

# Education for Sustainable Development: A Case Study of Mount Kenya University's Competency Based Curriculum (CBC) In Improving Higher Education In Kenya

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## ABSTRACT

This study examined the rationale behind Kenya's Competency-Based Curriculum (CBC) by exploring Grade 6 students' anxiety levels, assessing the preparedness of Head Teachers and teachers for implementation, evaluating university students' reception of CBC, and analyzing gender differences in attitudes toward the system. Using an ex post facto research design, the study targeted 10 institutions: 4 primary schools (2 public, 2 private), 4 junior secondary schools (2 public, 2 private), and 2 universities (1 public, 1 private). Data was collected through researcher-designed questionnaires and a Likert scale to measure anxiety and attitudes, with a pilot study conducted to enhance validity and reliability. Descriptive statistics and Chi-square tests were used for analysis. The findings indicated that Grade 6 students experienced high anxiety about CBC, Head Teachers and teachers were adequately prepared for its implementation, university students were less receptive to the new system, and there were no significant gender differences in attitudes toward CBC.

**Key words:** Competency, education, sustainable development

## INTRODUCTION AND MAIN TEXT

Kenya's education system transitioned from the 8-4-4 system to the Competency-Based Curriculum (CBC) in 2017 to address its limitations. The 8-4-4 system, in place for 32 years, was excessively exam-oriented, fostering unhealthy competition and corruption in school admissions (Amutabi, 2003a). National examinations determined student progression, encouraging ranking, bribery, and disparities in access to elite schools (Mohamed & Karuku, 2017). Private schools manipulated results by registering weaker students separately to maintain top rankings (Ambaa, 2015). Bribery for admission into national schools further widened educational inequality, while double registration skewed selection in favor of wealthier families (Sifuna, 1990). These flaws necessitated a shift to a curriculum emphasizing skill development over rote memorization and high-stakes exams.

CBC introduces a flexible, learner-centered approach that accommodates diverse learning abilities. Unlike the rigid 8-4-4 structure, CBC emphasizes continuous assessment, practical skills, and competency-based learning (Ninomiya et al., 2004). It integrates formal, informal, and non-formal learning, ensuring inclusivity for both fast and slow learners. Many developed countries, including Canada, Finland, and Australia, recognize prior learning, allowing seamless transitions between education levels (Dilmore, Moore & Bjork, 2011). CBC similarly promotes specialization in sciences, humanities, and social sciences based on student interests (Amutabi & Oketch, 2009). Despite initial resistance, CBC aims to reduce academic pressure and foster holistic learning. While global research on CBC has yielded mixed results, it is generally seen as superior to rigid, exam-based systems (Sifuna, 1990). Its alignment with global trends advocates competency-based learning to better prepare students for the modern workforce. Policymakers must address infrastructural challenges, train teachers, and refine assessment methods to maximize CBC's potential.

The CBC framework is built on key facets essential for 21st-century learning, including communication, collaboration, critical thinking, problem-solving, creativity, and global awareness. Digital literacy ensures

learners are proficient in technology, an essential modern skill. Additionally, self-directed learning and self-efficacy build confidence in students' abilities (Kouwenhoven, 2009). CBC integrates essential life skills such as peace education, health awareness, environmental sustainability, and mentorship programs, all contributing to holistic development (Hitchcock, 2013).

Structurally, CBC follows a 2-6-3-3-3 model, beginning with Early Year Education (pre-primary and lower primary, Grades 1-3). Learners focus on foundational skills and are assessed at Grade 3. Middle school consists of upper primary (Grades 4-6) and lower secondary (Grades 7-9), with national assessments at the end of Grades 6 and 9. Senior school (Grades 10-12) allows specialization in Arts and Sports Sciences, Social Sciences, and STEM (Science, Technology, Engineering, and Mathematics). After Grade 12, students transition to Technical and Vocational Education and Training (TVET) institutions, universities, or entrepreneurial ventures (RoK, 2017).

