An Investigation of Teachers' Retooling Status and Its Influence on Implementation of Competency-Based Curriculum in Senior Schools in Bomet County, Kenya

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ABSTRACT

This study investigated the status of teacher retooling and its influence on the implementation of the Competency-Based Education (CBE) curriculum in Senior Schools in Bomet County, Kenya. A descriptive survey research design employing mixed methods was adopted. The target population comprised 345 teachers and 32 principals, from which a sample of 185 teachers and 10 principals was selected using stratified and simple random sampling techniques. Data were collected through questionnaires and interview guides. A pilot study was conducted to establish the suitability of the research instruments, yielding a Cronbach's alpha coefficient of 0.87, which indicated strong reliability. Content and construct validity were ensured through expert review and alignment with the study objectives. Quantitative data were analyzed using descriptive statistics, Pearson correlation, and linear regression, while qualitative data were analyzed thematically. The findings revealed that 72.4% of the teachers had undergone CBC retooling; however, most training sessions were short-term and lacked adequate follow-up support. A significant positive relationship was established between teacher retooling and CBE implementation ($r = 0.684$, $p < 0.05$). Regression analysis further showed that teacher retooling was a significant predictor of effective CBE implementation ($\beta = 0.684$, $p < 0.05$), accounting for 46.8% of the variance in implementation outcomes. The study concluded that effective teacher retooling significantly enhances successful CBE implementation in Senior Schools. It therefore recommends sustained continuous professional development, extended and well-structured retooling programmes, and strengthened mentorship systems to ensure effective and sustainable curriculum implementation.

Keywords: Retooling, Competency-Based Education (CBE), Teacher Preparedness, Senior Schools, Curriculum Implementation, Bomet County.

INTRODUCTION

Education systems across the globe face significant reform to ensure that learning outcomes align with skills, employability, and global competitiveness required by the 21st century. Key to these reforms is the transition to a competency-based education system, focusing on the development of skills, values, and attitudes necessary for a lifetime of learning and productive participation in society. Based on UNESCO (2023) advocates of the Competency-Based Curriculum (CBC) concept, it was described as a drastic change from the previous content-based one to one where learners should learn and apply knowledge through use of learner-centred pedagogy, formative assessment, creativity, critical thinking, collaboration, and digitally literate instruction. The Kenya Institute of Curriculum Development (KICD, 2017) and the Republic of Kenya (2022), for example, underscore CBC as a core curriculum framework designed to ready learners for the demands of contemporary society.

The introduction of the CBC in 2017 in Kenya was a significant educational change in response to perennial challenges posed by the 8-4-4 system, especially its excessive dependence on content mastery and high-stakes examinations (Republic of Kenya, 2022). The new 2-6-3-3-3 education structure focuses on holistic development of learners, talent identification, capacity building, experiential and inquiry-based learning principles. The curriculum is built on the bedrock that every learner is guaranteed an opportunity to develop and exercise creativity, and be self-reliant for life in order to acquire lifelong learning competencies.

Yet, the successful enactment of CBC is fundamentally the result of teacher preparedness, competence and professional capacity which make up the most significant actors that deliver the curriculum. Educators are not only required to apply innovative learner-centred pedagogies; they must also integrate technology, design competency-based assessments and provide authentic learning experiences (Oduor & Bett, 2024; Mwebi, 2023). These expanded professional expectations necessitate comprehensive teacher retooling and sustained Continuing Professional Development (CPD) to ensure effective classroom practice.

Curriculum reforms are not always successful if teacher preparation and institutional support are insufficient as international experiences show. Darling-Hammond et al. (2020) highlight that lacking in professional capacity undermines the sustainability of reform. In contrast, successful models of competency-based education in places like Finland and Singapore have been promoted through robust policy measures, ongoing professional development and mentorship frameworks (UNESCO, 2023). Similarly, research to date in Rwanda and Uganda, has found difficulties in implementing CBC at the outset as lack of retooled teachers, scarce resources, and insufficient support following up resulted in the implementation challenges (Nabirye, 2022; Ndayambaje & Mukankusi, 2023).

