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Article





Competency based curriculum in Kenya: Taking stock of implementation process at early years education

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Abstract

This paper argues that the government implemented Competency Based Curriculum (CBC) with the aim of nurturing global learning competencies into learners. However, the quest faced many challenges at the Early Years Education (EYE) level. Such scenario was going to have a negative implication on producing learners with envisaged competencies. The purpose of this study therefore, was to investigate the gaps that existed in the designed curriculum framework and the actual practice during implementation process. The study adopted descriptive survey design method. Purposive sampling and simple random sampling were employed to select participants. Interview schedules, document analysis and structured observations schedules were utilized to collect data. Quantitative data was analyzed by use of frequencies, percentages, means, pie charts and bar graphs while qualitative data was analyzed thematically and reported inform of quotations and narrations. It was established that gaps existed in the stated curriculum framework designed and the actual practice during implementation. The study concluded that teachers' we're not sufficiently retooled on pedagogy and assessment, making their understanding on curriculum implementation vague. There was acute shortage of infrastructure especially digital devices and internet connectivity, undermining the attainment of digital literacy competency. Stakeholders were not adequately sensitized on the rationale for the curriculum reforms before roll out making them sceptical, uncertain and doubtful. It recommended retooling of teachers, funding to be backed by a coherent policy which prioritizes the provision of infrastructure, teaching and learning resources and sensitization process to involve all stakeholders working to implement the reform in shared sense-making.

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Keywords

Competency based curriculum; early years education; implementation; Kenya

Introduction

The conceptual foundation for Competency Based Curriculum (CBC) emerged from John Dewey's educational philosophy, which emphasized experiential learning through authentic activities, learner-centered pedagogical approaches, active engagement, problem-solving methodologies, critical thinking development, creative expression, collaborative learning environments, and the integration of learners' interests with their lived experiences (Willians, 2017). While these pedagogical principles were foundational, CBC evolved as a distinct

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educational paradigm in the United States before diffusing globally across diverse educational systems (Chen, 2023). The widespread international adoption of CBC frameworks stems from their emphasis on equipping learners with practical, transferable competencies and knowledge, with particular focus on real-world application and experiential learning methodologies considered essential for effectiveness in the increasingly interconnected and dynamic 21st century global society (Catacutan et al., 2023).

Various nations have implemented CBC frameworks with heterogeneous outcomes. Jamaica instituted a National Standards Curriculum; however, educators encountered significant implementation challenges attributable to inadequate professional development and insufficient educational resources (Scott, 2020). Japan incorporated future-oriented values within its educational framework but encountered difficulties related to excessive standardization, predominance of rote memorization pedagogies, and persistence of teachercentered instructional approaches (Tsuneyoshi, 2020). Singapore developed the "Thinking School, Learning Nation" educational philosophy articulating critical thinking and collaborative competencies as central learning outcomes; nevertheless, classroom instructional practices continued to prioritize examination-oriented subjects over holistic educational development (Deng et al., 2013). Similarly, South Korea's CBC implementation yielded contradictory outcomes: despite achieving high PISA rankings, measures of student psychological well-being remained significantly below OECD averages (Kyunghee, 2020). Indonesia's CBC implementation emphasized 21st century competencies; however, traditional instructional methodologies including drill-based approaches and rote learning pedagogies persisted throughout the educational system (Hayat & Adiyono, 2025; Kristiyani, 2019; Puad & Ashton, 2022).

In the African context, numerous nations have introduced CBC frameworks with the explicit objective of developing graduates possessing requisite competencies for 21st century challenges; however, cross-national research encompassing Nigeria, South Africa, and Rwanda revealed systemic inadequacies in teacher professional development and institutional support mechanisms (Akinrinola et al., 2020). Benin's CBC implementation generated significant contestation among educational stakeholders (Akimi, 2014), while Mozambique's CBC adoption demonstrated minimal transformation in learning content despite substantial curricular revision (Kusaka, 2020). Zimbabwe, Zambia, Rwanda, Tanzania, Uganda, and South Sudan have implemented CBC frameworks but encountered comparable implementation challenges including resource constraints, insufficient teacher professional development, and significant disparities between policy formulation and implementation practices. Kenya's pursuit of an appropriate curriculum represents a longstanding educational policy objective. Since attaining independence, the nation has initiated multiple educational reforms addressing persistent challenges including unemployment among school graduates and escalating educational costs. Despite comprehensive recommendations from various educational commissions (including the Gachathi report, Mackay Commission, Kamunge commission, Koech report, and Odhiambo report), previous curricula failed to achieve societal transformation through enhanced productivity and economic development. Subsequently, the government formulated Sessional Paper No. 2 of 2015 on Reforming Education and Training, which recommended the implementation of CBC (Republic of Kenya, 2015).

Kenya formally adopted CBC in 2017, prioritizing seven core competencies: communication and collaboration, critical thinking and problem solving, creativity and imagination, citizenship, digital literacy, learning to learn, and self-efficacy (Republic of Kenya, 2017). The underlying educational philosophy positioned education as central to human and economic development, emphasizing holistic development of individual learners' potentialities to produce intellectually, emotionally, and physically balanced citizens. However, notwithstanding governmental implementation efforts, significant challenges emerged at the Early Years Education (EYE) level, including inadequate strategic planning, insufficient human and material resources, and limited stakeholder engagement (Akala, 2020; Amunga et al., 2020; Cheptoo & Ramdas, 2020; Republic of Kenya, 2023; Sifuna & Obonyo, 2019). The acquisition of global learning competencies fundamentally depends on effective CBC implementation. Despite Kenya's curriculum adoption with significant potential for catalyzing national development, implementation encountered numerous challenges particularly at the Early Years Education level. These implementation difficulties constitute a significant concern because ineffective curriculum operationalization would adversely impact the attainment of envisioned competencies and undermine the educational objective of holistically developing individual learners' potentialities. Consequently, the primary purpose of this empirical investigation was to examine the discrepancies that existed between the designed curriculum framework and the actual implementation practices at the Early Years Education level in Kenya.

