ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26oct1395

Curriculum Change and Teacher Preparedness in the Implementation of Competence-Based Curriculum in Rwanda

Bakuriyehe Donatille[1*]; Mathias Twahirwa[2]

PhD[2]

[1;2]Kabale University, P. O. Box 317, Kabale, Uganda.

Correspondence Author: Bakuriyehe Donatille[1*]

[1]ORCID ID; https://orcid.org/0009-0009-3028-5645

Publication Date: 2026/11/17

Abstract: This study examined the relationship between curriculum change and teacher preparedness in the implementation of the Competence-Based Curriculum (CBC) in Rwanda. The study was guided by four objectives: to evaluate teachers' understanding of CBC principles, identify challenges faced during implementation, examine available training and support, and explore strategies to enhance teacher preparedness. A pragmatic research paradigm and descriptive survey design were adopted, integrating both quantitative and qualitative approaches. Data were collected from 120 teachers and 10 school administrators using questionnaires and interviews. The study was anchored in Fullan's Theory of Educational Change and Shulman's Pedagogical Content Knowledge, which emphasize teacher capacity and systemic support in curriculum implementation. Findings revealed that the majority of teachers were male (58.3%), aged between 30–39 years (41.7%), and had 6–10 years of teaching experience (41.7%). Additionally, 54.2% held a bachelor's degree, indicating that respondents were relatively qualified. Regarding understanding of CBC, teachers reported a high understanding of its principles (mean = 4.2) and learner-centered teaching methods (mean = 3.8). However, their understanding of competency-based assessment (mean = 3.5) and integration of cross-cutting issues (mean = 3.6) was moderate, suggesting challenges in practical application. The study identified several key challenges affecting CBC implementation. The most significant was inadequate training, reported by 75.0% of teachers, followed by insufficient teaching and learning materials (70.8%) and difficulty in competency-based assessment (66.7%). Large class sizes were reported by 50.0% of respondents, while 37.5% indicated resistance to change among some teachers. These findings highlight systemic barriers that hinder effective curriculum implementation. In terms of support mechanisms, 58.3% of teachers reported receiving in-service training, 54.2% engaged in peer collaboration, and 50.0% benefited from mentoring and supervision. However, only 45.8% had adequate access to teaching and learning resources, indicating that support systems are present but insufficient. Qualitative findings emphasized strategies such as continuous professional development (CPD), provision of adequate resources, mentoring and peer support, and effective monitoring and feedback. These approaches were identified as essential for improving teacher preparedness and bridging the gap between theory and practice. The study concluded that although teachers demonstrate a strong understanding of CBC concepts, their preparedness is constrained by inadequate training, limited resources, and challenges in practical implementation. Strengthening professional development, increasing resource availability, and enhancing institutional support are therefore critical for effective CBC implementation. The study provides valuable insights for policymakers, the Rwanda Education Board, schools, and researchers in improving curriculum reforms and teacher preparedness in Rwanda

Keywords: *Curriculum Change, Teacher Preparedness, Competence-Based Curriculum, Education Reform.*

How to Cite: Bakuriyehe Donatille; Mathias Twahirwa (2026) Curriculum Change and Teacher Preparedness in the Implementation of Competence-Based Curriculum in Rwanda. *International Journal of Innovative Science and Research Technology*, 11(10), 3436-3449. https://doi.org/10.38124/ijisrt/26oct1395

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26oct1395

I. INTRODUCTION

Education systems worldwide have undergone significant transformations in response to globalization, technological advancement, and the need to equip learners with 21st-century skills. Traditional content-based curricula, which emphasized memorization and theoretical knowledge, have increasingly been replaced by competence-based approaches that prioritize the development of practical skills, critical thinking, and problem-solving abilities. These reforms aim to ensure that education systems produce graduates who are adaptable and capable of contributing effectively to socio-economic development (Fullan, 2007; UNESCO, 2015).

In Rwanda, education reform has been a central pillar of national reconstruction and development following the Rwandan Genocide. The government has implemented a series of strategic reforms to rebuild the education system and align it with national development priorities. Key among these initiatives is the introduction of free basic education through the Nine-Year Basic Education (9YBE) and later the Twelve-Year Basic Education (12YBE), which significantly improved access to education and reduced dropout rates. These reforms were designed to promote equity, inclusiveness, and human capital development in line with national policies such as Vision 2020 (Republic of Rwanda, 2013; World Bank, 2018).

One of the most transformative reforms in Rwanda's education system is the introduction of the Competence-Based Curriculum (CBC) in 2015 by the Rwanda Education Board. This reform marked a shift from knowledge-based to skills-oriented education, emphasizing learner-centered pedagogy, continuous assessment, and the integration of cross-cutting issues such as gender, environment, and peace education. The CBC aims to develop learners' competencies that are relevant to the labor market and national development goals, thereby addressing the mismatch between education outcomes and labor market demands (REB, 2015; Nsengimana et al., 2017).

In addition to curriculum reform, Rwanda has implemented significant changes in the language of instruction, shifting from French to English in 2008 to facilitate regional integration and global competitiveness. While this reform opened new opportunities for learners, it also posed challenges, particularly for teachers who were not adequately proficient in English. As a result, the government introduced various teacher professional development programs to enhance teachers' language skills and pedagogical competencies necessary for effective curriculum implementation (Samuelson & Freedman, 2010; World Bank, 2020).

Furthermore, the integration of Information and Communication Technology (ICT) in education represents another major reform aimed at modernizing the education system. Initiatives such as the One Laptop per Child program and the establishment of smart classrooms have been introduced to enhance digital literacy and improve teaching and learning processes. These reforms are aligned with Rwanda's vision of becoming a knowledge-based economy; however, challenges such as inadequate infrastructure and limited teacher training continue to affect their effectiveness (Trucano, 2016; Republic of Rwanda, 2016).

