

Competence Based Curriculum Implementation in Rwanda: Strategies and Challenges

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ABSTRACT

The study investigates how Rwanda's competence-based curriculum (CBC) is being put into practice by synthesizing existing evidence on the strategies used and the challenges encountered by teachers and school leaders. Drawing on a systematic literature review design, the research collates empirical and theoretical studies, evaluation reports, and analytical policy documents published since 2010 that focus on CBC implementation in Rwanda and, where necessary, comparable sub-Saharan African contexts. The review follows explicit procedures for eligibility screening, multi-database searching, quality appraisal, and thematic synthesis to ensure a transparent and replicable process. Findings show that a range of context-responsive strategies are being used, including school-based in-service training, collaborative lesson study, communities of practice, strengthened instructional supervision, and the gradual adoption of learner-centered pedagogies and, in some settings, smart learning technologies. At the same time, the literature highlights pervasive challenges such as inadequate teacher preparation, systemic shortages of teaching and learning resources, curriculum overload, misaligned assessment practices, socio-cultural and linguistic barriers, and inconsistent instructional leadership. Together, these factors create an implementation gap between CBC policy intentions and classroom realities. The review concludes that while meaningful progress is evident, deeper and more coordinated support across teacher development, curriculum design, leadership, and resourcing is required to achieve the transformative aims of Rwanda's CBC.

Keywords: Competence-Based Curriculum, Curriculum Implementation, Strategies and Challenges, Systematic Literature Review, Rwanda Education System

INTRODUCTION

In many education systems, competence-based curricula are reshaping classrooms from places of rote memorization to environments where learners actively build practical, transferable skills, making effective implementation a critical global concern (Wellspring Foundation for Education, 2022; University of Rwanda College of Education, 2015.). Competence-based curriculum (CBC) implementation in Rwanda refers to the process of translating the national CBC framework into everyday teaching, learning, and assessment practices, shifting emphasis from the accumulation of theoretical knowledge to the demonstrated performance of skills, attitudes, and values in authentic contexts (Wellspring Foundation for Education, 2022; University of Rwanda College of Education, 2015.). This study focuses on the strategies adopted to support CBC implementation such as teacher training, curriculum support materials, and assessment reforms and the challenges that impede it, including resource limitations, pedagogical difficulties, and school- and community-level contextual constraints (MINEDUC, 2025; Rwanda Education Board, 2015; Ndayambaje, 2019).

Globally, many countries have reoriented their curricula towards competence-based approaches to respond to the demands of globalized economies, rapid technological change, and the need for citizens who can think critically, solve problems, and adapt to complex realities (University of Rwanda–College of Education, n.d.; Rwanda Education Board, 2015). International organizations and regional bodies have promoted learner-centered, skills-oriented curricula that link schooling to labor-market needs, positioning CBC implementation as a central agenda item in education reform and comparative education research (University of Rwanda College of Education, 2015.; Rwanda Education Board, 2015; Ndayambaje, 2019). Within this wider movement, Rwanda's curriculum reform is recognized as part of a broader sub-Saharan and East African shift towards

competency-based education intended to improve quality and relevance (University of Rwanda College of Education, Rwanda Education Board, 2015).

In the Rwandan context, the competence-based curriculum was introduced as a national reform to improve education quality, align learning outcomes with labor-market demands, and support long-term development goals such as Vision 2020 and subsequent national strategies (University of Rwanda College of Education, Rwanda Education Board, 2015). The CBC emphasizes learner-centered pedagogy, integration of key competences such as literacy, numeracy, communication, ICT, science, and entrepreneurship and the use of authentic assessments that allow learners to demonstrate what they can actually do (University of Rwanda College of Education, Rwanda Education Board, 2015). To operationalize these goals, national strategies have focused on in-service teacher training, revision of teacher education curricula, development of new textbooks and teacher guides, and expansion of schools and infrastructure to support CBC implementation (MINEDUC, 2025; Rwanda Education Board, 2015; Ndayambaje, 2019).

Despite these efforts, empirical studies and policy analyses indicate that effective classroom-level implementation of CBC in Rwanda remains challenging (Ndayambaje, 2019; Ndihokubwayo et al., 2018; Uwanyirigira, 2023). Reported obstacles include limited and uneven access to teaching and learning resources, inadequate teacher preparation for learner-centered pedagogy, large class sizes, and difficulties in shifting from traditional examination-driven assessments to competency-based evaluation practices (MINEDUC, 2025; Ndayambaje, 2019; Ndihokubwayo et al., 2018). As a result, classroom practices in many schools tend to remain teacher-centered and content-focused, raising concerns about the extent to which the intended goals of the competence-based curriculum are being realized in practice (Ndihokubwayo et al., 2018; Uwanyirigira, 2023).

A review of existing literature shows that many Rwandan and regional studies have centered on describing the CBC framework, documenting policy intentions, or assessing outcomes in isolated subjects or localities, while relatively few have systematically analyzed both the concrete strategies used to implement CBC and the day-to-day challenges encountered across diverse school contexts (Ndayambaje, 2019; Ndihokubwayo et al., 2018). Where empirical work exists, it often focuses on teacher perceptions or learner performance in specific subjects, leaving limited evidence on how implementation strategies interact with contextual factors such as school leadership, resource distribution, and community engagement (Ndayambaje, 2019; Ndihokubwayo et al., 2018; Uwanyirigira, 2023). This gap justifies a study that explicitly investigates both strategies and challenges of CBC implementation at school level, drawing on the perspectives of teachers, school leaders, and learners in different settings (Ndayambaje, 2019; Ndihokubwayo et al., 2018).