Literature Review

Research across multiple countries reveals consistent challenges in CBC implementation. Studies in Indonesia (Gunawan, 2017), Cameroon (Ambei et al., 2020), and Tanzania (Nzima, 2016) demonstrate that teachers often lack clear understanding of CBC principles, interpret them differently, and continue using traditional teaching methods despite the competencyfocused curriculum. This pattern extends throughout Africa, with studies in Zimbabwe, Zambia, and Rwanda showing similar knowledge gaps among educators. Mufanechiya & Mufanechiya (2020) documented Zimbabwean teachers' struggles to transform deep-seated traditional practices, Kabombwe and Mulenga (2019) found 67% of History teachers in Zambian secondary schools lacked understanding of CBC concepts, while Sibomana and Dushimumuremyi (2018) identified limited competent-based teaching materials in Rwanda. Kafyulilo et al., (2013) discovered inadequate CBT implementation in Tanzanian teacher training institutions, and Ngaruiya (2023) noted that while Kenya achieved structural change from 8-4-4 to 2-6-3-3-3, transforming the curriculum's spirit remained challenging. These findings suggest systemic challenges in teacher preparation that transcend national boundaries, though most studies focused on different educational levels or specific subject areas rather than comprehensive EYE level implementation in Kenya.

Assessment challenges represent another critical dimension of CBC implementation globally. Researchers in Benin (Iwikotan, 2021), Zimbabwe (Mavunga, 2016; Monokore & Chiwiye, 2021), and Kenya (Andiema, 2020) have documented teachers' difficulties in designing appropriate assessment contexts, developing valid assessment instruments, and bridging the gap between theoretical assessment knowledge and practical application. These studies highlight assessment as a universal challenge, though most focused on specific contexts (language testing, secondary education, or special needs) rather than comprehensive assessment practices across all learning areas at Kenya's EYE level. Infrastructure and resource limitations significantly impede CBC implementation across countries. Studies in Rwanda (Karamugire et al., 2019), Tanzania (Nkya et al., 2021; Semlugu, 2018), and Kenya (Namuyemba et al., 2021) reveal inadequate qualified staff, insufficient materials, large class sizes, and poor facilities. These constraints make implementing the hands-on, learner-centered approaches central to CBC particularly difficult, especially in resource-constrained environments typical of many African educational systems.

Socio-cultural factors, including stakeholder resistance and colonial educational legacies, further complicate implementation efforts. Research in Kuwait (Taiba et al., 2021), Jamaica (Mayne & Raymond, 2020), and Tanzania (Lupeja & Komba, 2021) shows how parental awareness gaps, teacher skepticism, and entrenched educational paradigms hinder CBC adoption. In Kuwait, parents lacked awareness while teachers questioned CBC's effectiveness in developing critical thinking; in Jamaica, teachers resisted new instructional designs despite policy directives; and in Tanzania, colonial education legacies led to perceiving education primarily as a pathway to employment rather than skill development. In Kenya specifically, Momanyi and Rop (2019) found teachers inadequately prepared with vague CBC understanding, hindering effective delivery and evaluation.

This literature review reveals significant research gaps: most studies examine either different educational levels, specific subject areas, or isolated implementation aspects rather than comprehensively analyzing the disparities between designed frameworks and actual practices. While many countries share implementation challenges including teacher preparation deficits, assessment difficulties, resource limitations, and stakeholder resistance, Kenya's specific context requires focused research, particularly at the foundational Early Years Education level where CBC was first implemented. This study addresses these gaps by comprehensively examining implementation disparities across all aspects of Kenya's EYE level CBC implementation.

Global Implementation of Competency Based Curriculum

The foundational educational principles encompassing experiential learning through authentic real-world activities, learner-centered pedagogical approaches, active cognitive engagement and problem-solving methodologies, cultivation of higher-order thinking skills, creative expression, collaborative learning environments, and integration of learners' lived experiences with educational content established the theoretical underpinnings for Competency Based Curriculum (CBC). While these pedagogical principles were seminal, CBC subsequently evolved as a distinctive educational paradigm originating in the United States before diffusing transnationally across European educational systems and ultimately globally (Chen, 2023; Willians, 2017). The international proliferation of CBC frameworks can be attributed to their emphasis on developing learners' practical, transferable competencies with particular focus on experiential learning methodologies and real-world application essential for effectiveness in the increasingly interconnected and dynamic contemporary global society (Catacutan et al., 2023).

Jamaica implemented a paradigmatic transformation through its National Standards Curriculum, with the explicit objective of enhancing educational quality. Empirical evidence suggests, however, that educational practitioners predominantly characterized their implementation experiences as challenging due to insufficient professional development

opportunities and inadequate educational infrastructure, including overcrowded learning environments (Scott, 2020). Japan incorporated future-oriented values within its educational framework to facilitate societal advancement, emphasizing lifelong learning through continuous acquisition of competencies and metacognitive skill development within an adaptable learning framework. Nevertheless, excessive emphasis on standardization, behavioral regulation, mnemonic pedagogical approaches, teacher-centered instructional methodologies, and examination-oriented learning significantly constrained opportunities for developing students' intellectual curiosity and creative capacities. These constraints were further exacerbated by intense academic competition for admission to prestigious secondary and tertiary educational institutions (Tsuneyoshi, 2020).

Singapore formulated an innovative educational philosophy designated "Thinking School, Learning Nation" (TSLN), conceptualized primarily as a mechanism for enhancing systemic productive capacity in response to human and intellectual capital requirements within globalized economic contexts. The Framework for 21st Century articulated a comprehensive competency taxonomy including critical and inventive thinking, communicative proficiency, collaborative capacities, information literacy, civic engagement, global awareness, and intercultural competencies as essential educational outcomes necessary for Singaporean youth to achieve success in contemporary society (Deng et al., 2013). Despite this progressive theoretical framework, classroom instructional practices continued to prioritize examinationoriented subjects over holistic educational development and standardized assessment over alternative evaluative methodologies. This implementation discrepancy was substantially attributed to insufficient integration between national assessment frameworks and classroom instructional practices, persistence of traditional pedagogical cultural norms throughout the educational system, implementation strategies inadequately designed to support substantial pedagogical transformation, and insufficient professional authority among educational practitioners (Deng et al., 2013).