Despite these progressive reforms, the successful implementation of education policies in Rwanda largely depends on teacher preparedness. Teachers play a critical role in translating policy into practice, particularly in implementing the Competence-Based Curriculum and adopting learner-centered approaches. However, studies have shown that many teachers face challenges related to insufficient training, lack of teaching resources, and limited understanding of new pedagogical approaches. These challenges highlight the need to critically examine the relationship between education reforms and teacher preparedness in Rwanda (Bansilal, 2019; Mugabo et al., 2021).

Curriculum change is a central component of educational reform aimed at improving the qualitya nd relevance of education systems worldwide. In recent decades, many countries have shifted from traditional knowledge-based curricula to competence-based approaches that emphasize skills, attitudes, and practical application of knowledge. In Rwanda, this transformation has been driven by national development goals aligned with Vision 2020 and subsequent strategies, which prioritize human capital development as a key pillar for socio-economic progress (Republic of Rwanda, 2012). The introduction of the Competence-Based Curriculum (CBC) in 2015 marked a significant milestone in the country's education reform agenda.

The CBC, developed and implemented under the guidance of the Rwanda Education Board, seeks to equip learners with critical thinking, problem-solving abilities, creativity, and communication skills necessary for the 21st century. Unlike the previous content-based curriculum, the CBC emphasizes learner-centered pedagogy, continuous assessment, and the integration of cross-cutting issues such as gender equality, environmental sustainability, and inclusive education (Rwanda Education Board [REB], 2015). This paradigm shift requires not only structural adjustments but also a transformation in teachers' beliefs, knowledge, and instructional practices.

Teacher preparedness is widely recognized as a crucial determinant of successful curriculum implementation. According to Lee Shulman (1987), effective teaching requires a strong foundation of pedagogical content knowledge, which enables teachers to translate subject matter into meaningful learning experiences. In the context of competence-based education, teachers are expected to adopt innovative teaching strategies, facilitate active learning, and assess competencies rather than rote memorization. However, research indicates that many teachers struggle to adapt to these new demands due to

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26oct1395

limited training, insufficient instructional resources, and inadequate support systems (Mulenga & Kabombwe, 2019).

In Rwanda, several studies have highlighted challenges associated with teacher readiness for CBC implementation. While the government has made efforts to provide in-service training and professional development programs, gaps remain in equipping teachers with practical skills for learner-centered instruction and formative assessment (Uwizeyimana et al., 2018). Additionally, disparities between urban and rural schools in terms of access to teaching materials and professional support further complicate the implementation process. These challenges raise concerns about the consistency and effectiveness of CBC delivery across the country.

Furthermore, the success of curriculum change is influenced by broader systemic factors, including policy coherence, institutional support, and stakeholder engagement. According to Fullan (2007), educational change is a complex process that requires continuous capacity building and collaboration among educators, policymakers, and communities. In the Rwandan context, strengthening teacher preparedness is essential to ensure that the intended outcomes of the CBC such as improved learner competencies and employability that are fully realized.

This study, therefore, seeks to examine the relationship between curriculum change and teacher preparedness in the implementation of the Competence-Based Curriculum in Rwanda. By analyzing teachers' readiness, challenges, and support mechanisms, the research aims to contribute to ongoing efforts to enhance the quality and effectiveness of education reform in the country.

- *Background to the Study*

Globally, education systems are continuously undergoing reforms to align learning outcomes with the demands of the 21st century. One of the major shifts in modern education is the transition from content-based to competence-based curricula, which emphasize skills such as critical thinking, creativity, communication, and problem-solving. Competence-Based Curriculum (CBC) focuses on what learners can do rather than what they know, thereby preparing them for real-life challenges.

In Rwanda, significant curriculum reform was introduced in 2015 through the implementation of the Competence-Based Curriculum by the Rwanda Education Board (REB). This reform aimed to improve the quality of education and align it with national development goals, including those outlined in Vision 2050. The CBC emphasizes learner-centered approaches, continuous assessment, and integration of cross-cutting issues such as gender, environment, and inclusive education.

Despite these efforts, the successful implementation of curriculum reforms largely depends on teacher preparedness. Teachers are key agents in translating curriculum policy into classroom practice. However, studies and reports have indicated that many teachers face challenges such as inadequate training, lack of instructional materials, and limited understanding of competence-based approaches.

Thus , this study seeks to examine how curriculum change has affected teacher preparedness and how this, in turn, influences the implementation of CBC in Rwanda.

- *Statement of the Problem*

The introduction of the Competence-Based Curriculum (CBC) in Rwanda represents a significant shift from a content-based education system to one that emphasizes the acquisition of practical skills, attitudes, and competencies relevant to the demands of the 21st century. Spearheaded by the Rwanda Education Board, this reform aims to enhance learners' critical thinking, creativity, and problem-solving abilities in line with national development priorities. Despite these ambitious goals, the effective implementation of the CBC remains a major challenge, particularly in relation to teacher preparedness.

Teachers are the primary agents of curriculum implementation, and their readiness plays a crucial role in determining the success or failure of any educational reform. However, evidence suggests that many teachers in Rwanda are not adequately prepared to effectively implement the CBC. Studies indicate that although initial training programs were conducted, they were often insufficient in duration and depth to equip teachers with the necessary pedagogical skills required for learner-centered approaches and competence-based assessment (Rwanda Education Board [REB], 2015; Uwizeyimana et al., 2018). As a result, many teachers continue to rely on traditional teacher-centered methods, which contradict the principles of the CBC.

Furthermore, limited access to teaching and learning materials, overcrowded classrooms, and inadequate continuous professional development opportunities have exacerbated the challenges faced by teachers. According to Mulenga and Kabombwe (2019), competence-based curricula require a supportive teaching environment and ongoing teacher training to ensure effective delivery. In Rwanda, disparities between urban and rural schools in terms of resources and institutional support further widen the gap in curriculum implementation, leading to inconsistencies in learning outcomes across different regions.