Kenya stands at a crossroads now that CBC has been implemented up to Junior School and with a full Senior School rollout planned for 2026. As a recognition of the central role that teachers play in this transition, the Teachers Service Commission (TSC) undertook large-scale retooling initiatives in mid-2025 to arm Senior School teachers with core competencies related to the three curriculum pathways: Arts and Sports Science, Social Sciences, and Science, Technology, Engineering and Mathematics (STEM) (Nation Media, 2025; TSC, 2025). These programs intended to enhance teachers' preparedness in learner-centred pedagogy, digital integration, and competency-based assessment. However, observations from primary and junior school phases of CBC implementation demonstrated that there were differences in training length, method, and resource allocation that resulted in different degrees of preparedness among teachers (Wanjiku et al., 2024; Kimosop et al., 2023).

Disparities of infrastructure, digital access, and professional support services are even more apparent in counties such as Bomet. While a large subgroup of teachers have taken part in CBC retooling workshops, the adequacy, quality, sustainability, and practical impact of these programmes on classroom practice is still a matter of concern. Research suggests that retooling is not sufficient to drive pedagogical transformation unless supported by mentorship, continuous support, and adequate teaching resources (Mwebi, 2023; Oduor & Bett, 2024; Ong'ondo & Akinyi, 2024). There is also anecdotal evidence from Bomet County that many retooling initiatives have been short-term, with limited follow-up, especially in rural and sub-county schools.

It is against this background that this study was undertaken to investigate the retooling status of teachers and its relationship to implementation of the Competency-Based Curriculum in Senior Schools in Bomet County, Kenya. The study aims to generate empirical evidence on teachers' preparedness, the effectiveness of retooling programmes, and their impact on CBC classroom implementation. The findings are expected to inform policy formulation, teacher education, and professional development strategies aimed at strengthening the quality and sustainability of CBC delivery in Kenya's senior school education.

Statement of the Problem

Teachers' capacity and competency in their role as the main actors in curriculum delivery underpins the implementation of the Competency-Based Curriculum (CBC) program in Kenya. While the Teachers Service Commission (TSC) has rolled out wide-scale retooling initiatives to enhance teachers' ability to deliver CBC, data collected in primary and junior schools indicate that the quality, length, follow-up, and provision of

facilities for professional development remain inconsistent and teachers have demonstrated uneven levels of readiness. In a country where Kenya is set for full CBC implementation in the Senior Schools in 2026, concerns remain regarding the implementation of learner-centred teaching, competency-based assessment, digital integration, and experiential education. Bomet County is further challenged by infrastructure gaps and limited access to digital and professional support services, particularly at the rural and sub-county schools. While many teachers undertook retooling workshops, the appropriateness, sustainability, and practical impact of these programs on classroom practice is yet to be found, along with a lack of data on senior school teacher preparedness in terms of research. This lack of locally-specific data obstructs the elaborations of specific and successful professional development programs and could jeopardize the successful implementation of CBC in Senior Schools in Bomet County, Kenya.

Purpose of the Study

To investigate the status of retooling teachers and its influence on the implementation of the CBC in Senior Schools in Bomet County.

Objectives of the Study

i. To assess the current status of teacher retooling for CBC implementation in Senior Schools in Bomet County.
ii. To determine the influence of teacher retooling on the implementation of CBC in Senior Schools in Bomet County.
iii. To examine the challenges affecting the retooling and implementation of CBC in Bomet County.

Hypotheses of the Study

The study tested the following null hypothesis:

H_o1: There is no statistically significant relationship between teacher retooling and the implementation of the Competency-Based Curriculum in Senior Schools in Bomet County.

H_o2: Teacher retooling does not significantly predict the implementation of the Competency-Based Curriculum in Senior Schools in Bomet County.

LITERATURE REVIEW

Theoretical Framework

The study was based on Guskey's (2002) Model of Teacher Professional Development, which suggests that meaningful teacher change can only occur as a result of systematic professional learning experiences that lead to better classroom practices and improved student outcomes. The model highlights that beliefs and attitudes change in teachers after noticing a difference in teaching effectiveness and student achievement.

Further, the study also included the Technological Pedagogical Content Knowledge (TPACK) Framework from Mishra and Koehler (2006). The framework emphasizes the interplay across technology, pedagogy and content knowledge, and emphasizes that quality teaching with technology is based on developing an integrated competence in these domains. In the context of the Competency-Based Curriculum (CBC), a context that can be useful for TPACK is to examine how retooled teachers integrate technological tools and progressive pedagogies for enhancing learner-centered instruction and the competency development process.