A study on “competence-based curriculum implementation in Rwanda: strategies and challenges” is significant because it can provide context-specific evidence to inform national policy, teacher education, and school-based improvement plans (Ndayambaje, 2019). By identifying effective strategies, persistent obstacles, and the lived experiences of key stakeholders, the research can support better design of teacher professional development, more equitable provision of learning resources, and more coherent assessment and support mechanisms (MINEDUC, 2025; Rwanda Education Board, 2015; Ndayambaje, 2019). The findings may also contribute to continental and global debates on competence-based education by offering lessons from Rwanda that can be compared to reforms in other countries undergoing similar curricular transformations (Ndayambaje, 2019; Uwanyirigira, 2023).

In conclusion, Rwanda’s competence-based curriculum reform represents a profound shift in educational philosophy and classroom practice, with the potential to strengthen learners’ skills, employability, and capacity to contribute to national development when effectively implemented (Rwanda Education Board, 2015). The extent to which this potential is realized depends on the coherence and adequacy of implementation strategies and on how practical, pedagogical, and contextual challenges are addressed in real school environments (MINEDUC, 2025; Ndayambaje, 2019; Ndihokubwayo et al., 2018). Investigating the strategies and challenges of competence-based curriculum implementation in Rwanda therefore offers a valuable opportunity to generate evidence that can strengthen the national education system and enrich broader discussions on competency-based reforms in similar contexts (Ndayambaje, 2019; Uwanyirigira, 2023).

Research Questions

1. What strategies are used by teachers and school leaders to implement the competence-based curriculum in Rwandan schools?
2. What challenges do teachers and school leaders face in implementing the competence-based curriculum in Rwandan schools?

RESEARCH METHODOLOGY

Research design

The study adopted a systematic literature review design, which is a rigorous, protocol-driven approach for identifying, appraising, and synthesizing all relevant research on a clearly defined topic in a transparent and replicable way. This design is suitable for competence-based curriculum (CBC) implementation because it does not generate new primary data, but instead collates and integrates findings from existing empirical and theoretical work spread across journal articles, theses, evaluation reports, and policy documents, allowing patterns, consistencies, and gaps in the evidence to be identified. By following explicit steps formulating focused research questions, specifying inclusion and exclusion criteria, conducting systematic searches, critically appraising study quality, and using structured narrative or thematic synthesis the review design provides an organized way to handle the growing but fragmented body of CBC literature in Rwanda and comparable sub-Saharan African settings, thereby producing a comprehensive and trustworthy overview that can inform policy, practice, and future research.

Eligibility criteria

The eligibility criteria specified which studies were included in, and excluded from, the review to ensure focus and transparency. The context comprised studies that examined competence-based curriculum or competence-based learning in Rwanda; if limited evidence was available, closely related work from sub-Saharan Africa that directly discusses CBC implementation strategies or challenges in basic or secondary education were also considered. The phenomena of interest was strategies for implementing CBC (such as teacher training, pedagogy, assessment, resources, and leadership) and (b) challenges or barriers to CBC implementation (such as teacher capacity, resources, class size, and policy-practice gaps). The review included empirical qualitative, quantitative, and mixed-methods studies, evaluation reports, and high-quality policy documents that present data or systematic analysis, published from 2010 onwards in English or French to capture the period of CBC introduction and early implementation in Rwanda. Opinion pieces without data, purely theoretical work that does not address implementation, and studies on competence-based approaches only in higher education (unless explicitly linked to school CBC implementation) were excluded.

Search strategy

The search strategy used a multi-database approach with predefined keywords and Boolean operators to identify all relevant studies systematically. Searches were conducted in databases such as ERIC, Scopus, Web of Science, Google Scholar, African Journals Online, and institutional repositories, including those of the University of Rwanda and the Rwanda Education Board. Core search terms were in combined phrases like “competence-based curriculum” OR “competency-based curriculum” OR “competence-based learning” AND “Rwanda” AND (“implementation” OR “strategies” OR “challenges” OR “barriers”), with adjustments for each database’s requirements. Supplementary searching included snowballing from reference lists of key articles and targeted searches of relevant organizations such as the Ministry of Education, the Rwanda Education Board, and development partners working in Rwandan education. All search strings, databases, and search dates were documented to support replicability of the review.

Study selection procedure

The study selection procedure followed a transparent, staged process to minimize bias. First, all records retrieved from the searches were merged into a single database, and duplicate entries were removed during the deduplication stage. Second, titles and abstracts were screened against the eligibility criteria to exclude clearly irrelevant studies. Third, full texts of potentially relevant articles were retrieved and assessed in detail to confirm inclusion or exclusion, and reasons for exclusion at the full-text stage were recorded. Ideally, two reviewers independently screened studies and resolve disagreements through discussion to reduce selection bias.

Data extraction

Data extraction was carried out using a standardized form (for example, in a spreadsheet) to ensure systematic and consistent collection of information from each included study. For every study, bibliographic details (author, year, country, and publication type), the study aims and research questions, and information on context and participants (such as education level, subject area, region, and stakeholder groups) were recorded. Methodological details, including design, data collection tools, and sample size, were also captured. The extraction paid particular attention to findings on strategies used to implement CBC (for example, types of teacher professional development, classroom practices, assessment reforms, resource provision, and leadership practices) and findings on challenges or barriers (for example, teacher knowledge and beliefs, workload, large classes, limited materials, and policy misalignment). Authors' conclusions and recommendations relevant to CBC implementation were summarized to support interpretation and implications.

Quality appraisal

Quality appraisal assessed the methodological rigor of each empirical study to inform how much weight its findings did carry in the synthesis. A suitable critical appraisal checklist, such as an adaptation of CASP or a similar framework, was applied to consider aspects including clarity of aims, appropriateness of study design, adequacy of sampling, quality of data collection and analysis, ethical considerations, and acknowledgment of limitations. Based on these criteria, studies were classified as high, medium, or low quality, and this classification were used to interpret evidence cautiously rather than to exclude studies solely on quality grounds. High- and medium-quality studies were emphasized when drawing conclusions, while findings from lower-quality studies were noted but treated with greater caution.