South Korea instituted CBC through its seventh curriculum framework, designed to prepare students for participation in an increasingly globalized, knowledge-intensive socioeconomic environment. The curriculum emphasized learner-centered approaches focused on individual aptitude development and creative expression, with the explicit objective of providing "happy education" facilitating personal aspiration development and talent cultivation. Paradoxically, despite achieving internationally competitive performance metrics on standardized assessments including PISA and TIMSS, student psychological well-being indicators consistently ranked significantly below OECD comparative standards. This discrepancy between educational achievement and learner satisfaction emerged as a significant sociopolitical controversy within South Korean educational discourse (Kyunghee, 2020). Indonesia implemented curricular reforms within the framework of 21st Century competencies, emphasizing knowledge acquisition, skill development, character formation, and metacognitive capacities (Kristiyani, 2019). Notwithstanding these progressive curricular objectives, traditional instructional methodologies including drill-based approaches and rote learning pedagogies remained predominant. Summative assessment practices continued to dominate, with educational practitioners maintaining the perception that elevated academic performance metrics indicated effective instructional practice. Furthermore, the hierarchical implementation structure with minimal stakeholder consultation resulted in significant disparities between policy objectives and instructional practices (Hayat & Adiyono, 2025; Puad & Ashton, 2022).

The Status of CBC implementation in Africa

African nations have extensively integrated Competency Based Curriculum frameworks to cultivate graduates possessing requisite skills for contemporary socioeconomic challenges, though implementation has encountered persistent systemic obstacles across the continent. Empirical research encompassing educational systems in Nigeria, South Africa, and Rwanda has revealed pervasive deficiencies in pedagogical preparation, with educational practitioners demonstrating insufficient professional development and institutional support necessary for effective instructional methodology and assessment practices (Akinrinola et al., 2020). This implementation pattern manifests consistently throughout the continent notwithstanding heterogeneous implementation chronologies and contextual variations.

Multiple West and Southern African educational systems have demonstrated comparable implementation challenges. Benin's CBC implementation, conceptualized to develop competitive, autonomous youth, rapidly generated significant contestation among educational stakeholders, with localized advocacy reflecting optimistic global educational discourse in direct opposition to disappointing policy outcomes and contextual constraints (Akimi, 2014). Mozambique's CBC adoption emphasized interactive utilization of sociocultural and technological instruments, yet demonstrated minimal transformation from knowledge-based to practical competency-based curriculum, with substantial discrepancies between instructional materials and intended curricular objectives. The cultivation of practical competencies was disproportionately dependent on educational practitioners who themselves demonstrated inadequate conceptual understanding of these competencies (Kusaka, 2020). Zimbabwe implemented CBC to address evolving economic conditions and foster self-reliance among youth populations, but encountered resource limitations, excessive educator workloads, and disproportionate pupil-teacher ratios (Muzembe et al., 2021). Similarly, Zambia's CBC implementation emphasized global competitiveness but lacked appropriately qualified educators, adequate instructional time allocation, and essential educational resources (Kabombwe et al., 2020).

East African educational systems manifest similar implementation difficulties. Rwanda's skills-based educational program was conceptualized to establish a knowledge-based economic framework with particular emphasis on scientific and technological advancement. Despite prioritizing critical thinking, creative expression, interpersonal competencies, and digital literacy integration (Rwigema & Andala, 2022), implementation encountered material resource constraints, inadequate pedagogical preparation, and temporal limitations that impeded comprehensive curricular completion (Nsengimana, 2021). Tanzania adopted CBC to address multilevel market demands at local, national, and global scales, yet 86% of educational practitioners demonstrated inadequate comprehension of fundamental CBC objectives (Komba & Mwandanji, 2015). The educational system further encountered insufficient governmental support, resource constraints, infrastructural inadequacies, limited professional development opportunities, and insufficient monitoring from curriculum development authorities (Nombo, 2022). Uganda rolled out CBC with the aim of improving quality of education and preparing students for the demands of 21st century. However, the academic institutions encountered challenges like; inadequacy of infrastructure, inadequate training of teachers, time-consuming in terms of preparation, poor support from educational stakeholders as a result of implementation (Kitasse & Ssembatya, 2024). South Sudan's CBC implementation, aimed to provide comprehensive educational quality with humanistic and transformative philosophical underpinnings, emphasizing information and communication technology, vocational education, and values education. However, substantial disparities emerged between planned and delivered curriculum, with critical analysis suggesting that meaningful experiential learning remained predominantly theoretical while necessary resources were constrained by curricular novelty and competing governmental priorities (Mogga, 2018).

These case studies demonstrate a consistent implementation pattern throughout Africa: CBC adoption with ambitious objectives for developing globally competitive graduates, systematically undermined by inadequate teacher preparation, insufficient resource allocation, and substantial disparities between policy intentions and implementation realities. These implementation challenges parallel Kenya's educational experience, suggesting systemic issues in CBC operationalization throughout the continent that necessitate targeted intervention across multiple dimensions of the educational system.

Implementation of CBC in Kenya: Perceptions, Prospects and Challenges

Kenya's pursuit of an appropriate curriculum represents a longitudinal trajectory of educational reforms addressing persistent socioeconomic challenges. Since independence, the nation has experienced quantitative educational expansion concurrent with escalating unemployment among educational graduates and increasing educational expenditure, generating intensive competition within a constrained economic environment. The Gachathi report (Republic of Kenya, 1976) identified the paradoxical coexistence of unemployment among educated populations alongside critical developmental sectors experiencing deficiencies in appropriately skilled human resources, illustrating fundamental incongruence between educational outcomes and national developmental requirements (Muricho & Chang'ach, 2013; Republic of Kenya, 1976).