In addition, the shift to competence-based assessment has posed difficulties for teachers who are more familiar with summative evaluation methods. The lack of clear guidelines and practical assessment tools has made it challenging for teachers to accurately measure students' competencies, thereby undermining the intended objectives of the curriculum reform (Fullan, 2007). This situation raises concerns about whether the CBC is being implemented as intended and whether learners are acquiring the expected competencies.

Although the government and education stakeholders have made considerable efforts to support the transition

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26oct1395

through policy reforms and training initiatives, there is still limited empirical evidence on the extent to which teachers are prepared to implement the CBC effectively and the specific challenges they encounter in the process. This gap in knowledge makes it difficult to design targeted interventions that address the real needs of teachers and improve curriculum implementation.

Therefore, this study seeks to investigate the extent of teacher preparedness in the implementation of the Competence-Based Curriculum in Rwanda and to identify the key challenges and support mechanisms influencing this process. Addressing these issues is essential to ensure that the objectives of the CBC reform are achieved and that the education system contributes effectively to national development.

The shift to a Competence-Based Curriculum (CBC) in Rwanda represents a major educational reform designed to equip learners with practical skills, critical thinking, and problem-solving abilities that are aligned with national development goals (Rwanda Education Board [REB], 2015). While the curriculum aims to foster learner-centered education, the success of this reform largely depends on the preparedness of teachers, who are central to its implementation.

However, research indicates that many teachers in Rwanda face challenges in adapting to the CBC. Insufficient training, limited continuous professional development, inadequate teaching resources, and reliance on traditional teacher-centered methods hinder the effective implementation of the curriculum (Uwizeyimana, Nzabalirwa, & Mukamana, 2018). Moreover, disparities in access to training and instructional materials between urban and rural schools further affect the uniformity and quality of CBC delivery (Mulenga & Kabombwe, 2019). These challenges raise concerns about whether the intended outcomes of the CBC enhanced competencies, employability, and critical skills that are being achieved.

Despite governmental efforts to support teachers through policy reforms and professional development initiatives, there is limited empirical evidence on the extent to which teachers are adequately prepared to implement the CBC and the specific obstacles they face. This knowledge gap hampers the design of effective interventions to support teachers and improve curriculum implementation. Therefore, it is critical to investigate teacher preparedness and the challenges affecting CBC implementation to ensure the curriculum fulfills its intended objectives.

Although Rwanda has made significant progress in reforming its education system, the implementation of the Competence-Based Curriculum (CBC) continues to face challenges. One of the most critical issues is the level of teacher preparedness. Many teachers were trained under the traditional content-based curriculum and may lack the necessary competencies required to effectively implement CBC.

Studies indicate that teachers face challenges such as inadequate professional training, lack of teaching materials, large class sizes, and limited support systems. These challenges create a gap between curriculum expectations and classroom practices, which may negatively affect students' learning outcomes (Bansilal, 2019; Mugabo et al., 2021).

Therefore, there is a need for a comprehensive study to assess teacher preparedness and its influence on the successful implementation of curriculum reforms in Rwanda.

➢ *Research Purpose*

The purpose of this study is to examine teacher preparedness in the implementation of the Competence-Based Curriculum (CBC) in Rwanda and to explore the challenges and support mechanisms that influence effective curriculum delivery. The study seeks to provide insights that can inform policy and professional development strategies aimed at enhancing the successful implementation of the CBC and improving educational outcomes.

➢ *Research Objectives*

- *General Objective*

To examine the relationship between curriculum change and teacher preparedness in the implementation of the Competence-Based Curriculum in Rwanda.

- *Specific Objectives:*

✓ To evaluate teachers' understanding of the principles and requirements of the CBC.
✓ To identify the challenges teachers face in implementing the CBC effectively.
✓ To examine the training, support, and resources available to teachers for CBC implementation.
✓ To explore strategies that can enhance teacher preparedness and effectiveness in delivering the CBC.

➢ *Research Questions*

- To what extent do teachers understand the principles and requirements of the Competence-Based Curriculum in Rwanda?
- What are the main challenges faced by teachers in implementing the CBC?
- What training, support, and resources are available to teachers for effective CBC implementation?
- What strategies can be employed to enhance teacher preparedness and effectiveness in implementing the CBC?

II. LITERATURE REVIEW

➢ *Concept of Curriculum Change*

Curriculum change is a deliberate process aimed at improving the educational system by updating what students learn, how they learn, and how learning is assessed. It often responds to societal needs, technological advancements, and

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26oct1395

national development goals (Fullan, 2007). In Rwanda, curriculum reform has been influenced by the need to align education with the country's Vision 2020 and subsequent strategies, which emphasize human capital development, practical skills, and competencies necessary for socio-economic growth (Republic of Rwanda, 2012).

A shift from a knowledge-based curriculum to a competence-based curriculum (CBC) represents not only a change in content but also in teaching approaches, assessment methods, and learning outcomes. Competence-based curricula focus on what learners can do with knowledge, including skills, attitudes, and values, rather than mere recall of information (Mulenga & Kabombwe, 2019). Therefore, curriculum change is inherently complex and requires systemic support, especially for teachers, who are primary agents of implementation.

- *Competence-Based Curriculum (CBC) in Rwanda*

The CBC was introduced in Rwanda to promote learner-centered pedagogy, practical application of knowledge, and assessment of competencies rather than rote memorization. It integrates cross-cutting issues such as gender equality, environmental sustainability, and civic education (Rwanda Education Board [REB], 2015). This approach emphasizes active learning, critical thinking, and problem-solving, preparing students for the 21st-century workforce.

However, studies indicate that implementing CBC poses significant challenges. Uwizeyimana, Nzabalirwa, and Mukamana (2018) reported that while teachers appreciate the principles of CBC, many lack adequate skills in learner-centered teaching and competence-based assessment. Similarly, Mulenga and Kabombwe (2019) emphasized that competence-based curricula require continuous teacher training and support to be effectively implemented. Without these, curriculum reforms risk being implemented superficially, undermining intended learning outcomes.