Data synthesis

Data synthesis used a thematic approach structured around the two research questions. Initially, extracted findings were read repeatedly and subjected to coding, with codes assigned to text segments that describe CBC implementation strategies or challenges. These codes were then be grouped into broader themes such as "teacher professional development strategies," "learner-centered instructional practices," "assessment reforms," "resource constraints," "teacher capacity gaps," and "policy and leadership issues." For Research Question 1 ("What strategies are used...?"), themes describing planned and enacted strategies at classroom, school, and system levels were synthesized, while for Research Question 2 ("What challenges...?"), themes showing barriers at teacher, school, community, and policy levels were organized. Where data permit, findings were also compared across different study types, education levels, and regions within Rwanda to highlight areas of convergence and divergence in the literature.

Ensuring rigor and transparency

Rigor and transparency were ensured by systematically documenting all stages of the review process and reflecting critically on potential sources of bias. A PRISMA-style flow diagram was be used to display the number of records identified, screened, included, and excluded, along with reasons for exclusion at each stage of the selection process. An audit trail was maintained, including records of search strategies, screening decisions, coding frameworks, and quality appraisal outcomes, so that the process was traceable and replicable. The review was also explicitly discussed possible biases, such as language restrictions, limited coverage of grey literature,

and reliance on published studies, and explained how these factors may have influenced the findings and conclusions.

Ethical considerations

Because the review used published and publicly available documents, formal ethical approval was usually not required; however, the study still respect intellectual property and accurately represent authors' findings without plagiarism or misquotation. Proper citation and paraphrasing were used consistently in line with APA 7th edition to acknowledge original authors' contributions.

SUMMARY OF RESEARCH METHODOLOGY (SYSTEMATIC LITERATURE REVIEW)

Component	Description
Research design	Systematic literature review synthesizing empirical and theoretical evidence on competence-based curriculum (CBC) implementation in Rwanda (and closely related sub-Saharan contexts where necessary).
Review focus	To identify (1) strategies used to implement CBC, and (2) challenges faced in implementing CBC in Rwandan schools.
Research questions	1. What strategies are used by teachers and school leaders to implement the CBC in Rwandan schools? 2. What challenges do teachers and school leaders face in implementing the CBC in Rwandan schools?
Eligibility criteria	Inclusion: Studies on CBC/competence-based learning in Rwanda (or comparable African contexts) that report strategies and/or challenges; empirical qualitative, quantitative, mixed-methods studies, evaluation reports, and analytical policy documents; published from about 2010 onward; in English/French. Exclusion: Opinion pieces without data; purely theoretical papers not addressing implementation; studies only on higher education unless linked to school CBC.
Information sources	Educational and multidisciplinary databases (e.g., ERIC, Scopus, Web of Science), Google Scholar, African Journals Online, national and institutional repositories (e.g., Ministry of Education, Rwanda Education Board, University of Rwanda), and reference lists of included studies.
Search strategy	Use predefined keywords and Boolean operators, for example: “competence-based curriculum” OR “competency-based curriculum” OR “competence-based learning” AND “Rwanda” AND (“implementation” OR “strategies” OR “challenges” OR “barriers”); adapt terms for each database and document full search strings and dates.
Study selection process	1) Remove duplicates; 2) Screen titles and abstracts using eligibility criteria; 3) Retrieve and screen full texts; 4) Record reasons for exclusion at full-text stage; 5) Summarize selection in a PRISMA-style flow diagram.
Data extraction	Use a structured form to record: bibliographic details; aims; context and participants; design and methods; key findings on implementation strategies; key findings on challenges/barriers; authors' conclusions and recommendations.
Quality appraisal	Critically appraise included empirical studies using an appropriate checklist (e.g., adapted CASP): clarity of aims, suitability of design, sampling, data collection, analysis, ethics, and

	limitations; categorize overall quality (e.g., high/medium/low) and use this to weight evidence in synthesis.
Data synthesis	Conduct narrative/thematic synthesis: code extracted findings; group codes into themes (e.g., teacher professional development, classroom practice, assessment reforms, resource constraints, teacher capacity, leadership/policy issues); structure results around the two research questions and compare patterns across study types and contexts.
Rigor and transparency	Maintain an audit trail of search decisions, screening logs, coding framework, and appraisal outcomes; use clear tables and a flow diagram; explicitly discuss potential biases (e.g., language, publication bias) and limitations of the review.
Ethics	No human participants are directly involved; rely on publicly available sources; ensure ethical scholarship through accurate citation, careful paraphrasing, and avoidance of plagiarism.

ANALYSIS OF FINDINGS AND DISCUSSION

This analysis synthesizes findings from multiple studies on the implementation of Rwanda's Competence-Based Curriculum (CBC). The literature reveals a concerted national effort to shift from a knowledge-based to a competence-based educational paradigm, but this transition is characterized by a complex interplay of promising strategies and persistent, systemic challenges.

Strategies Used by Teachers and School Leaders to Implement the Competence-Based Curriculum

The literature identifies several key strategies employed at the school and local government levels to facilitate CBC implementation. These strategies can be grouped into four main themes:

Collaborative Professional Development and Peer Learning

A key strategy that has strengthened Competence-Based Curriculum (CBC) implementation in Rwanda is the shift toward collaborative, school-based models of professional development. School-Based In-Service Training (INSET) has emerged as one of the most effective mechanisms, as school leaders actively schedule and facilitate regular INSET sessions that allow teachers to discuss and resolve CBC-related instructional challenges within their immediate teaching environment (Ndihogubwayo et al., 2023; Nshimiyimana & Andala, 2024). These sessions contextualize professional learning, enabling teachers to address practical classroom difficulties while adapting CBC principles to local needs. Another powerful approach has been the use of lesson study cycles. Evidence from the SIIQS project shows that repeated cycles of collaborative planning, micro-teaching, lesson revision, and video-based reflection significantly enhanced teachers' pedagogical skills, resulting in improved lesson plans and more effective classroom discourse that encouraged higher-order thinking through open-ended questioning (Mutsinzi et al., 2017). In addition, the establishment of school-based communities of practice has proven central in sustaining professional dialogue and peer learning. Researchers such as Nsengimana et al. (2023) recommend these communities as essential for boosting teacher competence and confidence, especially when supported by Sector Education Officers (SEOs) and school leaders who help sustain continuous, informal peer coaching and knowledge-sharing structures (Ndihogubwayo et al., 2021). Together, these collaborative strategies enable ongoing professional learning that is practical, context-responsive, and aligned with CBC principles.

