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Teacher Retooling and Effective Implementation of the Competency-Based Curriculum in North Horr Ward, Marsabit County, Kenya

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Abstract

This study explored how teacher retooling programs support the effective implementation of the Competency-Based Curriculum (CBC) in North Horr Ward, Marsabit County, Kenya, a region grappling with limited educational resources. CBC promotes learner-centered teaching that emphasizes practical skills and critical thinking. However, its success hinges on teachers' preparedness to adapt to new methodologies. The study targeted stakeholders from public primary schools, including teachers, head teachers, Sub County education directors, QASO and, CSO. Using a mixed-methods approach, it combined descriptive surveys for quantitative insights with phenomenological methods for qualitative depth. The methods of data collections were questionnaires, in-depth interview schedule, observation schedule and document analysis. Findings revealed that while most educators attended CBC retooling sessions, 28% had not, and the majority (91%) rated the training quality as poor, citing short durations, under qualified facilitators, and minimal practical application. Regression analysis confirmed a positive link between training duration and CBC implementation success. The study highlights the critical need for ongoing, high-quality teacher development to bridge training gaps and promote effective curriculum delivery, especially in marginalized regions, aligning with the goals of SDG 4.

Keywords: *Teacher Retooling, Competence Based Curriculum*

Introduction

The introduction of the Competency-Based Curriculum (CBC) in Kenya represents a transformative shift in the country's education system, moving from the traditional 8-4-4 structure to a learner-centred model that emphasizes critical thinking, problem-solving, and practical skills essential for the 21st century (KICD, 2016). Effective implementation of CBC hinges on the preparedness and competence of teachers, making continuous professional development, often referred to as teacher retooling, an essential component. These retooling programs are designed to equip teachers with the pedagogical skills necessary to facilitate inquiry-based learning, collaborative projects, and differentiated instruction (Waweru & Muasya, 2019). However, barriers such as inadequate infrastructure, limited training resources, and a lack of support systems threaten the efficacy of such programs. To ensure CBC's success, it is vital to prioritize the professional growth of educators, particularly in adopting new teaching strategies aligned with the curriculum's goals (Molapo & Pillay, 2018).

In marginalized regions like North Horr Ward, these challenges are even more pronounced. Teachers in such areas often lack access to quality professional development, which directly impact their ability to implement CBC effectively. The Kenyan government, through institutions like the Ministry of Education and the Kenya Institute of Curriculum Development (KICD), has introduced various training initiatives aimed at enhancing teacher competencies. Nonetheless, the adequacy and relevance of these programs, especially in remote regions, remain a concern (Sitienei, 2020, Abdullai 2019)). This study therefore investigated the role of teacher retooling programs in North Horr Ward, examining the extent to which they meet the professional development needs of teachers, the challenges they encounter, and how these efforts influence instructional practices. By addressing the gaps in empirical data, the research will provide critical insights into the effectiveness of teacher retooling in supporting CBC implementation in underserved areas.

Statement of the Problem

The successful implementation of CBC in Kenya relies heavily on the capacity of teachers to effectively deliver competency-based instruction. To address this, the government and education stakeholders have introduced retooling programs aimed at enhancing teacher preparedness. However, challenges persist, particularly in remote areas such as North Horr Ward, where limited access to training, insufficient resources, and logistical difficulties hinder teachers' participation in professional development programs. Despite these ongoing efforts, there is little empirical evidence on the impact of such training programs on the practical application of CBC in classrooms, leaving uncertainties about whether teachers are adequately prepared to implement the curriculum effectively, especially in marginalized areas(Sossion, 2017).

A significant obstacle to the success of CBC is the insufficient training of teachers, with many lacking the necessary skills, particularly in ICT integration for competency-based learning.

Teachers, especially those in lower grades, have expressed concerns and lack confidence in implementing the newly introduced curriculum, despite undergoing prior training in teaching methodologies like the Tusome program and PRIEDE project intervention. The Presidential Working Party on Education Reforms (2023) emphasized the urgent need for qualified teachers to ensure the success of CBC and recommended a mandatory retooling program for teachers who graduated before 2023. This study aimed to assess the effectiveness of teacher retooling programs in North Horr Ward, examining how these efforts influence instructional practices and learning outcomes, with the goal of improving CBC implementation in marginalized areas.

Research Questions

The study was guided by the following research questions;

1. How does retooling of teachers influence the implementation of CBC in public primary schools in North Horr ward of Marsabit County?
2. What are the specific retooling needs of teachers in North Horr Ward, Marsabit County, and how do these needs affect their ability to implement the Competency-Based Curriculum effectively?

Hypotheses

H0: There is no significant association between the duration of CBC retooling and the effective implementation of CBC in the ward.