CBC offers multiple benefits, including holistic development by balancing academic, social, and practical skills. It provides flexible career choices, allowing learners to specialize based on their interests. Unlike the high-pressure exam system of 8-4-4, CBC emphasizes continuous assessment, reducing exam-related stress. The curriculum is designed to be relevant to real-world needs, equipping students with practical competencies for the job market and entrepreneurship (Mwarari, Githui & Mwenje, 2020; Koskei & Chepchumba, 2020). CBC also acknowledges diverse learning styles and paces, making education more inclusive (UNESCO, 2019).

Kenya's education reforms have evolved significantly, from the 1964 Kenyanization policy to the 8-4-4 system in 1985 and now the CBC framework (GoK, 1964; RoK, 2017). These reforms align with UNESCO's 2030 education agenda, advocating sustainable development through lifelong learning. CBC provides opportunities to correct past shortcomings, such as high dropout rates, rigid academic progression, and an overemphasis on exams (Muricho & Chang'ach, 2013). However, successful implementation requires investment in teacher preparedness, curriculum flexibility, and alignment with higher education. Adequate resource allocation and entrepreneurship training are also crucial to ensuring the long-term success of the curriculum (Mwarari, Githui & Mwenje, 2020).

### **Statement of the Problem.**

Kenya's Competency-Based Curriculum (CBC) introduces a learner-friendly approach that moves away from an exam-oriented system. The 2-6-3-3 structure aims to address the shortcomings of the 8-4-4 system, which limited academic progression based on exam performance. By providing multiple pathways for learners, CBC seeks to reduce repetition, dropout rates, and academic wastage, ultimately fostering sustainable development (RoK, 2017).

Educational reforms in Kenya have evolved over the decades, beginning with the integration of national goals and Africanization of the curriculum (GoK, 1964). Subsequent changes included modifications to national objectives and policies (GoK, 1976), the establishment of a second university (GoK, 1981), and the introduction of the 8-4-4 system in 1985. Other key milestones include the Koech Report (RoK, 1999), which led to the Totally Integrated Quality Education and Training (TIQET) framework (Muricho & Chang'ach, 2013). The current transition to CBC stems from the need to address the deficiencies of the previous system (Mwarari, Githui & Mwenje, 2020; RoK, 2017; Akala, 2020; Koskei & Chepchumba, 2020; Amutabi, 2019; Maina & Rosemary, 2019). These reforms align with UNESCO's (2019) goal of equipping all learners with knowledge and skills for sustainable development by 2030.

Successful CBC implementation in Kenyan universities requires careful consideration of resources, effective pedagogy, and entrepreneurship training to enhance competency-based learning.

### **Objectives of the Study**

The study had the following objectives:

- i) To establish the level of anxiety of the grade 6 students with the new CBC system.

- ii) To establish how prepared the Head Teachers and teachers are for the Implementation on CBC.
- iii) To assess the reception of the University study of the new CBC system of Education.
- iv) To find out if there are gender differences in the attitude of boys and girls toward CBC.

### Research Questions

- i) How anxious are the grade 6 students about CBC system of Education?
- ii) How prepared are the Head teachers and teachers for the implementation of CBC?
- iii) What is the reception of the University students of the new system of Education?
- iv) Are there gender differences in the attitude of boy and girls towards the new CBC system.

### Theoretical framework

The Competency-Based Curriculum (CBC) in Kenya is grounded in Behaviorism, Cognitive Learning, and Constructivism theories. Behaviorism (Skinner, Pavlov) emphasizes learning through reinforcement and conditioning. Cognitive Learning Theory (Piaget, Bruner) focuses on mental processes in knowledge acquisition, while Constructivism (Vygotsky, Dewey) highlights active learning through experience and social interaction. These theories support CBC's goal of fostering critical thinking, problem-solving, and practical skills development

#### Behaviorism Learning Theory

Behaviorism, developed by scholars such as B.F. Skinner and John Watson, posits that learning occurs through interactions with the environment, where behavior is shaped by external stimuli. It emphasizes the role of reinforcement—both positive (rewards) and negative (removal of undesirable outcomes)—in strengthening desired behaviors. Punishment can also be used to discourage unwanted actions. In education, behaviorist principles are applied through structured learning environments, repetition, drills, and rewards for achievement, making it an effective approach for skill acquisition and habit formation.