- *Teacher Preparedness in Curriculum Implementation*

Teacher preparedness is critical for the successful adoption of any curriculum reform. Shulman (1987) highlighted the importance of pedagogical content knowledge, which enables teachers to translate curriculum goals into effective learning experiences. In the context of competence-based education, preparedness involves understanding the CBC framework, mastering learner-centered teaching methods, and conducting formative assessments that evaluate learners' competencies.

Empirical studies have shown that insufficient training and lack of continuous professional development impede teacher readiness. Uwizeyimana et al. (2018) found that Rwandan teachers faced difficulties implementing CBC due to limited exposure to learner-centered strategies, inadequate instructional resources, and lack of support from school leadership. Agyeman and Asiedu-Akrofi (2018) reported similar findings in Ghana, noting that teacher preparedness significantly influenced the success of competence-based curriculum reforms.

- *Recent Empirical Studies*

Recent empirical studies on the implementation of the Competence-Based Curriculum (CBC) in Rwanda highlight the central role of teacher preparedness in achieving curriculum goals. A study by Nsengimana (2022) examined science teachers' knowledge, understanding, and perceptions of CBC in lower secondary schools. The findings revealed that although teachers generally understood the principles of CBC, there were significant gaps in their ability to apply learner-centered and inquiry-based teaching approaches. The study concluded that insufficient pedagogical training and limited instructional support hinder effective curriculum implementation.

Similarly, a study conducted in 2023 on biology teachers' attitudes and instructional practices found that teachers exhibited positive attitudes toward CBC but struggled to translate these attitudes into effective classroom practices. The research revealed that many teachers continued to rely on traditional teaching methods despite the expectations of learner-centered pedagogy, indicating a gap between curriculum design and actual classroom implementation (Bizimana et al., 2023) .

Another empirical study by Nsengimana et al. (2023) investigated teachers' knowledge and perceptions of CBC in Rwandan secondary schools. The findings indicated that teacher understanding of CBC concepts varied significantly, with some teachers demonstrating strong conceptual knowledge while others lacked clarity on competence-based assessment and instructional strategies. The study emphasized the need for continuous professional development to enhance teacher preparedness and ensure effective curriculum delivery.

In 2022, a study examining teachers' perceptions of student achievement under CBC revealed discrepancies between teachers' expectations and actual student performance. While teachers believed that students were capable of achieving required competencies, assessment results showed gaps in learners' mastery of skills. This mismatch was attributed to inadequate teaching strategies and insufficient teacher training, highlighting the importance of strengthening teacher capacity in implementing CBC.

More recent research (2025) on CBC implementation in Rwanda has further reinforced these findings by identifying persistent challenges such as lack of teaching resources, limited infrastructure, and inadequate teacher preparedness. A study focusing on geography teaching in secondary schools found that teachers' limited readiness and lack of instructional materials significantly affected the effective implementation of CBC. The study recommended increased investment in teacher training and provision of teaching resources to improve outcomes.

In addition, a 2025 systematic review of CBC implementation strategies in Rwanda highlighted that while policy frameworks are well established, practical implementation remains constrained by teacher-related factors, including insufficient training, resistance to change,

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26oct1395

and lack of continuous support. The study emphasized that successful curriculum reform depends largely on sustained teacher professional development and institutional support systems.

Furthermore, recent research on learner-centered pedagogy (2025) introduced tools such as lesson observation frameworks to monitor CBC implementation. Findings showed that although schools are adopting competence-based approaches, there is still a lack of consistent evaluation mechanisms to assess teaching practices. This gap limits the ability to measure teacher effectiveness and improve instructional quality under CBC.

➢ *Empirical Studies*

Empirical research on the implementation of competence-based curricula highlights the critical role of teacher preparedness in achieving the intended learning outcomes. In Rwanda, the shift from a knowledge-based curriculum to the Competence-Based Curriculum (CBC) has required teachers to adopt learner-centered pedagogy, integrate cross-cutting issues, and conduct continuous assessments of students' competencies (Rwanda Education Board [REB], 2015).

Uwizeyimana, Nzabalirwa, and Mukamana (2018) conducted a study on teachers' preparedness for CBC implementation in Rwandan secondary schools. Their findings revealed that although teachers recognized the importance of the CBC, most faced challenges such as inadequate training in learner-centered methodologies, lack of competence in assessing practical skills, and insufficient teaching resources. The study also noted disparities between urban and rural schools, with rural teachers often lacking access to professional development programs and instructional materials, which negatively impacted the uniformity of curriculum delivery.

Similarly, Mulenga and Kabombwe (2019) investigated the implementation of competence-based curricula in Zambia. They found that teachers' effectiveness in delivering competence-based education was heavily influenced by pre-service and in-service training, the availability of instructional resources, and ongoing professional support. Teachers who received continuous training and mentoring were more capable of adopting innovative teaching strategies and effectively assessing learners' competencies.

A study by Agyeman and Asiedu-Akrofi (2018) in Ghana highlighted that competence-based curriculum reforms often face implementation challenges due to teachers' limited pedagogical skills and resistance to change. They argued that curriculum reform is a systemic process that requires not only teacher training but also institutional support, access to learning materials, and community involvement.

In addition, Fullan (2007) emphasized that educational change is a complex process involving multiple stakeholders. Teacher preparedness, continuous capacity building, and the provision of supportive infrastructures are critical to ensuring that reforms achieve their intended outcomes. In the context of Rwanda, these findings underscore the importance of aligning teacher training programs with the demands of the CBC and providing adequate support mechanisms to facilitate effective curriculum implementation.

The empirical evidence indicates that while curriculum reforms like the CBC are designed to enhance learning outcomes, their success largely depends on teacher readiness, adequate resources, and continuous professional development. These studies collectively suggest that understanding the challenges faced by teachers and addressing gaps in preparation and support are essential for improving the effectiveness of competence-based curricula in Rwanda.

➢ *Research Gaps*

The literature highlights that curriculum change alone is insufficient without adequately prepared teachers and supportive systems. While CBC in Rwanda presents an opportunity to enhance learner competencies, empirical studies indicate gaps in teacher preparedness, training, resource availability, and assessment capacity. There is limited research providing a comprehensive analysis of the specific challenges teachers face and the effectiveness of support mechanisms in Rwanda, highlighting the need for this study.