Subsequent curricular reform initiatives consistently emphasized self-reliance and practical competencies, yet encountered recurring implementation difficulties. The Mackay Commission recommended self-reliance as the foundational educational philosophy (Republic of Kenya, 1981); nevertheless, the implemented curriculum progressively evolved toward academic orientation and examination prioritization rather than transformative educational experiences (Amutabi, 2019). Essential infrastructural facilities for practical skill development were deficient, educational practitioners received insufficient professional preparation, and entrepreneurial competency development remained inadequate. These systemic deficiencies exacerbated unemployment levels, societal challenges, and elevated educational attrition rates - precisely the issues the reforms were designed to address (Muricho & Chang'ach, 2013). The Kamunge Commission similarly advocated education for self-reliance and entrepreneurial development (Republic of Kenya, 1988), while the Koech report proposed a coherent Afrocentric educational philosophy to guide curricular design and implementation, emphasizing Kenya's necessity to establish educational identity through historical and philosophical foundations (Republic of Kenya, 1999).

The Task Force on Re-alignment of Education Sector to Kenya Vision 2030 and Constitution of Kenya 2010 (Odhiambo report) (Republic of Kenya, 2012) culminated in Sessional Paper No.

2 of 2015 on Reforming Education and Training, which recommended Competency Based Curriculum implementation (Republic of Kenya, 2015). The underlying philosophical framework positioned education as central to human and economic development, emphasizing holistic learner development to produce intellectually, emotionally, and physically balanced citizens. CBC incorporated learner-centered pedagogical approaches, formative and authentic assessment methodologies, and emphasized competency development with practical knowledge application. The curriculum framework articulated seven core competencies: communication and collaboration, critical thinking and problem solving, creativity and imagination, citizenship, digital literacy, learning to learn, and self-efficacy (Republic of Kenya, 2017).

Notwithstanding these ambitious educational objectives, CBC implementation at the Early Years Education (EYE) level has encountered numerous implementation challenges. Empirical investigations indicate implementation proceeded without systematic planning, with inadequate human and material resources generating discrepancies between curricular content and pedagogical implementation. Stakeholder engagement, particularly parental involvement, has been insufficient (Akala, 2020; Amunga et al., 2020; Cheptoo & Ramdas, 2020; Republic of Kenya, 2023; Sifuna & Obonyo, 2019). These implementation difficulties constitute a significant concern given this curriculum's identified potential for catalyzing national development. Implementation deficiencies threaten the attainment of anticipated competencies and undermine the educational objective of holistically developing learners as balanced citizens capable of contributing effectively to Kenya's developmental agenda. This recurring pattern of reforms followed by implementation challenges reveals persistent disparities between policy aspirations and educational realities in Kenya. The current CBC implementation represents the most recent initiative to align educational outcomes with national developmental requirements, yet encounters many identical obstacles that impeded previous reform efforts. Addressing these challenges necessitates comprehensive understanding of specific discrepancies between curriculum design and implementation practices, particularly at the foundational Early Years Education level where educational transformation commences.

Method

Research Design

This study adopted descriptive survey design method to examine the implementation of CBC at EYE level in Bungoma County, Kenya. Descriptive survey is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals (Kombo & Tromp, 2006). Cohen et al., (2007) observed that data gathered from descriptive survey serve three main purposes, namely: describing the nature of existing conditions, comparing them to certain standards of life and determining the relationship between specific events. The design was found appropriate because it assisted the researcher to access accurate data on retooling of teachers before roll out of CBC at EYE level, aspects of physical infrastructure, teaching and learning resources and stakeholders' perceptions. The design mainly employed qualitative data to capture specific voices from respondents and complimented with quantitative data.



Research Site

The study was carried out in eight public primary schools in Webuye West Sub-County, which were purposively sampled. The schools were purposively sampled based on the criteria that the school was operational when Kenya introduced CBC at EYE level.

Sampling

Simple random sampling method was used to select teachers willing to participate in the study. The method allows all the individuals in the defined population to have equal and independent chance of being selected; thus, data that emerges can be generalized (Kombo & Tromp, 2006). The selection of teachers was based on the fact that they were the ones teaching, hence understood the level of infrastructure, teaching and learning resources available and therefore challenges they faced. Purposive sampling was used to select Heads of Institutions and Parents willing to participate in the study. Opinions of Head of Institutions (HOI) were sought since they were the ones directly involved in the day-to-day running of schools. Parents were selected since they form major stakeholders in the implementation of CBC. The summary of target population, sample size and sampling technique are presented in Table 1.

Table1. Summary of target population, sample size and sampling technique

| Category | Target population | Sample size | % | Sampling technique |
|-----------------------------|-------------------|-------------|------|--------------------|
| Public Schools | 78 | 8 | 10.2 | Purposive |
| Teachers at EYE Level | 390 | 40 | 10.3 | Simple random |
| Heads of Institutions (HOI) | 78 | 8 | 10.2 | Purposive |
| Chair, Parent Association | 78 | 8 | 10.2 | Purposive |
| Total | 468 | 56 | | |

Pilot Study

A pilot study is the small version of the main study and is used to identify flaws in the operationalization of the independent variables, identify imprecise items, and establish the feasibility of data collection methods and procedures (Thabane, 2010). The cases picked for pre-testing should be 10% to 20% of the study sample (Simon & Goes, 2012). In this study, two schools in Webuye East Sub- County (not part of sample) were selected because they had similar characteristics as the sample sites. The interview schedule involved two Heads of Institutions (HOI), eight teachers and two Parent Association (PA) members.

Validity

In this study, both face validity and content validity of the interview schedule were improved through a panel of 10 discussants. The panel discussion was held before the pilot study and each item was scored by each discussant. The content validity of the interview schedule was computed for each item using the formula adopted from Amin (2005) which is: CV1= Number of times an item is rated as relevant divided by the total number of raters. An item on which at least 70% of discussants concurred was taken as valid while an item with a score of less than 70% of discussants was modified while others were removed since they were deemed redundant. A pilot was conducted to assess the validity of the tool; hence debriefing was done on respondents in order to ascertain the objectivity of the items, clarity, and time requirements

and complete coverage of all the themes. The feedback from the respondents was shared with the panel of the 10 discussants during the second panel discussion on the operational ability of the tools. Input from the panel and feedback from the piloting was used to do a final adjustment to enhance the validity of the interview schedule.