Instructional Leadership and Monitoring

Instructional leadership has played a critical role in supporting teachers and ensuring effective CBC implementation, particularly through strengthened supervision and monitoring practices. Studies reveal that active instructional supervision—where school leaders regularly observe lessons, hold pre-observation discussions, and provide constructive feedback—significantly enhances teacher competency in lesson planning and delivery (Nshimiyimana & Andala, 2024). However, research by Nsengumuremyi and Imaniriho (2025)

highlights persistent weaknesses in this area, noting that inconsistent supervision practices in some schools limit teachers' ability to fully implement CBC pedagogy. At a broader level, multi-tiered monitoring systems have also contributed to the success of CBC rollout. Sector Education Officers (SEOs) collaborate closely with district education officials and school leaders to provide structured oversight, coaching, and classroom follow-up, thereby creating an interconnected support network that reinforces curriculum standards across schools (Ndihokubwayo et al., 2023). Despite these strengths, scholars emphasize the need for increased funding and logistical support, as SEOs often operate with limited resources. Nonetheless, effective instructional leadership remains a cornerstone of CBC implementation, ensuring that teachers receive ongoing guidance and accountability aligned with curriculum goals.

Fostering Learner-Centered Pedagogies

The CBC emphasizes active learning, and teachers across Rwanda have increasingly adopted learner-centered pedagogies to align instruction with competence-based principles. A prominent strategy has been the deliberate use of collaborative learning, such as group work and peer discussions, which helps students construct knowledge collectively and enhances conceptual understanding. Research by Nshimiyimana and Andala (2024) demonstrates that collaborative learning significantly improved students' comprehension of mathematics concepts, particularly through structured group tasks and dialogic engagement. Teachers have also made concerted efforts to shift from traditional teacher-centered instruction toward methods that enhance student participation and ownership of learning. Observational findings by Ndihokubwayo et al. (2020) confirm that learner participation has improved as teachers employ more interactive techniques, including question-and-answer sessions, problem-solving activities, and practical demonstrations. Additionally, the use of CBC-aligned teaching materials has facilitated this pedagogical shift. New textbooks designed to promote inquiry, collaboration, and skill acquisition provide structured activities that guide both teachers and students toward interactive learning experiences (Ndihokubwayo & Habiyaremye, 2018). Collectively, these strategies reflect a growing emphasis on environments where learners are active participants and knowledge constructors, rather than passive recipients.

Leveraging Smart Learning Technologies

Although the availability of digital resources varies across educational settings, the use of smart learning technologies is emerging as an influential strategy, especially within better-resourced institutions. Smart learning tools—including digital learning platforms, interactive content, and online assessment systems—have been shown to enhance student engagement and support competence-based teaching approaches. Tuyizere (2024) reports that when students use these technologies, their academic competence, motivation, and participation significantly improve, suggesting that digital tools offer opportunities for richer, more personalized learning experiences aligned with CBC objectives. These technologies also support learner-centered pedagogy by enabling self-paced learning, interactive simulations, multimedia learning materials, and immediate feedback mechanisms. Although widespread integration remains constrained by infrastructural and financial limitations in many schools, the evidence suggests that smart learning technologies represent a high-potential strategy for improving teaching effectiveness and strengthening CBC implementation. As Rwanda continues to invest in digital transformation, such tools may play an increasingly central role in making teaching and learning more interactive, competency-driven, and future-oriented.

Challenges do Teachers and School Leaders Face in Implementing the Competence-Based Curriculum in Rwanda

The challenges are more numerous and deeply rooted, often undermining the effectiveness of the strategies mentioned above. They can be categorized into five critical themes:

Inadequate Teacher Preparedness and Professional Capacity

The most consistently reported challenge in the implementation of the Competence-Based Curriculum (CBC) in Rwanda is the limited preparedness and professional capacity of teachers to deliver competence-based instruction. Numerous studies highlight that teachers have received insufficient and often superficial training on

CBC principles and methods. For instance, Ndihokubwayo et al. (2019), Nsengimana (2021), and Rugamba (2016) found that many teachers either had not participated in CBC training at all or received only minimal orientation that did not equip them with a thorough understanding of competence-based pedagogy or cross-cutting issues. Further evidence from Nsengimana et al. (2023) shows that even teachers who completed training struggle to grasp the deeper pedagogical shifts required by the CBC. As a result, teachers frequently revert to familiar, teacher-centered instructional approaches, largely because they lack confidence and practical mastery of learner-centered or inquiry-based methods (Bizimana, 2025; Dusabimana & Mugabo, 2022). Additionally, the language of instruction presents a compounding challenge. The transition to English-medium instruction from Grade 4 has created barriers for teachers who themselves have limited English proficiency, reducing their ability to effectively engage learners in competence-based activities that require communication, explanation, and guided inquiry (Dushimumuremyi & Sibomana, 2019; Nsengimana, 2021). Collectively, these factors indicate that teacher readiness remains a foundational obstacle to successful CBC implementation.