This study aims to fill this gap by examining teacher preparedness, identifying challenges, and exploring strategies that can enhance the successful implementation of the CBC in Rwanda.

➢ *Theoretical Framework*

The theoretical foundation of this study is grounded in Fullan's Theory of Educational Change and Shulman's Pedagogical Content Knowledge (PCK) Theory, which together provide a comprehensive lens to examine teacher preparedness and curriculum implementation.

➢ *Fullan's Theory of Educational Change*

Michael Fullan (2007) emphasizes that educational change is a complex and systemic process that requires more than introducing new policies or curricula. According to Fullan, successful curriculum reform depends on three key factors: capacity building, commitment of teachers, and supportive structures. Teachers are considered primary agents of change, and their readiness, attitudes, and skills determine whether reforms achieve their intended outcomes. Fullan argues that change is often resisted if teachers lack adequate knowledge, resources, or professional support.

In the context of Rwanda's Competence-Based Curriculum (CBC), Fullan's theory suggests that the effectiveness of the reform is closely linked to teacher preparedness. Teachers must be equipped with appropriate pedagogical skills, access to instructional resources, and continuous professional development opportunities to

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26oct1395

facilitate learner-centered teaching and competency-based assessment (Fullan, 2007).

➢ *Shulman's Pedagogical Content Knowledge (PCK) Theory*

Shulman (1987) introduced the concept of Pedagogical Content Knowledge (PCK), which highlights the integration of subject matter knowledge and pedagogy. According to Shulman, effective teaching requires not only mastery of content but also the ability to translate it into learning experiences that students can understand and apply. PCK emphasizes the teacher's role in selecting appropriate teaching strategies, designing lessons that align with learners' needs, and assessing understanding in a meaningful way.

Applying PCK to the CBC, teachers must understand both the curriculum's competencies and effective pedagogical strategies for delivering them. For example, teaching problem-solving or critical thinking skills require knowledge of instructional methods that actively engage students, rather than relying on traditional lecture-based approaches. Teachers who lack PCK may struggle to implement CBC effectively, even if they understand the curriculum content.

➢ *Integration of Fullan and Shulman Theories in CBC Implementation*

Combining Fullan's theory of educational change with Shulman's PCK provides a robust framework for examining teacher preparedness in CBC implementation:

Teacher Preparedness: Teachers must have the knowledge, skills, and attitudes to adopt learner-centered pedagogy and competency-based assessment (Shulman, 1987).

Systemic Support: Professional development, mentoring, and access to teaching resources are critical for building teacher capacity (Fullan, 2007).

Implementation Challenges: Resistance to change, resource limitations, and lack of assessment tools can hinder effective curriculum delivery (Uwizeyimana, Nzabalirwa, & Mukamana, 2018).

Expected Outcomes: Adequately prepared teachers are more likely to implement the CBC successfully, resulting in enhanced student competencies and learning outcomes.

This theoretical framework guides the study by identifying key variables curriculum change, teacher preparedness, challenges, support mechanisms, and implementation outcomes and explaining the relationships between them. It provides a foundation for developing the research objectives, questions, and conceptual framework for the study

➢ *Conceptual Framework*

The conceptual framework illustrates the relationships between key variables in this study: Curriculum Change, Teacher Preparedness, Challenges, Support Mechanisms, and Implementation Outcomes of the Competence-Based Curriculum (CBC) in Rwanda. This framework is guided by Fullan's Theory of Educational Change (2007) and Shulman's Pedagogical Content Knowledge (1987), which emphasizes the importance of teacher readiness, capacity building, and systemic support for effective curriculum implementation.