Empirical Review

There is also extensive empirical evidence to support the value of teacher retooling for achieving the desired effects of CBC. Structured retooling programs significantly improved teachers' pedagogical preparation and flexibility after implementing their programmes, as revealed by Kimosop, Cheruiyot and Langat (2023).

Nonetheless, Oduor and Bett (2024) noted the limited reach of these programs due to some limitations, namely short length of training sessions, lack of instructional materials, and insufficient mentoring support mechanisms.

Likewise, Mwebi (2023) underlined it as well, underscoring that sustainable pedagogy change is one of continuous professional development and long-term mentoring, not of infrequent short-term sessions of training. Consistent with this, a TSC report (2025) indicated that only about 60% of teachers had confidence in developing and implementing CBC-aligned assessments after retooling. Taken together, these studies indicate that teacher retooling programs have been successful in enhancing preparedness amongst teachers, despite the presence of issues in sustaining capacity and confidence among teachers delivering the CBC in Kenya.

Conceptual Framework

The theoretical framework proposed for this study was based on Guskey's (2002) Model of Teacher Professional Development along with the TPACK Framework developed by Mishra and Koehler (2006). It describes the hypothesized relationships between the key variables: Teacher Retooling (Independent Variable), Teacher Preparedness (Intervening Variable), and Implementation of CBC (Dependent Variable).

Teacher retooling is expected to improve Teachers' Pedagogical, Technological, And Content Competencies (TPACK) through training workshops, mentorship, and instructional resources offered. Enhanced preparedness allows teachers to plan lessons, assess learners, and effectively integrate competency-based strategies. As a result, the successful implementation of CBC is evidenced by learner engagement, application of competencies, and improved learning outcomes.

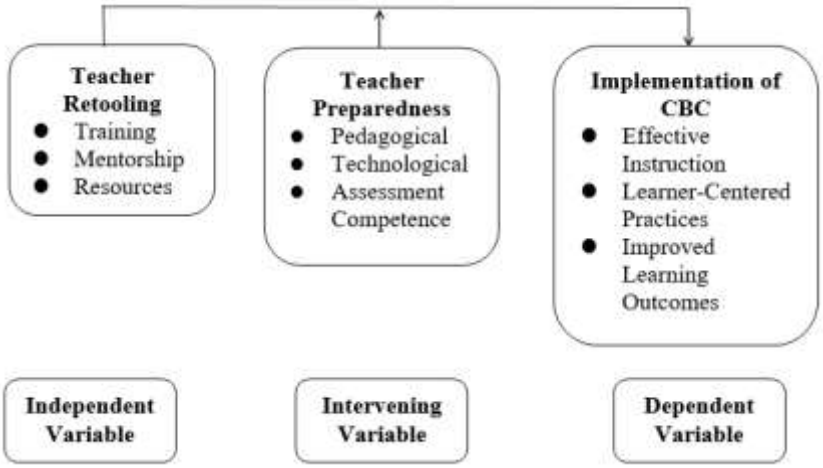

Figure 1: Conceptual Framework for the study

Source: Researcher (2025), adapted from Guskey (2002) and Mishra & Koehler (2006).

METHODOLOGY

Research Design

The study adopted a descriptive survey design employing mixed methods to investigate the status of teacher retooling and its influence on the implementation of the Competency-Based Curriculum (CBC) in Senior Schools in Bomet County, Kenya. This design was suitable because it allowed the collection of both quantitative and qualitative data to describe existing conditions and determine relationships between variables.

Target Population

The target population consisted of 345 teachers and 32 principals from Senior Schools in Bomet County. This group was selected because they are directly involved in the implementation of the CBC and therefore possess

relevant information concerning teacher retooling and curriculum delivery.

Sample Size and Sampling Procedures

A sample of 185 teachers and 10 principals was drawn from the target population using stratified and simple random sampling techniques. Stratification ensured that teachers and principals from different school categories (county, extra-county, and sub-county) were adequately represented. Simple random sampling was then used within each stratum to give all participants an equal chance of inclusion.