Theoretical Framework

The study was guided by Gross's Curriculum Implementation Theory (CIT). The proponent of the theory is Neil Gross in 1971. The theory emphasizes that successful curriculum adoption depends on factors such as teacher preparedness, resource availability, administrative support, and clear curriculum objectives. It also highlights the role of change agents within the education system and stresses that implementation is a dynamic, ongoing process rather than a one-time event. In the case of teacher retooling for the Competency-Based Curriculum (CBC) in North Horr Ward, the theory suggests that without sufficient training, instructional materials, and ongoing professional development, teachers may struggle with effective implementation. External challenges like poor infrastructure and resistance to change may further impede the process. Thus, teacher retooling programs must address these barriers by providing clear guidelines, adequate training, and necessary resources to improve CBC implementation and learning outcomes. Furthermore, the theory underscores the significance of organizational context and the extent to which schools are ready to embrace innovation, noting that systemic support and school-level leadership play crucial roles in driving successful change. Applying this theory to the study, it offers a framework for assessing whether teacher training in North Horr Ward is meeting educators' needs, highlighting the impact of unclear curriculum objectives, resource shortages, and lack of professional development on implementation. The theory also emphasizes the importance of continuous assessment in enhancing CBC success and informing policy recommendations for effective teacher retooling (Hlebowitsh, 2010).

Literature Review

Retooling of teachers refers to the process of providing teachers with new skills, knowledge, and strategies needed to effectively implement a new curriculum (Culajara, 2023). This often involves professional development programs, workshops, and training sessions designed to help teachers adapt to changes in educational standards, teaching methodologies, and subject content. Key aspects of retooling teachers for a new curriculum include offering continuous learning opportunities to help teachers stay updated with the latest educational trends and teaching techniques, ensuring teachers understand the goals, content, and structure of the new curriculum. It also involves training teachers in new pedagogical approaches that align with the curriculum's objectives, introducing new ways to evaluate student learning and progress. Helping teachers effectively use new educational resources and technology tools. Providing ongoing support and mentoring to help teachers integrate new practices into their classrooms. The goal of retooling is to ensure that teachers are well-equipped to deliver the new curriculum effectively, ultimately leading to improved student outcomes

In a study carried out to identify barriers hindering teachers from fully implementing a new curriculum in a school in Minneapolis, Minnesota in USA, Venenglosky, Cale and Aguilar (2018) employed a qualitative case study design. The conceptual framework used was Concerns-Based Adoption Model (CBAM). There was a total of 10 participants including eight teachers and two school administrators. Data were collected using a questionnaire, an interview guide, and observation checklist. Common themes from the study revealed a need for professional development, access to teaching and learning resource materials and teamwork among fellow teaching staff and a need for teacher support by school administration as they encountered major alterations in the curriculum content and design. Despite the geographical gap identified, the study employed qualitative design thereby not quantifying the challenges teachers faced and also failed to collect data from the school supervisor. This study intends to fill these gaps by using MMR design and also collect data using document analysis and observation schedule.

Kalthoum (2023) carried out research on Transformation to competency-based curriculum: readiness and self-efficacy among Islamic studies teachers in Kuwait. The study employed a descriptive analytical design. During the 2018–2019 school year, 180 female middle-school Islamic studies teachers completed a questionnaire that aimed to identify their perspectives regarding various dimensions of transition created by CBC implementation. A Kruskal–Wallis' test was implemented to examine potential differences in self-efficacy among participant responses to the planning, classroom implementation, and assessment dimensions related to age and experience variables. Results showed that participants had higher levels of competence in planning and classroom implementation than assessment when implementing the CBC. The novelty of the CBC and inadequate training were the main impediments regarding its implementation. The study concluded that teachers are the main cause of failure or success when applying innovative curriculum practices. Despite its strengths, the study had several limitations. The study was a descriptive survey and had no benefit of looking at teacher training and

perception. It did not consider students' learning outcomes and perceptions related to the transition to the CBC. Male teachers were not included in the study to capture a holistic perspective regarding the implementation of the new curriculum. The current study intends to bridge these gaps by involving both male and female teachers and also use multiple data collection tools.

Kabombwe and Mulenga (2019) study was on Implementation of the competency-based curriculum by teachers of History in selected Secondary Schools in Lusaka district, Zambia. The study was guided by the Concerns-Based Adoption Model. A mixed methods approach, explanatory sequential design was used in the study. The total sample size of the study was ninety-nine. The participants were randomly and purposively selected. A questionnaire was used to gather information from the teachers. Interview guides were also used to collect data from one Chief Curriculum Specialist, one Subject Curriculum Specialist, two Standard Officers, five Head-Teachers, ten Heads of Sections and twenty teachers. Classroom lesson observations and document analysis were also done. Quantitative data were analyzed using SPSS and qualitative data were analyzed thematically. The findings of the study revealed that 67% of the teachers of History did not understand the concept of the CBC or outcome-based curriculum. It was also revealed that teachers of History were not using the competency-based approaches to a large extent in the teaching and learning of History in the selected secondary schools because they did not have the knowledge and skills of the competency-based approaches. The study applied the same methodology as the current study, but was based on one subject History and failed to involve pupils in the study, gaps that this study will bridge.