Reliability

In this study, test-retest technique for reliability was used to assess the interview schedules. In test-retest approach, the tool is administered twice to the same group of respondents. The scores from the 1st administration and 2nd administration are then correlated to establish the reliability of the tools. In this study, the data collection tools were to two Heads of Institutions, eight teachers, and two Parents Association members, administered in Webuye East Sub-County within a period of two weeks between the first observation (test) and the second observation (retest). The researcher used Pearson's product moment correlation (r) index illustrated below to analyze the tool:

$$r = [n(\Sigma xy) - \Sigma x \Sigma y] / \text{Square root of } \sqrt{[n(\Sigma x^2) - (\Sigma x)^2][n(\Sigma y^2) - (\Sigma y)^2]}$$

Where r = correlation coefficient, X= the first observation (test) and Y= the second observation (re-test). The analysis of Pearson product moment correlation (r) of the 1st and 2nd observation was calculated using SPSS version 20 computer programme. When computation was done, a correlation coefficient (r) equal to 0.8 was obtained which was higher than 0.75 as recommended by Orodho (2009), implying that the tool was reliable to collect most of the relevant data. The sections with qualitative data were scored manually between 1st observation and 2nd observation, and then compared.

Data Collection

Data was collected using three tools, namely: document analysis, open-ended interview and structured observations. These tools generated both qualitative and quantitative data. The researcher made a pre-visit to the teachers, HOIs, and Chair, Parents Association (PA) to book an appointment with each one of them on a specific date, time and venue for the interview. During such times, the researcher introduced himself and explained the study's expectations to each of the respondents who had voluntarily accepted to participate. A follow-up through phone call was done to confirm the date and time before the actual interview was done. The researcher assured them of confidentiality of the information given. The interviews were conducted with the help of research assistants and data was recorded both manually and electronically.

Data Analysis

This study utilized mixed method analysis to examine how CBC was implemented in Kenya at EYE level. Quantitative data from frequency of participation in retooling seminars, teacher-pupil ratios, perceptions about adequacy/inadequacy of physical infrastructure and frequency of attending to swimming classes was captured, coded and analyzed using the Statistical Package for Social Sciences (SPSS) version 20. This software was applied to allow production of consistency checks which helped to eliminate errors in the data entry. Comparative analysis

was done at various levels. First, the planned process of retooling teachers during implementation of CBC at EYE level and the actual practice during the implementation period. Secondly, the actual teacher -pupil ratios at EYE level compared UNESCO recommendations and the adequacy/inadequacy of physical infrastructure envisaged in the curriculum framework and the actual infrastructure in schools. The statistical data was transformed into frequencies, percentages, pie charts and bar graphs in order to address the research question. The qualitative data analysis focused on description and analysis of data from interview schedules. The tape-recorded data from interviews was transcribed and converted into a write-up using pre-determined categories and major themes as per the research objective. The processing and analysis of qualitative data was done as follows: coding and cataloging of various responses, identifying key responses for various themes, listing and putting together the main responses, identifying patterns emerging from key responses and reaching conclusions. Qualitative responses supplemented the findings in the quantitative data. The voices of the participants validated specific findings from the quantitative data which in turn produced a holistic understanding of the phenomenon. Simple descriptive analysis was utilized where data was grouped and presented in form of narrations and quotations.

Logistical and Ethical Considerations

The data collection commenced after necessary ethical approvals were obtained from Kenyatta University, division of Research, Innovation and Outreach (RIO) for the study. The researcher then obtained authorization from the County Commissioner and the County Director of Education, Bungoma, County to carry out research in accordance with the requirements for an undertaking of this magnitude. Also, permission and consent were sought from relevant authorities at the sampled Schools to be allowed to collect data. The researcher trained the research assistants on procedure of collecting data and ethical considerations before commencement of the process.

In this study, three ethical issues of informed consent, voluntary participation and confidentiality were observed. On informed consent and voluntary participation, the respondents were given a copy of the research permit and adequate information on the aim of the research. In addition, the respondents were free to withdraw their participation. To ensure anonymity, the data collection tool did not contain identification details of the respondents. The tools were serialized to enable follow up on particular respondents when required. To maintain confidentiality, the raw data remained available only to the researcher.

Simple random sampling method was used to select teachers willing to participate in the study. The method allows all the individuals in the defined population to have equal and independent chance of being selected; thus, data that emerges can be generalized (Kombo & Tromp, 2006). The selection of teachers was based on the fact that they were the ones teaching, hence understood the level of infrastructure, teaching and learning resources available and therefore challenges they faced. Purposive sampling was used to select Heads of Institutions and Parents willing to participate in the study. Opinions of Head of Institutions (HOI) were sought since they were the ones directly involved in the day-to-day running of schools. Parents were selected since they form major stakeholders in the implementation of CBC.

Results and Discussion

Based on the Early Childhood Education and Basic Education Acts on governance and funding of EYE level of education, Section 37(1) of the Early Childhood Education Act No.3 of 2021 allocates the role of governance at PP1-PP2 to County Governments (Republic of Kenya, 2021) while Section 55(1) (a) of the Basic Education Act, No.14 of 2013 assigns the role at Grade1-3 to National Government (Republic of Kenya, 2013). The Early Childhood and the Basic Education Acts are governed and funded at both County Governments and National Government, yet both levels fall under EYE. Opinions of Heads of Institutions were sought with regard to governance and funding at EYE level. In this connection, one HOI argued:

The PP1-PP2 section of EYE is under the governance of the County Government. The teacher at that level is an employee of the County Government. Grade 1-3 on the other hand is under the National Government hence coordinating the governance of both levels is quite challenging. (Male, HOI).

On the same aspect, another HOI supported the views that:

Grade 1-3 pupils are under Free Primary Education hence considered under capitation matrix by the National Government. However, learners in pre-school are not covered in Free Primary Education matrix since PP1-PP2 is a function of devolved government. (Female, HOI).