Research Instruments

Data were collected using structured questionnaires for teachers and interview schedules for principals. The questionnaires contained both closed and open-ended items designed to capture quantitative and qualitative data respectively. The instruments were developed based on the study objectives and guided by literature on teacher retooling and CBC implementation.

Pilot Study

A pilot study was conducted in two Senior Schools that were not part of the main study to assess the clarity, consistency, and appropriateness of the research instruments. Feedback from the pilot study was used to revise ambiguous items and improve the instruments' quality.

Validity and Reliability of the Instruments

Content validity was ensured through expert review by university supervisors and specialists in curriculum and instruction, who assessed the instruments for relevance, clarity, and alignment with the research objectives. Construct validity was ensured through proper operationalization of the study variables.

The reliability of the data collection tool was evaluated using the Cronbach's alpha coefficient method, resulting in a coefficient of 0.87. This figure surpasses the acceptable minimum of 0.7, suggesting that the instrument is dependable for gathering data.

Data Collection Procedures

Permission to conduct the study was obtained from relevant authorities including the National Commission for Science, Technology and Innovation (NACOSTI) and the County Director of Education, Bomet. Questionnaires were administered to teachers, while interviews were conducted with principals. Respondents' informed consent was obtained before commencing data collection while assuring them of confidentiality of their responses.

Data Analysis

Quantitative data were analyzed using descriptive statistics such as frequencies, means, and percentages, and inferential statistics including Pearson correlation and linear regression to determine the relationship between teacher retooling and CBC implementation. Qualitative data from interviews were analyzed thematically to support and elaborate on the quantitative findings. The results were presented using tables and narrative descriptions.

RESULTS AND DISCUSSION

Demographic Characteristics of Teachers

The study collected demographic information to better understand the background of teachers who participated in the study. The characteristics included gender, age, academic qualification, teaching experience, subject

specialization, and school category. Table 4.1 presents the summarized demographic data.

Table 4.1: Demographic Characteristics of Teachers

Variable	Category	Frequency (n=185)	Percentage (%)
Gender	Male	104	56.2
	Female	81	43.8
Academic Qualification	Diploma in Education	42	22.7
	Bachelor's Degree	112	60.5
	Master's Degree	31	16.8
Teaching Experience	Below 5 years	39	21.1
	6–10 years	71	38.4
	11–15 years	46	24.9
	Above 15 years	29	15.7
Subject Specialization	Maths & Sciences	48	26.0
	Languages	44	23.8
	Humanities	62	33.5
	Technical Subjects	31	16.7

Source: Field Data (2025)

The demographic data reveal that the majority of teachers were male (56.2%), and held a Bachelor's degree (60.5%). Most had between 6 and 10 years of teaching experience (38.4%). These demographics suggest that the respondents were relatively experienced and professionally qualified, which is essential for effective CBC implementation.

Status of Teacher Retooling

Table 4.2 presents the status of teacher retooling for the implementation of the Competency-Based Curriculum (CBC).

Table 4.2 **Status of Teacher Retooling for CBC Implementation**

Retooling Indicator	Frequency	Percentage (%)
Attended CBC Training	134	72.4
Duration < 1 week	89	48.1
Duration > 2 weeks	41	22.2
Received follow-up mentoring	56	30.3
Confident in applying CBC pedagogy	118	63.8

Most teachers (72.4%) had attended retooling, but training duration and follow-up were limited. Only 30.3% had received mentorship. This pattern reflects findings by Wanjiku et al. (2024) that retooling efforts in Kenya

are often too brief for lasting impact. The Teachers Service Commission's policy on mentorship and coaching (TIMEC) articulates the need for structured induction, mentoring and continuous professional development, but gaps remain between policy and practice especially in rural and resource-constrained counties where follow-up and monitoring are weakest.

Relationship between Teacher Retooling and CBC Implementation

The study sought to determine the relationship between teacher retooling and the implementation of the Competency-Based Curriculum (CBC) in Senior Schools. A Pearson Product-Moment Correlation Coefficient was computed, and the results are presented in Table 4.3.