Mpate (2023) did a study on Biology teachers' implementation of the competence-based curriculum in Tanzania: Challenges and Opportunities. The research was guided by the curriculum framework Theory. The study involved thirty-two participants, including heads of schools, heads of Biology departments, Biology teachers, and students. Data collection methods encompassed interviews, focus group discussions, document reviews, and observations, with thematic data analysis yielding significant insights. The findings illuminated that Biology teachers encountered several hurdles, including insufficient knowledge to effectively implement CBC, irregular and inadequate staff training related to CBC, insufficient teaching and learning resources, and inadequate laboratory space for equipment storage. The study had the same data collection instrument but, was carried out in secondary schools, was based on only one subject Biology, failed to include questionnaires as a tool and key informant such QASO, gaps that this study intends to fill.

Research by Gapfizi, Mbarute, Masengesho and Uwamahoro (2022) was on Challenges Faced by Physics Teachers during the Implementation of CBC in Rwanda. It was a quantitative research design. Questionnaires were used to collect data. 25 physics teachers were purposefully sampled in the Ngoma district located in the Eastern Province of Rwanda. Data were analyzed in terms of percentage using SPSS version 20. The study findings showed that 60% of the respondents agreed that the calendar and wide curriculum were a challenge for them to care

about the learners' problems, 56% of the participants did not have official training on CBC, 60% of the participants agreed that the number of the students in a classroom did not allow them to use group discussion in their teaching and learning process, The study by Gapfizi, et, al was quantitative, was carried out in secondary schools, had only physics as the subject of study and physics teachers as their sample. The only data collection instrument was questionnaires which did not allow for further clarification on issues. The current study intends to fill these gaps by using MMR design and multiple data collection and data sources to investigate institutional factors affecting implementation of CBC in public primary schools in the ward.

Mwita, Onyango and Obuba (2022) study was on CBC Training Undertaken by Teachers on their Implementation on Grades 1, 2 and 3 in Public Primary Schools in Migori County, Kenya. A descriptive survey design was adopted. The sample size for the study were180 head teachers, eight Sub County QASOs, and 544 grade 1-3 teachers. Questionnaires and interview schedules were used to collect data. The study applied quantitative analysis techniques using descriptive and inferential statistics to analyze data. The researchers' document analysis of Migori County Educational Office showed that Migori County teacher preparedness matrix in terms of training showed that very few teachers were trained on CBC implementation in the County. Only an average of 39.6% of teachers had been trained in the County since the introduction of CBC by then. The highest percentage of trained teachers was in Nyatike at (47.34%, followed by Uriri at (44.31%), Awendo (40.39%), Kuria West (39.48%), Migori (36.51%), Suna West (34.22%), Kuria East (33.24%) and Rongo (32.77%). The study beside the locale gap was quantitative, did not collect data from CSOs who are key in CBC training, hence the need for the current study.

A study by Muruiki (2022) was aimed at identifying the school-based issues that influence CBC implementation in public primary schools of North Eastern Kenya. Being secondary research, the researcher used sampling methods relevant to secondary research techniques. The study reviewed past research done on the topic. The study also targeted a diverse group of educational stakeholders varying in age, academic qualification, and professional advancement. The sample size included 14 head teachers, 100 teachers, an education officer and two QASOs. The respondents were chosen using stratified, simple random, and purposive sampling procedures. Data were collected using Questionnaires and interviews, which were then, analysed using qualitative and quantitative methodologies. The findings were presented using descriptive statistics using tables and graphs. According to the survey's findings, 68% of instructors in public pre-primary schools did not receive CBC training. This confirmed Abdullahi's (2019) study in Garissa whose finding was the same. The study though in similar Counties, was carried out in preschools, was desk research, did not include CSO who are important teacher trainers, used only frequencies and percentage for analysis of data and also covered three counties which are too large and with disparities between urban and rural areas. The current study intends to bridge these gaps.

Cherotich (2023) carried out research on Influence of Teachers' Preparedness on Implementation of CBC in Public Primary Schools in Bomet East Sub-County, Bomet County, Kenya. The study was anchored on theory of knowledge development. The study utilized a descriptive survey research design, thus making use of questionnaires and interviews for data collection. The study used a sampled of 52 head teachers, 156 teachers and two CSOs. Data collection involved questionnaires for teachers and interviews with head teachers and CSOs. The study revealed that the majority (89.9%) of teachers in the public primary schools in Bomet East had only received one-week training on CBC. Interviews with Head Teachers and CSOs revealed that, 100% of teachers had attended CBC training, with 58.8% being competent to provide instruction using CBC methodology while 41.2% were deemed incompetent. Cherotich's study was quantitative; had only two data collection instruments and did not include QASOs who are trainers of CBC. The current study which is anchored on Vgotsky's social constructivism theory, will use MMR, multiple data source and data collection instrument to bridge these gaps.