Systemic Resource Constraints

Another significant barrier to effective CBC implementation lies in the systemic shortage of physical, instructional, and financial resources across schools. Studies consistently show that many schools lack adequate CBC-aligned teaching and learning materials, including textbooks, teaching aids, and laboratory equipment necessary for the practical and activity-based learning envisioned under the CBC (Nsengimana, 2021; Nteziyaremye et al., 2024). These shortages severely restrict teachers' capacity to implement hands-on, learner-centered activities, especially in science subjects. Furthermore, inadequate infrastructure compounds the challenge. A lack of functional science laboratories and insufficient chemical reagents hampers practical experimentation and the development of scientific competencies among students (Nsengimana, 2021). Funding gaps further exacerbate the situation. Ndihokubwayo et al. (2023) and Nsengimana (2021) report that CBC implementation has been undermined by the absence of a dedicated government budget for sustained teacher training, monitoring, and provision of instructional materials. Without financial commitment to resource provision and professional development, schools struggle to meet the demands of an ambitious curriculum that relies on well-equipped learning environments. These systemic constraints reveal a significant disconnect between curriculum expectations and the realities of classroom conditions.

Curriculum Design and Assessment Issues

The design and structure of the CBC itself present a series of implementation challenges that impede effective teaching and learning. A recurring concern among teachers is curriculum overload, with multiple studies indicating that the volume of content is too extensive to be effectively covered within the allocated instructional time (Ndihokubwayo et al., 2019; Rugamba, 2016). This overload forces teachers to rush through lessons, thereby compromising the depth and quality of learning, which are central to competence-based approaches. Additionally, some CBC content—especially in textbooks—has been criticized for being too advanced for learners at certain grade levels, suggesting that better scaffolding and contextualization are needed to support all students' learning (Ndihokubwayo & Habiyaremye, 2018). Bizimana (2025) further identifies a “substantial mismatch” between the theoretical intent of competence-based education and the practical realities of classroom implementation, highlighting a persistent design-reality gap that weakens the curriculum's effectiveness. Challenges also extend to assessment practices. As Ngendahayo and Askell-Williams (2016) argue, assessments must shift from memorization-based tasks to authentic, application-focused evaluations that align with CBC goals. However, limited attention to assessment reform risks undermining the curriculum's broader objectives. These issues illustrate that curriculum design and assessment alignment remain critical areas requiring refinement.

Socio-Cultural and Attitudinal Barriers

Socio-cultural norms and entrenched teacher attitudes present another layer of complexity in CBC implementation. Several studies reveal that despite policy directives promoting learner-centered approaches, many teachers continue to prefer traditional, teacher-led instructional methods (Ndihokubwayo et al., 2021, 2023). This resistance is often linked to inadequate training, limited confidence, and the comfort associated with long-standing pedagogical habits. Cultural influences also shape teaching practices. Bizimana (2025) notes that

Rwandan instructional culture is influenced by a combination of Western educational ideals and African communal values, creating tensions in the practical application of CBC methodologies. For example, while CBC emphasizes individual problem-solving and creativity, classroom practices may be influenced by traditions of collective learning and respect for authority, making it challenging to fully adopt student-driven instruction. Another socio-cultural barrier relates to language use. Outside of school, the use of English is limited, reducing learners' opportunities to practice and reinforce communicative competence—an essential component of CBC goals (Dushimumuremyi & Sibomana, 2019). These linguistic and cultural factors shape classroom dynamics and influence the extent to which teachers and students are able or willing to embrace learner-centered, interactive pedagogy.

Weak Instructional Leadership and Support Systems

Although strong instructional leadership is essential for CBC implementation, inconsistencies and weaknesses in leadership practices pose significant challenges. Nsengumuremyi and Imaniraho (2025) show that when head teachers fail to conduct consistent instructional supervision—including pre-lesson conferences, classroom observations, and feedback sessions—teachers lack the professional support necessary to refine their lesson planning and pedagogical skills. Weak supervision limits opportunities for coaching, reduces accountability, and allows ineffective teaching practices to persist. Beyond supervision, teacher involvement in curriculum design has been minimal, contributing to implementation difficulties. Studies by Ndihokubwayo et al. (2019) and Rugamba (2016) reveal that teachers felt excluded from the curriculum development process, perceiving the CBC as a top-down policy imposed without adequate consultation with the practitioners responsible for implementing it. This lack of ownership reduces teacher motivation, inhibits innovation, and leads to misunderstandings about curriculum expectations. Combined with broader systemic weaknesses in support structures, these leadership challenges hinder the consistent and effective application of CBC principles across schools.

DISCUSSION

The findings of this synthesis reveal that the implementation of Rwanda's Competence-Based Curriculum (CBC) is a complex, multi-layered process characterized by promising, context-driven strategies that are simultaneously constrained by deep-rooted systemic and attitudinal challenges. This discussion interprets these findings, arguing that the interplay between the bottom-up strategies employed by educators and the top-down systemic barriers creates a critical "implementation gap." The success of the CBC ultimately hinges on the Rwandan education system's ability to better align national policy ambitions with the realities of classroom capacity and culture.

Interpreting the Strategies: Grassroots Adaptation in the Face of Systemic Constraints

The strategies identified such as school-based INSET, collaborative lesson study cycles, and communities of practice illustrate more than isolated examples of good practice; they reflect a broader pattern of grassroots adaptation in the midst of systemic limitations. The reliance on school-level and peer-supported professional development (Ndihokubwayo et al., 2023; Mutsinzi et al., 2017) indicates that educators are taking initiative to fill gaps left by insufficient national training structures. These locally driven mechanisms demonstrate significant agency, cooperation, and resilience among teachers and school leaders, who have recognized the necessity of building their own professional learning networks to make sense of the Competence-Based Curriculum. At the same time, this phenomenon points to a national-level weakness in reform planning: the absence of sustained, centrally funded, high-quality capacity-building programs. As Sector Education Officers (SEOs) struggle with insufficient resources to support schools effectively (Ndihokubwayo et al., 2023), much of the burden of continuous professional development shifts to teachers themselves, resulting in practices that are innovative yet uneven across different regions.