Table 4.3: Correlation Between Teacher Retooling and CBC Implementation

Variables	r	Sig. (p-value)	N	Interpretation
Teacher Retooling vs. CBC Implementation	0.684	0.000	185	Significant

The Pearson correlation coefficient ($r = 0.684$, $p < 0.05$) indicates a strong positive and statistically significant relationship between teacher retooling and CBC implementation. Furthermore, an associated p-value = 0.000, less than the significance level of 0.05, corroborates the relationship as significant. These results suggested that the higher levels of teacher retooling were related to the higher levels of CBC implementation in Senior Schools. On these findings, the study rejects the null hypothesis (H_O1) stating that there is no significant relationship between teacher retooling and CBC implementation.

Influence of Teacher Retooling on CBC Implementation

A simple linear regression analysis was conducted to determine the extent to which teacher retooling predicts the implementation of the Competency-Based Curriculum (CBC) in Senior Schools. The results are presented in the ANOVA and Coefficients Tables 4.4, 4.5 and 4.6.

Table 4.4: Regression Model Summary for the Influence of Teacher Retooling on CBC Implementation

Model	Unstandardized Coefficients (B)	Std. Error (SE)	Standardized Coefficients (β)	t	p-value	R^2	F (1,183)
(Constant)	1.127	0.184	—	6.13	0.000		
Retooling	0.684	0.059	0.684	11.59	0.000*	0.468	134.3*

Note: $p < 0.05$ indicates statistical significance.

Dependent Variable: CBC Implementation

Table 4.5: ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	14.792	1	14.792	51.287	0.000
Residual	16.806	183	0.092		
Total	31.598	184			

The ANOVA results show that the regression model is statistically significant ($F(1, 183) = 51.287$, $p = 0.000$). This indicates that teacher retooling significantly predicts CBC implementation.

Table 4.6: Regression Coefficients

Predictor	Unstandardized B	Std. Error	Beta	t	Sig. (p)
(Constant)	1.125	0.102	—	11.029	0.000
Teacher Retooling	0.684	0.096	0.684	7.511	0.000

The regression coefficients show that teacher retooling has a positive and statistically significant effect on CBC implementation ($B = 0.684$, $t = 7.511$, $p < 0.05$). This means that a one-unit increase in teacher retooling is associated with a 0.684-unit increase in the level of CBC implementation. The standardized beta coefficient ($\beta = 0.684$) demonstrates that teacher retooling is a strong predictor of CBC implementation.

The constant value ($B = 1.125$) suggests that when teacher retooling is held at zero, the baseline CBC implementation score would be 1.125. Consequently, the null hypothesis (H_O2) which stated that teacher retooling has no significant influence on CBC implementation was rejected. This finding implies that retooling significantly enhances teachers' ability to apply CBC pedagogical strategies effectively.

Overall, the regression model confirms that teacher retooling significantly influences the implementation of the Competency-Based Curriculum in Junior Schools, supporting the findings from the correlation analysis. These results corroborate findings by Wanjiku et al. (2024), who reported that teacher retooling initiatives in Kenya positively influence teachers' instructional competence. Similarly, Ngware and Nderu (2023) emphasize that effective CBC implementation depends on continuous professional development, mentorship, and adequate follow-up support after retooling sessions.

Challenges Affecting Retooling and Implementation

Interviews with Head of Institutions revealed anticipated challenges including:

i. Short training periods that limit mastery of CBC concepts.
ii. Inadequate ICT facilities and science laboratories.
iii. High workload due to continuous assessment documentation.
iv. Lack of ongoing mentorship and school-based coaching.

These findings align with Oduor and Bett (2024) and TSC (2025), who emphasize the need for sustained professional learning beyond workshops.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The study concludes that while a majority of teachers in Bomet County have undergone retooling, the training remains inadequate in duration, depth, and follow-up support. Retooling significantly enhances teachers' ability to implement CBC, but the impact is constrained by limited mentorship, infrastructure, and workload challenges.

Recommendations

i. Continuous Professional Development (CPD): TSC and MoE should institutionalize sustained CPD with regular refresher courses and coaching.
ii. Enhanced Mentorship: Establish school-based mentoring programs to reinforce CBC pedagogy.
iii. Adequate Resources: Equip schools with ICT and practical facilities for effective competency-based teaching.
iv. Training Duration: Extend retooling programs to at least two weeks to allow for deeper engagement with CBC content.

v. Monitoring and Evaluation: Implement regular assessments of retooling impact on teacher practice and learner outcomes.

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