#### Cognitive Learning Theory

Cognitive Learning Theory, pioneered by Jean Piaget and Jerome Bruner, focuses on internal mental processes such as memory, problem-solving, and comprehension. It asserts that learning is an active process where students construct knowledge through reasoning and critical thinking. Unlike behaviorism, which centers on external conditioning, cognitivism highlights how learners process and store information. Effective teaching strategies under this theory include scaffolding, guided discovery, and the use of instructional materials that enhance comprehension and retention

#### Constructivism Learning Theory

Constructivism, advanced by theorists like Lev Vygotsky and John Dewey, suggests that learners actively construct knowledge based on their prior experiences. This theory emphasizes experiential learning, where students engage in hands-on activities, collaboration, and reflection to develop their understanding. Constructivist learning fosters creativity, problem-solving, and adaptability by encouraging learners to connect new information with existing knowledge, ultimately leading to deeper comprehension and lifelong learning.

### RESEARCH METHODOLOGY AND DESIGN

This study adopted an ex post facto research design, which is suitable for investigating phenomena where the independent variables cannot be manipulated because their effects have already occurred. This approach enabled an objective analysis of the relationship between the Competency-Based Curriculum (CBC) and students' anxiety levels and attitudes, relying on existing conditions rather than experimental intervention.

The study's population was strategically selected to provide a diverse and representative sample of learners and educators within Nairobi. A total of ten schools were included: four primary schools (two public and two private) and four junior secondary schools (two public and two private). Additionally, two universities—one public and

one private—were incorporated to capture perspectives on CBC implementation across different levels of education. This selection framework facilitated a comparative analysis of CBC's impact across various institutional settings.

To ensure rigorous data collection, a structured questionnaire was developed for both students and teachers. The instrument incorporated a Likert scale to quantify levels of anxiety and assess attitudes toward CBC. This methodological approach allowed for the measurement of nuanced perceptions and facilitated statistical analysis of trends within the study population. The combination of closed and open-ended questions further enhanced the instrument's capacity to capture both measurable data and qualitative insights.

A pilot study was conducted in schools that were not part of the main study to evaluate the reliability and validity of the research instruments. This preliminary testing phase identified potential weaknesses in question structure, response clarity, and instrument consistency. The feedback obtained informed necessary revisions, refining the questionnaire to enhance data accuracy and reliability. The pilot study thus played a critical role in ensuring that the final research tools were robust, minimizing biases and maximizing the credibility of the findings.

## DATA ANALYSIS AND RESULTS

Descriptive statistics were employed to analyze the collected data, providing a comprehensive summary of the respondents' perceptions and attitudes toward the Competency-Based Curriculum (CBC). The Chi-square test was utilized due to its suitability in handling nominal data and measuring associations between categorical variables. This statistical approach enabled the study to assess variations in attitudes across different groups while maintaining the integrity of nominal-level measurements.

The analysis revealed that Grade 6 students exhibited high levels of anxiety regarding the new system, indicating concerns about curriculum transitions and assessment methods. However, head teachers and teachers demonstrated adequate preparedness for CBC implementation, suggesting that training and institutional support played a role in their adaptability.

In contrast, university students did not readily embrace CBC, highlighting resistance or skepticism about its long-term impact on higher education pathways. This discrepancy between basic and higher education levels suggests a need for alignment between curriculum reforms and university-level expectations.

Additionally, findings indicated no significant gender differences in students' attitudes toward CBC, implying that both boys and girls perceived and responded to the curriculum changes similarly. This suggests that CBC's impact is largely influenced by structural and pedagogical factors rather than gender-based differences in learning experiences.