A study by Mutua and Waweru (2023) was aimed at investigating teachers' competence and its influence on effective implementation of CBC in public Primary schools in Machakos County, Kenya. Curriculum Implementation Theory by Gross (1971) was used. Descriptive survey design was applied. The sample size were 16 schools, 16 head teachers, 16 deputy head teachers and 188 public primary school teachers selected through stratified random sampling. An interview schedule, questionnaire and an observation checklist acted as the data collection tools. Both quantitative and qualitative methods were applied in field data collection. Quantitative data were analyzed using percentages and frequency counts, tables, charts and graphs. Qualitative data analysis used a thematic approach. The study findings indicated that teachers' attendance to in-service training was indicated by 60% while 40% of the respondent's portrayed non-attendance. The study noted that 40% of teachers in the county not going through in-service were a huge number, seven years after the implementation of CBC. Mutua and Waweru's study was quantitative, omitted QASOs and CSOs who are teacher trainers and did not use document analysis to quantify training frequency and adequacy gaps that this study intends to bridge.

Research Paradigm and Design

The study utilized a mixed-methods research design, specifically an explanatory sequential design, which involved collecting quantitative data first, followed by qualitative data collection to provide deeper insights. This approach allowed the research to capture statistical trends related to the adequacy, frequency, quality and effectiveness of teacher retooling programs for CBC implementation. By combining these two types of data, the study aimed to provide a comprehensive understanding that can inform teacher professional development and curriculum strategies.

The quantitative component of the study used a descriptive survey design to collect numerical data on the relevance and effectiveness of teacher retooling programs through structured questionnaires. This was supplemented by qualitative data collected using a phenomenological design, which explored teachers' personal experiences and perceptions of the

training. Through in-depth interviews and document analysis, the study uncovered patterns and insights into the impact of retooling on CBC implementation in North Horr Ward. This mixed-methods approach ensured both statistical and contextual insights into the study's focus.

Target Population

The target population of the study was all public primary schools in the ward (N=10), the Sub County education directors (N=2), Quality Assurance and standard Officer (QASO N=1), the Curriculum Support Officer (CSO N=1), the head teachers (N=10), and teachers (N=80), in the Sub County. The descriptive survey gathered quantitative data from head teachers and teachers to identify adequacy, frequency and quality**,** while phenomenology provided in-depth qualitative insights from specific respondents. Engaging multiple stakeholders ensured a holistic analysis through triangulation, leading to effective, community driven solutions. This diverse yet focused target population captured both macro-level trends and micro-level experiences, making the findings relevant for policy and practice under the SDG 4 framework**.**

Sample and Sampling Techniques

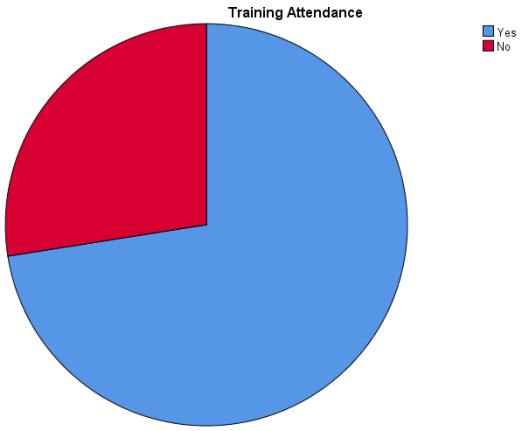
According to Lakens (2022) a researcher can choose to study the entire population because the size of the population that has the particular set of characteristics that the researcher is interested in is typically small. The research used the entire locations in the ward, all public primary schools in the ward, the entire population of head teachers, teachers, Sub County directors, QASO and CSO for the study. There are no rules for sample size in qualitative research as this depends on what one wants to know, the purpose of the study and practical factors. The validity, meaningfulness and insights generated from qualitative studies have more to do with the information richness of the cases selected (Creswell and Creswell, 2018)

Results and Findings

CBC Retooling: Teachers' Attendance of CBC Retooling

Head teachers and teachers who teach CBC in grades one to six in public primary schools in North Horr ward were asked whether they had attended any CBC retooling sessions. The results are as indicated in Fig. 1

Fig 1: Teachers' Attendance of CBC Retooling



The results in Fig. 1 indicate that 72% of the teachers attended scheduled CBC retooling sessions. However, there were 28% of teachers who did not attend any CBC retooling session. These represent slightly more than a quarter of the teachers in the ward who teach learners without any induction for the implementation of CBC. All the head teachers in the ward attended the retooling sessions. This information was confirmed during the interviews for the sub-County directors, QASO and CSO who all stated that 75% of the teachers have been retooled while 25% were not. The finding concurs with Mutua and Waweru (2023) study in public Primary schools in Machakos County, Kenya whose findings were that 40% of the teachers in the County did not attend any retooling session for the implementation of CBC. According to CIT, any teacher who purports to teach learners without acquiring the knowledge and competencies required of a facilitator of that specific curriculum is out rightly destroying and demoralizing the learners (Gross, 1971 as quoted by Orina, 2022).