The partial uptake of learner-centered pedagogies further illustrates this mixed pattern of progress and limitation. Evidence from studies on classroom practice shows that teachers are increasingly incorporating collaborative learning, interactive activities, and new CBC-aligned textbooks into their instruction (Ndihokubwayo & Habiyaremye, 2018; Nshimiyimana & Andala, 2024). The documented improvement in learner participation (Ndihokubwayo et al., 2020) suggests that the philosophical intent of the CBC to cultivate active, independent,

and engaged learners is gaining traction. This reflects an important milestone, demonstrating that teachers are not rejecting the curriculum's direction, but are instead experimenting with and adopting some of its pedagogical principles. From a policy perspective, these behavioral shifts indicate that elements of the reform are indeed reaching classrooms and shaping teacher practice in meaningful ways.

However, the deeper challenge lies in the incomplete internalization of these methods. Studies show that many teachers continue to rely on traditional teacher-centered practices despite outwardly incorporating learner-centered techniques (Bizimana, 2025; Dusabimana & Mugabo, 2022). This suggests that while teachers may be using group work, problem-solving activities, and improved CBC materials, these practices may be applied in a superficial or procedural manner rather than as part of a fundamental shift in teaching philosophy. In other words, teachers may be implementing the forms of learner-centered pedagogy without embracing its core values, such as positioning students as co-constructors of knowledge and viewing the teacher primarily as a facilitator of inquiry. This “technical compliance” rather than “transformational change” reflects the broader systemic issues particularly the weakness of sustained professional development and instructional coaching that inhibit deeper pedagogical transformation. Without stronger, ongoing national support, these grassroots strategies risk plateauing, as teachers may not fully develop the confidence, conceptual understanding, and reflective practice necessary for genuine CBC implementation.

Confronting the Core Challenges: The “Implementation Ecosystem”

The challenges surrounding CBC implementation inadequate teacher preparedness, constrained resources, curriculum overload, socio-cultural barriers, and inconsistent leadership form a deeply interconnected “implementation ecosystem” rather than discrete issues. Each challenge reinforces the others, creating a cyclical and self-perpetuating set of constraints that make meaningful reform difficult to achieve. For example, resource shortages amplify the effects of poor training, while curriculum overload magnifies teacher resistance and weakens instructional supervision. Recognizing this interdependence underscores that CBC implementation cannot be improved through piecemeal interventions; it requires a holistic, systems-level approach that simultaneously strengthens teacher capacity, curriculum design, leadership, and material support. This perspective calls for a shift from treating implementation problems as isolated technical deficiencies to understanding them as symptoms of broader structural and systemic misalignment.

At the center of this implementation ecosystem is teacher preparedness, which functions as the most influential constraint affecting all other aspects of reform. The inadequate and often superficial training described by Ndihogubwayo et al. (2019) creates a foundational weakness that cascades across pedagogical practice, assessment, classroom management, and curriculum interpretation. When teachers lack a deep understanding of competence-based pedagogy, they are less confident in experimenting with inquiry-based or learner-centered methods and more likely to revert to traditional modes of instruction. This weakness is intensified by the language barrier noted by Dushimumuremyi and Sibomana (2019), which limits teachers’ ability to explain concepts clearly in English and reduces their comfort with open-ended questioning and student-led inquiry. Consequently, the combination of pedagogical and linguistic insecurity not only affects lesson delivery but also shapes teachers’ perceptions of the curriculum’s feasibility, contributing to broader skepticism about the reform.

Curriculum overload further entrenches these challenges by placing unrealistic demands on teachers, thus undermining the core intentions of the CBC. As highlighted by Ndihogubwayo et al. (2019) and Rugamba (2016), teachers consistently report that the volume and complexity of content are unmanageable within the allocated instructional time. This overload is not merely a technical issue but a structural failure to align curriculum policy with classroom realities. Faced with pressure to “cover” content, teachers default to teacher-centered, transmission-based methods, which are incompatible with deep, competency-based learning. The contradiction creates a form of “policy friction,” where the systemic push for rapid coverage directly contradicts the pedagogical push for slow, inquiry-oriented learning. This tension mirrors implementation challenges reported in other contexts, such as China, where ambitious national reforms falter when practical demands exceed teachers’ capacities or available support.

Socio-cultural and attitudinal barriers further compound the complexities of implementation, often being misinterpreted as simple teacher resistance. However, when examined within the broader ecosystem of

inadequate training, curriculum overload, limited resources, and weak involvement in curriculum design, teacher resistance appears as an understandable and rational response to an unsupported reform (Rugamba, 2016). The exclusion of teachers from the curriculum development process denies them the opportunity to contribute their classroom knowledge and undermines their sense of ownership over the reform. As a result, teachers may view the CBC not as a collaborative professional endeavor, but as an externally imposed mandate that increases workload without sufficient support. This disconnection between policy planners and practitioners creates an attitudinal divide that weakens motivation and reduces the likelihood of sustained pedagogical change. Addressing these socio-cultural dimensions is therefore essential to building a coherent and resilient implementation ecosystem in which teachers feel empowered, supported, and genuinely invested in the aims of the curriculum.

The Critical Role of Leadership: The Bridge Between Policy and Practice

The inconsistency of instructional leadership highlighted by Nsengumuremyi and Imaniraho (2025) underscores the pivotal role that school leaders play in mediating the relationship between national policy expectations and everyday classroom realities. Effective leadership acts as the essential bridge that connects policy to practice by translating broad curricular ambitions into actionable guidance, emotional support, and instructional direction for teachers. When head teachers provide consistent, constructive supervision through pre-observation conferences, lesson feedback, mentorship, and ongoing pedagogical dialogue they help teachers make sense of the CBC's demands and develop the confidence required to adapt to learner-centered pedagogies. This leadership presence is especially crucial in contexts marked by curriculum overload and limited teacher preparedness, as school leaders can help teachers prioritize content, model new pedagogical approaches, and create an environment where innovation is encouraged rather than feared. Strong instructional leadership thus becomes a compensatory mechanism that buffers systemic weaknesses and supports teachers in navigating the complexities of reform.