## DISCUSSION OF THE RESULTS

The study's findings reveal diverse perceptions of the Competency-Based Curriculum (CBC) among various stakeholders, consistent with existing literature on educational transitions. The elevated anxiety levels among Grade 6 students align with recent research indicating that transitions between educational stages can heighten stress and anxiety in young learners. For instance, a study by Byrne (2017) highlights that students often face increased anxiety during the shift from primary to secondary education, stemming from concerns about new environments and academic demands. This suggests that students undergoing curriculum changes, such as the introduction of CBC, may require additional support to manage transitional stress effectively.

The preparedness of head teachers and teachers for CBC implementation is a positive indicator, as educator readiness is crucial for the successful adoption of new curricula. Koskei and Chepchumba (2020) emphasize that professional development and targeted training significantly influence teachers' ability to adapt to curriculum changes. Ensuring that all educators, including those in under-resourced areas, have access to continuous professional development is essential for the effective delivery of CBC.

Resistance among university students toward CBC reflects broader challenges in aligning secondary education

reforms with higher education expectations. Akala (2020) notes that discrepancies between competency-based approaches in secondary schools and traditional university curricula can lead to apprehension among students transitioning to higher education. This underscores the need for policy coherence and curricular alignment between secondary and tertiary education institutions to facilitate smoother transitions for learners.

The study also found no significant gender differences in students' attitudes toward CBC. This finding aligns with research by Sifuna and Obonyo (2019), suggesting that when educational reforms are implemented equitably, they tend to impact learners uniformly, regardless of gender. The absence of gender disparities in attitudes toward CBC may indicate that both boys and girls have equal access to resources and learning opportunities, supporting the curriculum's goals of inclusivity and equity.

Overall, these findings highlight the importance of addressing transitional anxieties, ensuring educator preparedness, aligning curricula across educational levels, and maintaining gender inclusivity. Policymakers and educators must consider these factors to maximize the effectiveness of CBC and support students through educational transitions.

## SUMMARY, CONCLUSION AND RECOMMENDATIONS

### Summary

The Competency-Based Curriculum (CBC) in Kenya is designed to offer a more holistic, relevant, and personalized learning experience. By emphasizing practical skills, critical thinking, and individual interests, CBC enables learners to make informed career choices. Unlike the traditional exam-centered approach, this curriculum prioritizes continuous assessment, equipping students with real-world problem-solving abilities. Supporting children's educational journeys within the CBC framework fosters their growth and enhances their preparedness for future opportunities.

This perspective aligns with Kelchen (2015) and Krause, Portolese, and Schedler (2015), who emphasize the role of education in improving students' overall functioning and well-being. Many countries, including the Netherlands, Canada, Finland, the United States, Australia, Indonesia, South Africa, Norway, New Zealand, and Sweden, have implemented competency-based education in various forms (Amutabi, 2019; Krause, Portolese & Schedler, 2015; Strugies, 2015). In Kenya, the adoption of the 2-6-3-3 CBC cycle in 2017 aimed to address the limitations of the 8-4-4 system, which had been criticized for its rigid structure and exam-driven approach (Mwarari, Githui & Mwenje, 2020; RoK, 2017).

### Recommendations

Present findings offer a number of directions for CBC system of education, to policy maker and other stakeholders:

- i) Policy makers to ensure policies formulated are implemented
- ii) Study only done in Nairobi. Studies to be done in other parts of the country for comparison.
- iii) Only grade 6, Junior Secondary and first year university students took part in the study. Students from other levels need to take part for comparison.
- iv) Studies should be conducted among grade 1, 2 and 3 students to ascertain if there are age differences in the attitude between lower grade students and that of upper grade.

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### Ethical Approval

I confirm that the requisite ethical approval was obtained for this research.



## Declaration

I declare that there is no conflict of interest.

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