The sentiments above allude to systemic challenges of uncordinated implementation proces posing challenges to the HoIs and recommends that governance ought to be streamlined if the objectives of the curriculum reforms were to be attained. These findings pointed out to a disconnect between what the Government of Kenya (2013) has been articulating on free tuition to all children irrespective of the level. Furthermore, the findings sharply contrast with Government of Kenya, (2013) with regard to recruitment, and deploying of teachers to all levels of education. The study sought the teachers understanding of CBC. All 48(100%) stated that they understood what CBC entailed. On asking them to explain what they understood on CBC, majority of the respondents understood CBC as a system of education that had replaced 8-4-4 system. In this connection, one teacher explained:

In Kenya, we have been having the 8-4-4 system of education which produced many unemployed graduates. CBC was introduced to nurture talents and is child-centered with the aim of making Kenyans self-employed. (Female, Teacher).

This finding shows that all teachers understood that reforms were carried out on the system of education and they equally understood the rationale for reforming was to nurture skills for 21st century. However, majority did not understand the difference between the structure of education and the curriculum of education. They argued that the system of education changed from 8-4-4 to CBC, yet the structure and curriculum are different aspects of a system of education. While the structure changed from 8-4-4 to 2-6-3-3-3, the curriculum changed from content based to competency based. This finding shows that most teachers had not understood the various components of a system of education, hence what exactly changed. The findings echoed those of Nzima (2016) in Tanzania who established that in certain respects, tutors understood CBC in relatively different ways and thus gave it different meanings. The study further sought information on whether teachers learnt digital literacy during their initial pre-

service teacher training given that ICT was a delivery tool at all levels. All teachers 48(100%) indicated that they lacked digital literacy learning during their pre-service training. In this connection, one teacher pointed out:

The integration of ICT in the teacher training programme is a very recent phenomena and I'm not even sure if it's fully integrated now. Remember, I joined Kaimosi Teachers Training College in the late 80s. That is a long time ago to imagine of ICT integration. (Male, Teacher).

The findings above showed that teachers at EYE level never learnt digital literacy during their initial pre-service teacher training hence the reserch probed further on retooling. On the question of retooling, a four days seminar was normally organized once per term by the Curriculum Support Officers (CSO) in every Zone. In that regard, teachers were asked if they had participated and the findings are indicated below.

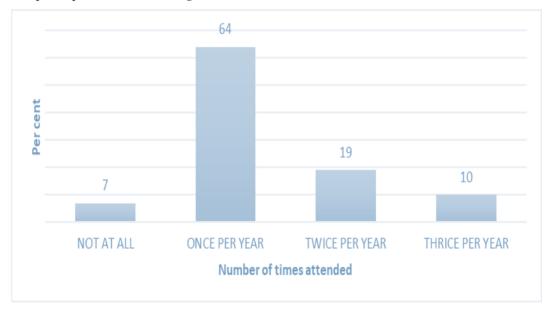


Figure 1. Teachers' responses on participation in CBC retooling seminars

The results indicated that majority of the respondents 64% attended retooling seminar only once per year. 19% attended twice, 10% attended thrice while 7% never had an opportunity to attend. This implies that the bulk of teachers 71% attended once or never attended at all casting doubt on whether they were sufficiently prepared to implement the curriculum. The findings were supported by Akinrinola et al., (2020) who observed that teacher's knowledge and integration of competency -based practices in Nigeria, South Africa and Rwanda lacked professional training and support affecting the quality of their teaching and assessment practices in classrooms. Kabombwe and Mulenga (2019) in Zambia established that 67% of the teachers did not understand the concept of the CBC and they were not using outcomes-based approaches to a large extent in the teaching and learning. Based on UNESCO recommendations, the teacher-pupil ratio should be 1: 20 at primary level. Results on the teacher pupil ratio at EYE in the sampled schools are shown below.

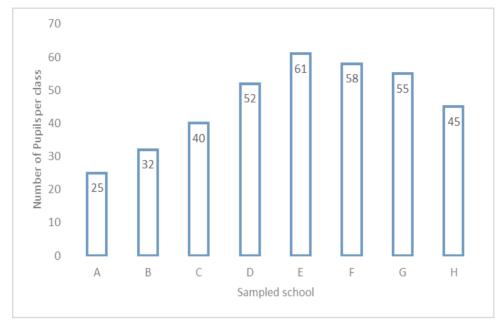


Figure 2. Teacher pupil ratio at EYE in the sampled schools

Results show that the highest ratio was 1: 61 while the least was 1:25 making the average teacher-pupil ratio to be 1: 46. Compared to the UNESCO recommendations, the classes were two times larger than the expected, casting doubt on the possibility of learner cantered pedagogy over teacher cantered pedagogy as envisioned in CBC. The study further sought to establish the teaching load. In this regard, one teacher expressed the following:

I'm assigned grade two to teach all the seven learning areas, meaning that I teach 31 lessons per week. This is overload because CBC teaching entails more of documentary records preparation than even the actual teaching which is not practically possible within the allocated time. I'm always forced to create more time either early in the morning or late in the evening to prepare. (Female, Teacher).

This implied that the teachers were responsible to teach all the five or seven learning areas translating to a load of 25 or 31 lessons per week. This meant that teachers were overloaded dimming further attainment of learner centered pedagogy. These findings were strengthened by Muzembe et al., (2021) on excessive workload for teachers and high teacher pupil ratio in Zimbabwe. Equally, Nsengimana (2021) in Rwanda established that implementation of CBC was found to be more time consuming, hence teachers could not cover the content at the end of the academic year. The assessment rubric for EYE is provided in Table 2 below.

Table 2. Assessment rubric

| Performance Level | Rating |
|------------------------------|--------|
| Exceeding Expectation (EE) | 4 |
| Meeting Expectation (ME) | 3 |
| Approaching Expectation (AE) | 2 |
| Below Expectation (BE) | 1 |

The rubric shows that there are four performance levels with the highly rated being Exceeding Expectation (EE), assigned a numerical value of four while the least rated is Below Expectation(BE) assigned the numerical value of one. Teacher's respondents were asked to give their views about the understanding of the rubric. In that regard, one teacher explained:

Since implementation of this assessment rubric, I have witnessed fluctuation in assessment of competencies hence in my opinion; it's difficult to monitor pupil's consistency. (Female, Teacher).

