachers exhibit a positive disposition toward the CBC, gaps in training, resources, and pedagogical support impede effective practice. This situation threatens the full realization of CBC goals such as learner autonomy, critical thinking, and practical competence.

Conflicts of Interest

I do here declare that there is no conflict of interest regarding the publication of this paper.

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Supplementary Materials

Supplementary materials supporting this study are available upon request.

Recommendations

Based on the findings of the study, the following recommendations were arrived at:

- i. There is need to strengthen Continuous Professional Development (CPD):
The Ministry of Education and the Teachers Service Commission should provide more intensive and sustained in-service training programs focused on CBC pedagogy, classroom practice, and assessment techniques (Guskey, 2002).
- ii. Resource Allocation should be improved:
Equitable distribution of CBC-aligned textbooks, science kits, and ICT infrastructure must be prioritized, especially in under-resourced public schools (Muthui & Mbinda, 2021).

- iii. Pedagogical Support and Supervision should be enhanced:

Curriculum support officers should conduct regular classroom visits and offer mentorship to help teachers internalize and apply CBC related instructional methods effectively (MoE, 2022).

- iv. There is need to reduce teacher workload:

Review of administrative duties and rationalization of class sizes will allow teachers to devote more time to learner-centered instruction.

- v. Foster School-Based innovations among teachers:

Encourage teacher-led initiatives that creatively adapt CBC to local contexts using available materials and culturally relevant approaches.

- vi. There is need to monitor and evaluate implementation fidelity:

Establish robust M & E mechanisms to track the alignment between CBC training and actual classroom practices at the school level.

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