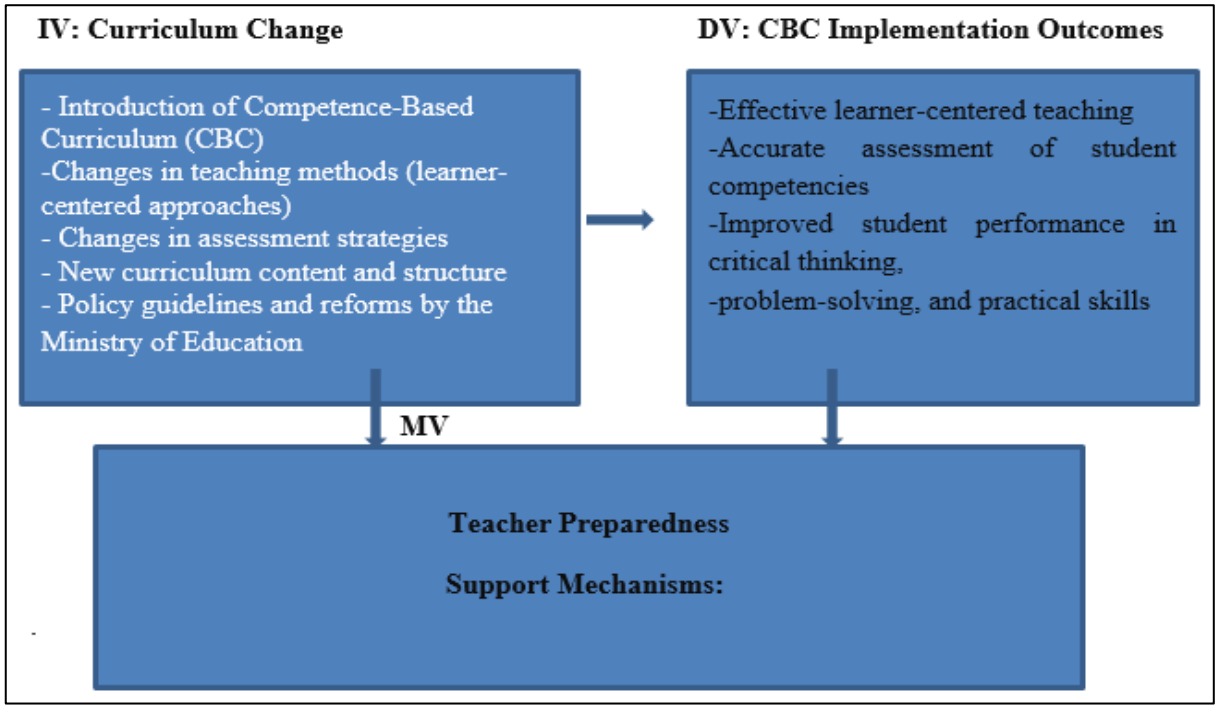


Fig 1 Conceptual Framework

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26oct1395

➢ *Ethical Considerations*

Ethical considerations are critical in educational research to ensure that the rights, dignity, and welfare of participants are protected. This study will adhere to the principles of research ethics as outlined by professional and academic standards, including respect for persons, beneficence, and justice (Israel & Hay, 2006). The following ethical considerations guided the research process:

Participants, including teachers, school administrators, and education officials, were fully informed about the purpose, objectives, and procedures of the study. They provided with clear information on their voluntary participation, the expected time commitment, and the potential benefits and risks associated with the study. Informed consent was obtained in writing before data collection begins, and participants had the right to withdraw from the study at any time without any negative consequences.

All information collected from participants was treated with strict confidentiality. Personal identifiers, such as names and school locations, were not disclosed in any reports, publications, or presentations. Participants' responses were anonymized using codes to protect their identities and ensure privacy. Data was stored securely, accessible only to the researcher and authorized personnel involved in the study.

The study ensured that participants are not subjected to any physical, psychological, or social harm. Questions and data collection methods were designed to avoid discomfort, embarrassment, or distress. Participants were assured that their involvement poses minimal risk and that support will be provided if any emotional or professional concerns arise during the research process.

Participation in the study was entirely voluntary. Teachers and other stakeholders were free to decline participation or withdraw at any stage without any penalty or impact on their professional standing. The researcher respected participants' autonomy in making decisions about their involvement.

➢ *Research Design*

The study presents the methodology employed in this study. It describes the research design, target population, sampling procedures, research instruments, data collection methods, and data analysis techniques. The methodology is structured to address the research objectives: assessing teacher preparedness, identifying challenges, examining support mechanisms, and exploring strategies for effective implementation of the Competence-Based Curriculum (CBC) in Rwanda. The chapter also addresses ethical considerations, validity, and reliability of the research instruments**.** The study has used a descriptive research design with both quantitative and qualitative approaches. In this study, interpretivism, a research paradigm, was used in order to focus on understanding how people make meaning. We used mixed methods as pragmatism paradigm.

It presents the research methodology that was used in the study on *Curriculum Change and Teacher Preparedness in the Implementation of Competence-Based Curriculum in Rwanda*. It describes the research paradigm, research design, target population, sampling procedures, data collection methods, data analysis techniques, and ethical considerations. The study was guided by the pragmatic research paradigm. This paradigm is considered appropriate because it allows the researcher to combine both quantitative and qualitative approaches in addressing the research problem. The issue of curriculum change and teacher preparedness involves both measurable elements, such as teachers' level of training and competence, and subjective aspects, such as their attitudes, perceptions, and experiences. By adopting a pragmatic approach, the study was collected numerical data through structured questionnaires and qualitative data through interviews. This combination enables a deeper and more comprehensive understanding of how teachers are prepared to implement the Competence-Based Curriculum in Rwanda.

The research adopted a descriptive survey design. This design is suitable because it allows the researcher to collect information from a large group of respondents and describe their characteristics, opinions, and experiences regarding curriculum implementation. The descriptive survey design helps in identifying patterns and relationships between curriculum change and teacher preparedness without manipulating any variables. It is also efficient in terms of time and cost, making it appropriate for educational research conducted in school settings.

The target population of the study consists of key stakeholders involved in the implementation of the Competence-Based Curriculum in Rwanda. These include primary and secondary school teachers, head teachers, and directors of studies. Teachers form the main group because they are directly responsible for implementing the curriculum in the classroom. Head teachers and directors of studies play supervisory and administrative roles, ensuring that curriculum changes are effectively implemented. In some cases, education officers may also be considered to provide additional insights into curriculum policies and support systems. This population is relevant because it provides both practical and administrative perspectives on teacher preparedness.

To ensure that the sample represents the population adequately, the study used a combination of sampling procedures. First, stratified sampling was employed to divide the population into different groups, such as primary and secondary schools or urban and rural schools. This ensures that all important categories are included in the study. Within each stratum, simple random sampling was used to select teachers, giving each individual an equal chance of being chosen and minimizing selection bias. Additionally, purposive sampling was used to select head teachers and directors of studies, as they possess specific knowledge and experience relevant to the study. The sample size was determined using an appropriate formula, such as Slovin's formula, to ensure that the number of respondents

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26oct1395

is manageable while still representing the population effectively.

The study used both primary data collection methods. Questionnaires will be administered to teachers to collect quantitative data on their level of preparedness, training, and experiences with the Competence-Based Curriculum. The questionnaires will include both closed-ended and open-ended questions to allow for a range of responses. In addition, interviews will be conducted with head teachers and directors of studies to gather in-depth qualitative data on curriculum implementation, challenges faced, and strategies used to support teachers. These methods are chosen because they complement each other and provide a more complete understanding of the research problem.

To ensure the validity and reliability of the research instruments, the questionnaire and interview guides will be reviewed by experts in education and research methodology. A pilot study was also conducted in a small number of schools to test the clarity and consistency of the instruments. Feedback from the pilot study was used to make necessary adjustments before the actual data collection. Reliability will be ensured by maintaining consistency in the administration of the instruments and by using clear and well-structured questions.