Another teacher had this to say:

This rubric is not clear. For instance, what is the distinction between Exceeding Expectation (EE) and Meeting Expectation? Remember, each activity has the expected learning outcome and if the pupil is meeting the expectation, then why deny the highest rating? Still, if meeting means you have not fully, then how is it different from approaching? (Male, Teacher).

What can be deduced from the sentiments above is that respondents understanding of CBC assessment rubric was vague since they could not distinguish various purformance levels. This therefore raises the question of how assessment was beeing carried out in the actual classrooms. In summary, although CBC is technically fit in policy discourse, its effective implementation in the classroom is taking too long than anticipated. Predictably, curriculum reforms will not succeed unless teachers in school setting change themselves. Any approach minus teachers' reforms will not bring actual change in schools. This finding was reinforced by Deng et al., (2013) in Singapore who established a pervasive folk culture of teaching and learning across the system and weak professional authority of teachers. Taiba et al., (2021) in Kuwait found out that CBC was vague to teachers due to lack of teachers preparation in its implementation and communities general tendency to obstruct changes due to the Kuwaiti conservative nature. The study sought the HOIs and Teachers perceptions about adequacy/inadequacy of physical infrastructure and the findings are presented in Figure 3 below.

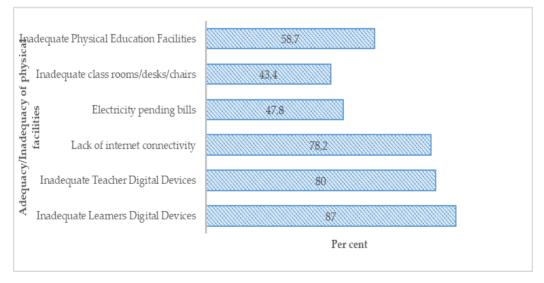


Figure 3. Heads of institutions and teachers perceptions about adequacy/inadequacy of physical infrastructure

Results shows that the most lacking resource were digital learners' devices at 87%, followed by inadequate teacher digital devices at 80%, internet connectivity at 78.2% and physical education facilities at 58%. Class rooms, desks and chairs at 43.4% were the only adequate resources albeit had not reached 100% CBC infrastructure expectations. In this connection, one HOI opined:

The large-scale rollout and uptake of digital content on the Kenya Education Cloud has been slow due to connectivity and infrastructure challenges emanating from funding constraints. Consequently, it has led to over-reliance on distributed text books for teaching and learning, leaving other resource avenues such as digital learning materials available at KICD underutilized. (Male, Head of Institution).

Another teacher lamented:

In this school we received only 31 tablets and two laptops from the government which we rarely use due to lack of internet connectivity and persistent electricity pending bills. In most cases, I am forced to use my mobile phone and bundles). (Female, Teacher).

In summary, the inadequacy of infrastructure averaged 65%, painting a picture of woefully inadequate digital devices and internet connectivity. The devices and physical facilities available were few, deteriorated or obsolete, leading to congestion. The research concludes that the attainment of digital literacy competency is considerably undermined due to inadequacy of physical facilities, thus throwing the intention of using ICT as a tool of delivery in jeopardy. The observations were supported by Semlugu (2018) in Tanzania who established that teachers had an idea about CBC but in actual situation, the teachers did not implement CBC techniques for classroom teaching and learning activities. This was attributed to large class size, lack of teaching learning resources and low motivation. Equally, Namuyemba et al., (2021) in Kenya established that the pace of transition was slow due to lack of adequate resources.

Psychomotor and Creative Activities and Movement and Creative Activities were included as learning areas at PP1-PP2 and Grade 1-3 respectively. The learning areas intended to enable learners develop both fine and gross motor skills which are necessary for the control and coordination of different parts of the body (Republic of Kenya, 2017). Teachers respondents were asked to mention some of the activities in the learning area and all 48(100%) mentioned swimming. On how often they took their learners for swimming lessons, the findings are presented below.

The findings shows that 70% never undertook swimming lessons in the entire year, 20% participated once per year, 8% indicated that they participated once per term while 2% participated weekly. In this connection, one HT had the following to say:

From our school, the nearest swimming pool is 12 kilometers away and yet we don't have a school bus. To take learners for swimming is therefore costly and I cannot ask parents to facilitate since the government says that education is free and compulsory. We therefore take learners to the sand out there and tell them to dive while imagining that they are swimming and from there, we assess them. (Male, HOI).

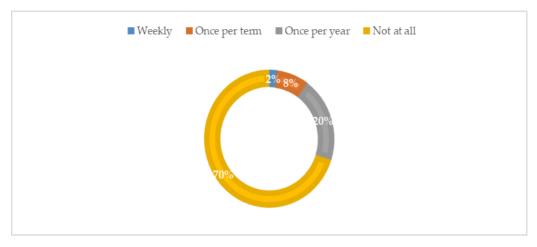


Figure 4. HOIs/Teachers responses on the frequency of attending to swimming class.

This finding showed that majority at 70% were not adhering to the laid down procedures for curriculum implementation. Arguably, either the government was implementing the curriculum haphazardly, especially if swimming was a prerequisite activity to developing fine and gross motor skills in an environment where swimming pools were not accessible to learners, or teachers themselves never understood how it was supposed to be implemented by failing to creatively introduce other relevant activities that could lead to the development of fine and gross motor skills. The research concludes that no reform is likely to succeed without a clear understanding of how it is supposed to be carried out. The findings by Puad and Ashton (2022) in Indonesia corroborated our findings in that principals and teachers lacked more in-depth understanding of the intentions behind the changes. With regard to text books, all respondents 56(100%) felt that there was confusion in the manner in which the books were being supplied. In this connection, one HOI averred that:

You are aware that the CBC rolled out was again reviewed in just a period of 5 years. Such eclectic reforms barely in five years' time left schools with surplus materials for subjects no longer being taught under restructured curriculum. Furthermore, there was lack of variety of the correct updated books. Finally, it's equally difficult to inform parents on time the correct updated textbooks because such information normally comes late. (Female, HOI).