Frequency of Re-tooling Sessions

Head teachers and teachers who attended re-tooling sessions were asked to indicate the frequency of re-tooling sessions they had attended. The result is displayed in table 1 below.

Table1. Frequency of Retooling Sessions

	Once a term		Twice a term		Once a year	
	N	%	N	%	N	%
Head Teachers	2	20	0	0	7	70
Teachers	2	2.5	1	1.25	77	96.3

From Table 1 total of two teachers and two head teachers attended re-tooling training once a term. Only one teacher respondent attended re-tooling training twice a term. Eight (80%) of the head teachers and 77 (96.3%) of the teacher respondents attended once a year. From the

tenets of CIT, a teacher who understands what he/she is teaching is more likely to be competent and efficient when implementing a new curriculum in the classrooms (Munna, 2021). The frequency of the re-tooling, confirm that they were not sufficient to cover crucial CBC concepts in-depth in a way that would equip teachers for its implementation. A study by Okee and Kamugisha (2024) in Wakiso District, Uganda whose findings were that the frequency of in-service training shows a substantial positive effect, with each additional instance of training correlating with a 0.70 increase in competency levels concurs with the findings. Singh and Jones (2022) highlight the necessity of thorough teacher training and professional development.

Duration of Retooling Sessions

The study also assessed the duration of the CBC re-tooling sessions. Table 2 illustrates the results of the findings.

Table 2: Duration of Retooling

Duration of Training

Teacher or HT		Frequency	Percent	Valid Percent	Cumulative Percent
Teacher	1-3 days	62	77.5	77.5	77.5
	4-6 days	4	5.0	5.0	82.5
	7-9days	11	13.8	13.8	96.3
	More than 10 days	3	3.8	3.8	100.0
	Total	80	100.0	100.0	
Head teacher	1-3 days	6	60.0	60.0	60.0
	4-6 days	1	10.0	10.0	70.0
	7-9days	2	20.0	20.0	90.0
	More than 10 days	1	10.0	10.0	100.0
	Total	10	100.0	100.0	

From the responses in Table 2, Head teachers, six (60 %) and teachers 62 (77.5%) responded that the entire CBC retooling session took 1-3 days, one (10%) of the head teachers

and four (5%) of the teachers responded that the retooling sessions took between 4-6 days. Two (20%) of the head teachers and 11 (13.8%) of the teachers responded that the session were 7-9 days. One (10%) of the head teachers and three (3.8%) of the teacher responded that it took more than 10 days. The majority of the respondents (77.5% and 60% of teachers and head teachers respectively) attended between 1-3 days re-tooling session which is basically 24 hrs and 10% and 5% of head teachers and teachers respectively for 4-6 days which is 48 hrs assuming a normal working day of 8 hrs per day. Chaudhuri, McCormick, and Lewis (2019) opined that an effective training program requires an average of 90 hour of training for a teacher to sufficiently get the concepts of the curriculum design. They further explain that a standardized training should begin with assessing the knowledge teachers have in pre-training, offer training then conduct an evaluation to test the skills gained from training. The study concurs with Ashiali (2022) in Taveta Sub-County, Kenya whose findings were that in some regions, teachers were trained for one to three days. The question that needs more investigation is whether the duration of CBC retooling was sufficient for the head teachers and teachers to get major concepts in CBC.

During the interview to confirm that the duration of retooling session was insufficient one of the education officials had this to say

> *"The retooling sessions were too short; often two to four days and the content was too much. CBC champions who retooled the teachers only covered contents they thought were major and would help teachers in teaching and learning as a quick fix for the implementation of CBC"*

Quality of Retooling.

The study also sought to find out the quality of the retooling sessions through a 3-point likert scale. The findings are summarized as shown in Table 3.

Table 3: Quality of Retooling.