Data collected from the field was analyzed using both quantitative and qualitative techniques. Quantitative data from questionnaires was coded and entered into statistical software, where descriptive statistics such as frequencies, percentages, and means will be used to summarize the data. The results were presented in tables and charts for easy interpretation. Qualitative data from interviews was analyzed using thematic analysis, where responses will be organized into themes and patterns related to teacher preparedness and curriculum change. These combinations of analysis methods provide both numerical and descriptive insights into the research problem.

- *Demographic Characteristics of Respondents*

The study involved 110 teachers from urban and rural schools, 10 school administrators; Table 1 shows the demographic profile of teacher respondents.

Table 1 Demographic Characteristics of Teacher Respondents (n = 120)

Characteristics	Frequency	Percentage (%)
Gender		
Male	70	58.3
Female	50	41.7
Age		
20–29	30	25.0
30–39	50	41.7
40–49	25	20.8
50 and above	15	12.5
Teaching Experience		
1–5 years	25	20.8
6–10 years	50	41.7
11–15 years	30	25.0
16 years and above	15	12.5
Qualification		
Diploma	40	33.3
Bachelor’s Degree	65	54.2
Master’s Degree	15	12.5

The majority of teachers (58.3%) were male, aged between 30–39 years (41.7%), and had teaching experience of 6–10 years (41.7%). Most teachers (54.2%) held a bachelor’s degree, indicating that respondents were relatively well-qualified to provide insights into CBC implementation.

- *Teachers’ Understanding of CBC Principles and Requirements*

Teachers were asked to rate their understanding of the CBC on a 5-point Likert scale. Fig 2 summarizes the findings.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26oct1395

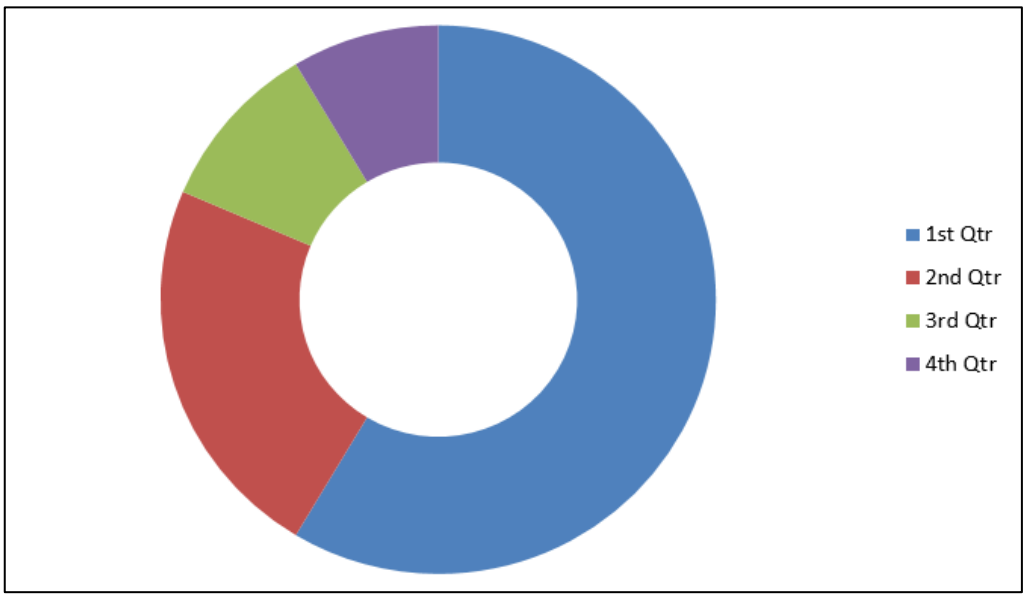


Fig 2 Teachers' Understanding of CBC

Teachers generally reported a good understanding of CBC principles (mean = 4.2), but knowledge of competency-based assessment (mean = 3.5) and integration of cross-cutting issues (mean = 3.6) was moderate. This suggests that while teachers grasp the theoretical concepts of CBC, practical application remains a challenge.

➢ *Challenges Faced by Teachers in Implementing CBC*

Teachers identified several challenges during CBC implementation. Fig 3 presents the major challenges and the percentage of teachers who reported them.