A parent raised the following concern:

I was left in a state of confusion and anxiety when sourcing the updated text books before reopening of the term become extremely difficult. You know that schools ask parents to purchase the books during the December holiday. During the opening in January, some of them turn out not to be the correct updated books forcing parents to incur double expenditure, a situation which made me extremely worried. (Male, Parent).

The finding shows that there was confusion in the manner in which the books were being supplied given that the curriculum framework initially rolled out was again reviewed within a period of five years, making it overwhelming for publishers to develop adequate and updated text books for schools. The study concludes that implementing of a new curriculum short of resources and through the political doldrums of shifting times is principally an unmitigated disaster. The findings were supported by Mogga (2018) in South Sudan who established that that learner experience beyond conventionality remained largely rhetorical as long as required resources were held back by the dual force of curriculum novelty and state priority. With regards to parents' perception to CBC implementation, majority of the respondents decried the hurried implementation characterized by challenges of dire lack of critical infrastructure, lack of trained and deployed teachers and increasing and transferring the cost of education to parents. In this connection, one parent lamented:

CBC parent has been turned into a learner. Imagine my daughter coming with homework daily with instructions that I should assist, yet I am old school who equally don't understand CBC. It's quite embarrassing. One day, my daughter wondered if I ever attended school following the assignment I had assisted her the previous day. Nowadays, I have stopped assisting. (Male, Parent).

Another parent raised the following sentiments:

CBC has presented surmountable challenges to me. My job is transporting people and goods using a motorbike. My son hardly finds me home from school, yet I am expected to assist with homework. Additionally, some assignments require going to the cyber to print which is basically not affordable. (Male, Parent).

Another parent decried:

With the CBC, teachers have changed how to write report cards and I can't understand how my child is performing compared to other learners in class. This tendency has destroyed education since it does not encourage competition among learners. (Female, Parent).

The sentiments above reveal lack of stakeholders' sensitization about the rationale for the curriculum reforms and involvement in the process of implementation. As as result, parents remained skeptical, uncertain and doubtful. The research concludes that while the parents play a very important role in determining the success of a child's education, lack of stakeholders' involvement will eventually lead to a tacit rejection of the designed curriculum, more out of repulsion than upon reflection. This finding corresponded to Puad and Ashton, (2022) in Indonesia who established that the top-down nature of policy implementation with little consultation with key stakeholders led to disconnect between policy intentions and practice. Equally, Ngaruiya (2023) in Kenya established that the structural change from 8-4-4 to 2-6-3-3-3 was easily achieved but changing the spirit of the curriculum was taking too long hence recommended concerted effort by different players.

Implications

The findings of this study reveal significant implications for education policy and practice in Kenya. The gap between CBC design and implementation reality indicates that future curriculum reforms must adopt holistic planning approaches integrating implementation considerations from the beginning rather than treating them as afterthoughts. This requires reconceptualizing reform as a systems change process rather than merely a curriculum document revision. Policymakers must recognize that even theoretically sound curricula will fail without adequate implementation support systems, suggesting the need for comprehensive feasibility studies before nationwide rollout. Furthermore, the teacher readiness findings highlight urgent implications for teacher education, requiring fundamental

reconsideration of both pre-service and in-service training programs to develop educators capable of facilitating competency development rather than merely delivering content.

The infrastructure challenges identified have profound implications for resource allocation and implementation sequencing. The stark inadequacy of digital devices and connectivity directly undermines the attainment of digital literacy competency, suggesting Kenya must either adopt a phased implementation approach that aligns curriculum expectations with available resources or substantially increase education technology investments. This points to a broader need for coherent funding policies that prioritize infrastructure development necessary for CBC implementation, potentially requiring public-private partnerships to address resource gaps. The findings also suggest that school-level leadership requires greater capacity development and autonomy to adapt CBC implementation to local resource realities while maintaining fidelity to core competency development objectives.

The stakeholder engagement findings reveal deep implications for education governance and community relationships. The lack of parent understanding and subsequent skepticism indicates that educational reforms cannot succeed through top-down implementation alone but require broad stakeholder engagement and shared ownership from conception through implementation. Schools must develop stronger mechanisms for parent education and involvement, while education authorities must create more inclusive policy development processes that incorporate diverse stakeholder perspectives early in the reform process. This suggests a fundamental shift from viewing parents as passive recipients of educational services to essential partners in the educational process. Together, these implications point to the need for a more comprehensive transformation of Kenya's education ecosystem rather than isolated curriculum changes, addressing governance structures, resource allocation mechanisms, teacher development systems, assessment practices, and stakeholder engagement approaches simultaneously to create the enabling conditions for successful CBC implementation.

Conclusion

This study reveals that while Kenya's Competency Based Curriculum is conceptually sound in policy discourse, its classroom implementation faces significant challenges that undermine its effectiveness at the Early Years Education level. Three critical gaps emerge between design and practice: insufficient teacher training on pedagogy and assessment creating implementation uncertainty; woefully inadequate infrastructure, particularly digital devices and internet connectivity, jeopardizing digital literacy development; and inadequate stakeholder sensitization causing parental skepticism and resistance. The research demonstrates that despite Kenya's laudable intentions to transform education through CBC, the pattern of reforms followed by implementation challenges continues to create persistent gaps between policy aspirations and educational realities. Most teachers have insufficient understanding of CBC pedagogy and assessment practices, with only minimal retooling opportunities and vague comprehension of core competency development. Infrastructure deficiencies are particularly acute, with digital devices and internet connectivity virtually absent in many schools, directly undermining the attainment of digital literacy competency. Furthermore, key stakeholders, especially parents, were inadequately sensitized about curriculum reform rationales before implementation, resulting in widespread uncertainty and resistance. The study recommends comprehensive teacher support to transition from transmission-based to problem-based pedagogies, coherent funding policies prioritizing infrastructure development, and deliberate stakeholder engagement promoting shared ownership of the reform process to ensure Kenya's CBC fulfills its promise of developing holistically balanced citizens equipped with 21st century competencies.

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