Conversely, when leadership is weak, irregular, or overly compliance-driven, it amplifies all other challenges within the CBC implementation ecosystem. Teachers become isolated in their struggles, unable to rely on school-level structures for guidance, feedback, or emotional reassurance. This leadership vacuum is exacerbated by systemic underfunding of multi-tiered monitoring structures, as noted by Ndihokubwayo et al. (2023), which signals a national undervaluing of the human and institutional support mechanisms essential for sustainable educational change. Without adequate resources, Sector Education Officers and school leaders cannot provide regular coaching, organize professional development, or monitor practice in a meaningful way. As a result, leadership must be reconceptualized not as a bureaucratic function focused on enforcing compliance, but as a developmental role centered on capacity building, collaborative problem-solving, and ongoing pedagogical support. Only by shifting leadership toward a supportive, learning-centered model can Rwanda create the enabling conditions necessary for deep and lasting CBC implementation.

CONCLUSION

In conclusion, the Rwandan experience with CBC implementation offers a powerful lesson on the distinction between curriculum change and curricular transformation. While change is undeniably underway with teachers adopting new instructional strategies, classrooms being equipped with updated materials, and professional collaboration becoming more common true transformation remains elusive. The obstacles identified across studies reveal that deep, systemic implementation is being hindered by persistent capacity gaps, overloaded content, inadequate training, and inconsistent leadership support. These challenges collectively signal that the current system, though moving in the right direction, is not yet robust enough to sustain the level of pedagogical shift envisioned in the CBC reform.

The emerging argument, therefore, is that the strategies identified so far are necessary but not sufficient. Achieving the CBC's aspirations of fostering creativity, problem-solving, and adaptability (Ngendahayo & Askell-Williams, 2016) will require a more harmonized and sustained approach across multiple levels of the education system. This includes aligning curriculum design with classroom realities by reducing content load and involving teachers meaningfully in curriculum review; investing in continuous, context-responsive professional development that moves beyond episodic workshops; strengthening instructional leadership to

emphasize supportive coaching rather than compliance-driven inspection; and allocating dedicated financial resources to close gaps in materials, infrastructure, and teacher preparation. Ultimately, the success of the CBC will depend not on the strength of policy documents, but on the system's long-term commitment to creating an enabling ecosystem in which teachers and school leaders can thrive as agents of meaningful and lasting change.

RECOMMENDATIONS

To bridge the gap between the policy ambitions of the Competence-Based Curriculum (CBC) and its practical implementation in Rwandan classrooms, the following concrete recommendations are proposed for government bodies, school leaders, teachers, and development partners.

Revise and realign the CBC Documents

To strengthen the CBC, Rwanda should begin by revising and realigning its curriculum documents through a practical curriculum audit. This process would involve a task force of experienced master teachers systematically reviewing syllabi and textbooks to identify and reduce content overload, ensuring that core competencies can realistically be achieved within the available instructional time. Additionally, textbook developers and curriculum designers should be required to scaffold complex learning activities by breaking them into smaller, age-appropriate steps, addressing concerns raised by Ndihokubwayo and Habiyaremye (2018) about tasks being too demanding for learners' developmental levels.

Overhaul Teacher Professional Development

Teacher professional development should be overhauled by moving away from one-off, cascade-style training toward a sustained, school-based support model. This would involve allocating dedicated funds for each school to hold regular peer-led INSET sessions that address real classroom challenges. In addition, the government should develop and distribute subject-specific teaching kits—such as basic science experiment materials or language-learning tools like flashcards and role-play guides—to ensure teachers can implement hands-on, competency-based activities even in low-resource environments.

Strengthen Systemic Support

To reinforce systemic support for CBC implementation, the government should establish a dedicated CBC Implementation Fund at district and sector levels, ensuring a protected budget for essential needs such as teaching materials, school-based training, and transport for SEOs to conduct effective monitoring. Additionally, a national CBC "Help Desk" should be launched as a simple digital platform—such as a WhatsApp group, SMS service, or online portal—where teachers can seek real-time guidance, share practical solutions, and receive expert support on implementation challenges.

Institutionalize Collaborative Learning

To institutionalize collaborative learning, schools should protect time for teachers by mandating a weekly "Collaborative Planning Hour," allowing subject or grade-level teams to jointly plan lessons, create resources, and review student progress, similar to effective lesson study practices. Additionally, schools should develop a "Model Lesson" bank by recording short video clips of teachers demonstrating successful learner-centered techniques—such as guiding group discussions or using local materials for science activities—and sharing these clips during staff meetings to provide practical, peer-led training support.

Start Small with Learner-Centered Methods

Teachers can begin implementing learner-centered approaches using simple, low-preparation techniques such as "Think-Pair-Share," where students first think individually, then discuss with a partner, and finally share with the class, which increases participation without requiring complex planning. Additionally, teachers can leverage local resources for hands-on learning—for example, using local plants for biology experiments, bottles and water

for physics activities, or product labels from students' homes to build English vocabulary—making lessons practical, relevant, and resource-efficient.

Align Support with Identified Gaps

To address the most pressing CBC implementation needs, funding should prioritize “resource-light” initiatives, such as producing and distributing low-cost teaching kits and maintaining the model lesson video banks described earlier. In addition, schools and districts should support contextualized action research led by teachers to explore specific local challenges—for example, investigating effective strategies for teaching CBC in large P5 classes—and disseminate the findings across schools to inform practical, evidence-based improvements.