Quality of Retooling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor	82	91.1	91.1	91.1
	Satisfactory	6	6.7	6.7	97.8
	Good	2	2.2	2.2	100.0
	Total	90	100.0	100.0	

From table 3 it is evident that 91 % of the head teachers and teachers rated the quality of the retooling sessions as poor. Only about 7% and 2% of the head teachers and teachers rated the quality of the retooling as satisfactory and good. This finding was confirmed by all the education

officials who unanimously agreed that the retooling that the teachers received was not only inadequate but poor. In their study on the effectiveness of training delivery methods, Fukkink et al. (2019) revealed that hands-on, practical training significantly improved the implementation of CBC in classrooms. The study emphasized the importance of aligning training content with real-world classroom challenges, thereby equipping teachers with the skills to apply CBC principles practically. Furthermore, Brauer (2021) suggests the importance of adjusting in-service training delivery methods to include ICT enhances curriculum implementation by making training more accessible, efficient, and aligned with the demands of modern classrooms**.**

Factors that Affected the Quality of Retooling Sessions

The study also found out what factors affected the quality of the retooling sessions through an open-ended question. The findings were summarized into themes. The themes that emerged were as shown in table 4.

Table 4: Factors that affected Quality of CBC retooling.

Factors	**Frequency**	**Percentage**
Facilitators were not knowledgeable	63	70 %
Retooling duration was too short	78	87 %
Sessions were very theoretical	69	77 %
Question and answer sessions were avoided	58	64 %
Facilitators were just reading slides without explaining	63	70 %
Teachers were not enthusiastic about the retooling	38	42 %
Too many trainees being handled by few trainers	50	56 %

N=90

From table 4 it is evident that the factors that affected the quality of the retooling session were numerous. Prominent among them as noted by head teachers and teachers are: facilitators lack of adequate knowledge and reading of slides without explanation (70%); too short retooling sessions (87%), Sessions being theoretical (77%); Question and answer sessions being avoided (64%); Teachers not being enthusiastic about the retooling (42%) and too many trainees being handle by few trainers (56%).During the interview sessions the education officials also raised the same reasons for the ineffectiveness of the training session. They additionally added that the resources needed to carry out the retooling sessions were inadequate and the long distance for teachers to travel to the retooling centre. One of the education officials had this to say on the factors

"Many of the teachers complained about the retooling being done during the holidays. They kept on walking out to pick their phones and interrupted the sessions. It was also difficult for me to stick to the retooling timetable for I had to hurry up and complete the presentations as scheduled. There was no time for practical and discussion sessions".

The study findings concur with Koskei and Chepchumba (2020) study in Nakuru County whose findings were that trainers/facilitators were incompetent, had not conceptualized and understood the CBC to adequately facilitate the training effectively. The training sessions also were conducted for two-three days only instead of the stipulated five days and the trainees were too many for the trainers to handle for practical work.

Effectiveness of the training to sufficiently equip for some aspects CBC.

The study also found out how effective the training was in equipping the head teachers and teachers with some aspects of CBC implementation. Table 5 illustrates the findings.

Table 5: Effectiveness of the training to sufficiently equip for some aspects of implementation of CBC

	Disagree				Undecided				Agree			
	HTs		TRCHs		HTs		TRCHs		HTs		TRCHs	
	F	%	F	%	F.	%	F	%	F.	%	F	%
Interpretation of Curriculum Design	2	20	24	30	1	10	0	0	7	70	56	70
Core Competences and Values	6	60	43	59	0	0	1	1	4	40	36	40
Professional document Preparation	1	10	16	20	1	10	1	1	8	80	63	79
CBC Pedagogies	7	70	56	70	0	0	2	3	3	30	22	28
Parental engagement and empowerment	6	60	58	73	0	0	0	0	4	40	22	28
Infusion of PCI	6	60	60	75	1	10	1	1	3	30	19	24
Competence Based Assessment	7	70	66	82	1	10	2	3	2	20	11	14
Use of Digital Device	9	90	72	90	0	0	3	4	1	10	5	6

Table 5 shows that, 70 % of the head teachers and teachers agreed that the retooling equipped them for the aspect of the interpretation of the curriculum Design. The head teachers

and teachers about 80% agreed that the retooling equipped them for preparation of professional document. Only 30% and 20% of them disagreed that the retooling equipped them for the interpretation of the curriculum Design and preparation of professional documents which may account for the 28% of the teachers who were not retooled. During the interviews all the education Officials responded that the teachers can interpret the curriculum design correctly. They also noted that teachers prepared their professional document in accordance with CBC requirements. The QASO noted

> *"Our teachers can correctly interpret the curriculum design. They prepare their schemes of work from the curriculum design for all the learning areas. Their lesson plans are aligned with CBC requirements. The head teachers regularly check their professional record. Record that teachers do not prepare is IEP to cater for SNE for they have not been trained to prepare this record".*

The finding confirms Ojunga, (2023) study in Kikuyu sub county, Kiambu County on influence of teacher preparedness on implementation of CBC in public primary schools.