REFERENCE

1. Bizimana, B. (2025). Building education for sustainability: A philosophy of education analysis of competence-based curriculum implementation in Rwanda. *Rwandan Journal of Education*, 7(3), 3–21. <https://www.ajol.info/index.php/rje/article/view/285960>
2. Dusabimana, J., & Mugabo, L. R. (2022). Physics teachers' implementation of competence-based curriculum through the use of inquiry-based teaching and learning: A case of lower secondary schools in Gakenke District. *African Journal of Educational Studies in Mathematics and Sciences*, 18(2), 1–15. <https://doi.org/10.4314/ajesms.v18i2.1>
3. Dushimumuremyi, D., & Sibomana, E. (2019). Competence-Based English Language Teaching in Rwanda: Opportunities, Challenges and possible solutions. *Journal of Language, Technology & Entrepreneurship in Africa*, 9(2), 1–15. <https://doi.org/10.4314/jolte.v9i2>.
4. Ekpong, J. N., Ghevolor, A., & Bassey, V. (2025). Literacy, oral language and rhetoric. *International Journal of Arts, Languages, Linguistics and Literary Studies*, 10(1), 9–17. <https://www.ajol.info/index.php/jolls/article/view/309055>
5. Ezenwa-Ohaeto, N., & Umera-Okeke, N. (2018). Socio-cultural competence in ESL education: A focus on Nigeria. *Lwati: A Journal of Contemporary Research*, 14(4), 16–29. <https://doi.org/10.4314/lwati.v14i4>
6. Mutsinzi, A., Kana, Y., Tateo, A., Ono, Y., Sugiyama, R., & colleagues. (2017, November). Implementation of competence-based curriculum (CBC) in Rwanda: The case of mathematics [Conference presentation]. World Association of Lesson Studies (WALS) 2017.
7. Ndihogubwayo, K., & Habiyaremye, H. T. (2018). Why did Rwanda shift from knowledge to competence based curriculum? Syllabuses and textbooks point of view. *African Research Review*, 12(3), 38–48. <https://doi.org/10.4314/afrrev.v12i3.4>
8. Ndihogubwayo, K., Habiyaremye Hashituky, T., & Jean Claude, R. (2019). Rwandan new competence-base: Curriculum implementation and issues; sector-based trainers. Centre of Excellence for Innovative Teaching and Learning Mathematics and Science (ACEITLMS). Parabolum Publishing Corp.
9. Ndihogubwayo, K., Hashituky, T. H., & Jean Claude, R. (2019). Rwandan new competence-based curriculum implementation and issues; sector-based trainers. Centre of Excellence for Innovative Teaching and Learning Mathematics and Science (ACEITLMS). Parabolum Publishing Corp. <https://www.researchgate.net/publication/335527634>
10. Ndihogubwayo, K., Nyirigira, V., Murasira, G., & Munyensanga, P. (2023). Is competence-based curriculum well monitored? Learning from Rwandan sector education officers. University of Rwanda College of Education / Rwanda Education Board.
11. Ndihogubwayo, K., Nyirigira, V., Murasira, G., & Munyensanga, P. (2021). Is competence-based curriculum well monitored? Learning from Rwandan sector education officers. *Rwandan Journal of Education*, 5(1). <https://www.ajol.info/index.php/rje/article/view/202577>
12. Ndihogubwayo, K., Uwamahoro, J., & Ndayambaje, I. (2020). Implementation of the competence-based learning in Rwandan physics classrooms: First assessment based on the reformed teaching observation protocol. African Center of Excellence for Innovative Teaching and Learning Mathematics and Science, University of Rwanda. <https://doi.org/10.29333/ejmste>

13. Ngendahayo, E., & Askell-Williams, H. (2016). Rwanda's new competence-based school curriculum: New approaches to assessing student learning needed. In Publishing Higher Degree Research (pp. 155–165). Springer. https://doi.org/10.1007/978-94-6300-672-9_16
14. Nsengimana, T., Mugabo, L. R., Ozawa, H., & Nkundabakura, P. (2023). Science teachers' knowledge, understanding and perceptions of competence-based curriculum in three secondary schools in Rwanda. European Journal of Educational Research, 12(1), 317–327. <http://www.eu-jer>
15. Nsengimana, V. . (2021). Implementation of Competence-based Curriculum in Rwanda: Opportunities and Challenges. Rwandan Journal of Education, 5(1). Retrieved from <https://www.ajol.info/index.php/rje/article/view/202582>
16. Nsengumuremyi, E., & Imaniraho, D. (2025). Exploring the influence of head teachers' instructional supervision on the development of competencies in lesson preparation for science and elementary technology teachers in public primary schools in Gasabo District, Rwanda. African Journal of Empirical Research, 6(1), 213–224. <https://doi.org/10.51867/ajernet.6.1.20>
17. Nshimiyimana, V., & Andala, H. O. (2024). Effect of Implementing a Competence-Based Curriculum on Students' Academic Performance in Mathematics: A Case of Selected Lower Secondary Public Day Schools in Rwamagana District, Rwanda. African Journal of Empirical Research, 5(4), . <https://www.ajol.info/index.php/ajempr/article/view/283827>
18. Nteziyaremye, A., Ndizeye, A., & Murenzi, J. de D. (2024). Implementation of competence-based curriculum for Kinyarwanda subject at IPRC Karongi technical secondary school, Rwanda. African Journal of Empirical Research, <https://www.ajol.info/index.php/ajempr/article/view/272835>
19. Rugamba, M. (2016). Competence based curriculum implementation: A case of Rwanda. Retrieved from <https://independent.academia.edu/MugishaRugamba>
20. Tabaro, C. (2018). The Rwandan secondary school competence-based curriculum: Knowledge, skills and attitudes to incorporate in the University of Rwanda-College of Education programs to align them with the current curriculum. International Journal of Education and Practice, 6(2), 64–75. <https://doi.org/10.18488/journal.61.2018.62.64.75>
21. Tuyizere, J. (2024). Contribution of Smart Learning on Students' Academic Competences in Private Universities in Rwanda. African Journal of Empirical Research, 5(4), 675–683. Retrieved from <https://www.ajol.info/index.php/ajempr/article/view/283905>
22. Unegbu, V. E., Owolabi, R., & Michael, J. P. (2025). Influence of professional competence on job performance of medical librarians in health institutions in Southern Nigeria. Samaru Journal of Information Studies, 25(1), 283–298. <https://www.ajol.info/index.php/sjis/article/view/305201>