The head teachers and teachers about 60% both and 60% and 75% respectively disagreed that the retooling equipped them for development of core competences and values and infusion of PCIs. Development of core competences and values are major pillars of CBC and a requirement for the 21st Century skills acquisition. The main streaming of PCIs is vital component of not only CBC but learners' everyday life. The head teachers and teachers also disagreed both at 70% that the retooling equipped them for use of CBC pedagogies in teaching and learning. Both of them 90% disagreed that the retooling enabled them to use digital devices in their teaching and learning. Both of them disagreed at 60% and 73% that the retooling equipped them for parental engagement and empowerment.

The head teachers (70%) and teachers (82%) disagreed that the retooling equipped them for CBA in the implementation of CBC. This is a worry statistic as CBA is an integral part of teaching and learning. If teachers are not well equipped for CBA there is a void in determining whether the lessons taught were successful or not. It will be difficult for both the teacher and the pupils to reflect on the lesson. Social constructivism advocates for assessment to reflect real world situation and that it should be a collaborative practice to gauge learners' competence within a given context. During the interviews the educational officials agreed that the teachers are not well versed in CBA more so on formative assessment and use of various CBA tools. Many teachers still use summative assessment. The pupils during FGDs confirmed that most of the assessment they are given are paper pen test during opening, mid-term and closing. They also reported that all their written tests are multiple choice. Social constructivism theory advocates for assessment to reflect real world situation and involves collaborative practice to gauge learners' competence within a given context.

During document analysis head teachers checking of the preparation of professional documents were evident and records of weekly signed scheme of work and lesson plans were

available. During observation schedule one of the head teachers remarked that most of the teachers are not using learner centered teaching methods because they are not adequately trained. The findings of this study are confirmed by Shiboko and Mrema (2024) in Same District Tanzania and Owuondo (2023) whose findings noted that the implementation of CBC is rendered ineffective due to lack of learner-centered interactive teaching strategies and challenges of teachers' pedagogical knowledge gaps in implementation of CBC

Retooling Needs

Head teachers and teachers were asked to identigy retooling needs that would enable them to effectively implement CBC. The Responses were analyzed in the form of themes, frequencies and percentages and the results are as displayed in Table 6.

Table 6 : Retooling Needs

	Head Teachers				Teachers			
	Yes		No		Yes		NO	
	F	%	F	%	F.	%	F	%
(BECF) Interpretation of Curriculum Design	1	10	9	90	18	23	62	78
CBC Pedagogies	7	70	3	30	59	74	21	24
Preparation of Professional documents	2	20	8	80	24	30	56	70
Development of Core competences and Values and Infusion of PCIs	7	70	3	30	60	75	20	25
Integration of Technology	7	70	3	30	56	70	24	30
Competence Based assessment	8	80	2	20	72	90	8	10
Parental Engagement & empowerment	8	80	2	20	64	80	16	20

N=90

As indicated in Table 6, themes on interpretation of curriculum Design and preparation of professional records were adequately covered. On interpretation of curriculum design and preparation of professional documents only 10% and 27.5% and 20% and 30% of head teachers

and teachers respectively required additional retooling. These may be teachers who did not attend the retooling sessions. Head teachers and teachers therefore feel adequately prepared to interpret the curriculum design and prepare their professional document.

The aspects of CBC that the head teachers and teachers overwhelmingly selected as requiring further retooling were CBC pedagogies at 70% and 74%; Development of Core competences and Values at 70% and 78%; Infusion of PCIs at 70% by both, Integration of Technology at 80% and 90%; CBA at 90% and 86%; and Parental engagement and empowerment at 80% and 93% respectively. It is evident from the table that the head teachers and teacher require more retooling sessions to enable them effectively implement CBC in the ward. During interviews for education officials, they all unanimously agreed the need for further and frequent teacher retooling. They specifically noted the urgency of retooling teachers on development of core competences, values and infusion of PCIs. Other areas they noted needed urgent retooling were CBC pedagogies, use of digital devices in teaching and learning and Competence Based Assessment tools, reporting and feedback. One of the education officials had this to say

> *"Our teachers are very eager to implement CBC but they are not adequately trained. Most teachers when they come to my office request that they further be trained on CBC pedagogies, development of core competences, CBA tools and reporting and use of ICT in teaching and learning*".

During documents analysis there was no evidence of retooling needs assessment and there was no evidence of any planning for teacher retooling in the school improvement plan. There were only plans for infrastructural development and requirements. The study concurs with Okeyo and Mokua (2023) study in Nyamira Sub-County, Kenya whose key findings were that teachers were ill-prepared in terms of pedagogical knowledge, skills and attitudes towards implementation of CBC and hence hindrance to effectiveness in the implementation of the CBC.

Hypothesis testing on effect of the duration of training on aspects of effective implementation of CBC

A regression analysis was performed to determine the association in the predictor variable between aspect of effective CBC implementation and the duration of CBC training. Table 15 represents the regression analysis**.**

Table 7: Regression Analysis to test Hypotheses

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.753[a]	.568	.563	.480

a. Predictors: (Constant), Training Duration

b. Dependent Variable: Effectiveness of Training to Implement CBC

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.652	1	26.652	115.531	.000[b]
	Residual	20.301	88	.231		
	Total	46.954	89			

a. Dependent Variable: Effectiveness of Training to Implement CBC

b. Predictors: (Constant), Training Duration

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.969	.098		20.182	.000
	Training Duration	.607	.056	.753	10.749	.000

a. Dependent Variable: Effectiveness of Training to Implement CBC

From table 7 it is evident that R=0.753 which suggests that there is a strong positive correlation between the dependent variable (Effectiveness of Training to Implement CBC) and the independent variable (Training Duration) The closer R is to1 or -1, the stronger the relationship. The positive correlation of 0.753 indicates that as Training Duration increases the dependent variable (The effective of training to implement CBC) is likely to increase as well. The R2 of 0.568 indicates that 56.8% of the variation in the dependent variable can be explained by the independent variable, Training Duration. The F-statistic tests whether the regression model as a whole is a good fit for the data. A very large F-value suggests that the model is a significant improvement over using just the mean to predict the dependent variable. F-value of 115.531 is very high, indicating that the model explains a large portion of the variability in the

dependent variable. The p-value (0.000) for the F-statistic is less than 0.05, which indicates that the regression model is statistically significant. This confirms that Training Duration is a significant predictor of the Effectiveness of Training to Implement CBC. B= 0.607 is the slope of the regression line. It tells us that for each additional unit of Training Duration, the dependent variable (Effectiveness of Training to Implement CBC**)** is predicted to increase by 0.607 units, assuming all other factors remain constant. In other words, as Training Duration increases by 1 unit, the dependent variable **(**Effectiveness of Training to Implement CBC) increases by 0.607.

Training Duration (Beta = 0.753) reflects the relative importance of Training Duration in predicting the dependent variable (Effectiveness of Training to Implement CBC). Since Beta = 0.753 is relatively large, it suggests that Training Duration is a strong predictor of the dependent variable. A higher Beta indicates that changes in the predictor have a large impact on the dependent variable in terms of standard deviations. The t-statistic is used to test the null hypothesis. A higher absolute value of the t-statistic indicates stronger evidence against the null hypothesis. 10.749 therefore is very large, suggesting that Training Duration is statistically significant in predicting the dependent variable. The p-value (Sig.) of 0.000 for Training Duration is less than 0.05, which indicates that the relationship between Training Duration and the dependent variable is statistically significant. we can confidently then say that Training Duration is a meaningful predictor of the dependent variable in this model. Therefore, we reject the null hypotheses because P value which is 0,000 is less than 0.05 indicates that Training Duration and the dependent variable are statistically significant

Conclusion

The study reveals significant insights into the current state of CBC retooling among teachers and head teachers. While a majority (72%) of the teachers and 100% of head teachers attended the scheduled retooling sessions, the remaining 28% of teachers were left without any induction on CBC, which poses a challenge for the effective implementation of the curriculum. Additionally, the frequency and duration of the training sessions were insufficient to adequately equip educators with the necessary skills and competencies for CBC implementation. Most of the training took place either once a year or lasted only a few days, far below the recommended standards for comprehensive professional development. The quality of the retooling sessions was also questioned, as a large proportion of respondents (91%) rated the sessions as poor, citing inadequate facilitation, overly theoretical content, and a lack of hands-on, practical training. Moreover, factors such as unknowledgeable facilitators, short training durations, and the avoidance of interactive elements like question-and-answer sessions, further undermined the effectiveness of the training. Despite these shortcomings, the majority of educators agreed that further retooling was necessary, particularly in areas like CBC pedagogies, the integration of technology, competence-based assessments, and parental engagement.

Recommendation

To enhance CBC implementation, several recommendations should be considered. The retooling sessions should occur more frequently, at least once per term, and last a minimum of five days to ensure a comprehensive understanding of CBC concepts. These sessions should focus on practical training, using hands-on activities, case studies, and real-world examples to engage teachers actively. Facilitators should also receive professional development to ensure they are well-equipped to address teachers' specific needs. Additionally, the sessions should cover core aspects of CBC, such as pedagogies, competency development, technology integration, assessment, and parental involvement, areas where teachers feel underprepared. Training should be tailored to regional needs, considering class sizes, resources, and learner challenges. Regular assessments of training needs should be conducted to keep up with evolving requirements, and ICT tools should be utilized to make training more accessible, especially in remote areas. These steps will improve teacher preparedness and enhance the effectiveness of CBC in education.

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