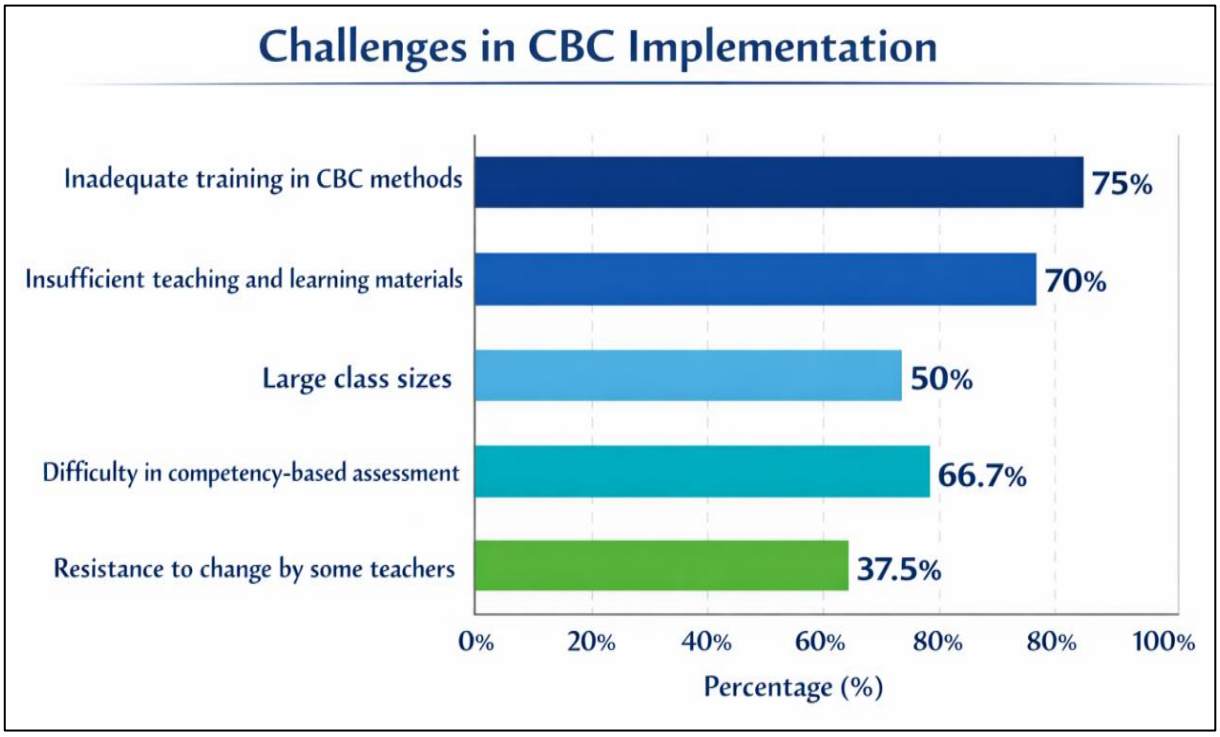


Fig 3 Challenges in CBC Implementation

The most significant challenges were inadequate training (75%) and difficulty in competency-based assessment (66.7%). Insufficient teaching materials (70.8%) and large class sizes (50%) further compounded the problem. These findings are consistent with previous studies (Uwizeyimana et al., 2018; Mulenga & Kabombwe, 2019).

➢ *Training, Support, and Resources Available to Teachers*

The study explored the availability and effectiveness of support mechanisms. Fig 4 summarizes teachers' responses.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26oct1395

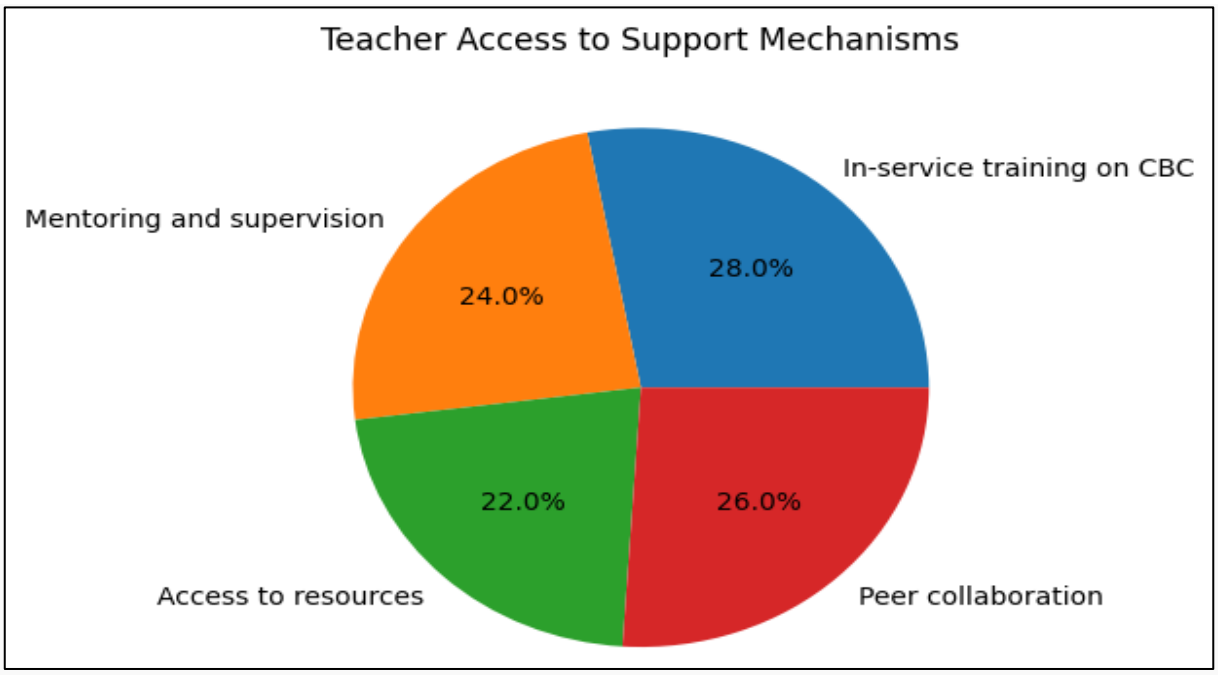


Fig 4 Teacher Access to Support Mechanisms

The pie chart shows how teachers access different support mechanisms, and the distribution is fairly balanced across all four areas. In-service training on CBC (28%) has the largest share, indicating that professional development programs are the most common form of support. This suggests teachers rely heavily on formal training to improve their skills and understanding of the curriculum.

Peer collaboration (26%) is the second most common support mechanism. This highlights the importance of teamwork and knowledge-sharing among teachers in improving teaching practices. Mentoring and supervision (24%) also play a significant role, showing that guidance from school leaders and experienced educators is a key source of support..

➢ *Strategies for Enhancing Teacher Preparedness*

Qualitative interviews with school administrators and REB officials highlighted strategies for improving teacher readiness:

Improving teacher readiness for competency-based curriculum (CBC) implementation requires a multifaceted approach, and qualitative interviews with school administrators and Rwanda Education Board (REB) officials reveal several strategies that are both practical and impactful. These strategies highlight the importance of continuous learning, resource provision, collaborative support, and structured feedback mechanisms.

One of the most emphasized strategies is Continuous Professional Development (CPD). Administrators and REB officials consistently pointed to the need for regular workshops and training sessions that focus on learner-centered pedagogy and competency-based assessment. CPD was described not merely as a one-off intervention but as an ongoing process that equips teachers with evolving skills to adapt to new educational demands. Interviewees noted that when teachers engage in sustained professional learning, they become more confident in applying innovative teaching methods and are better prepared to foster critical thinking among students.

Equally important is the Provision of Resources. Respondents highlighted that teacher readiness is significantly hindered when schools lack adequate teaching and learning materials. Textbooks, ICT tools, and assessment guides were identified as essential resources that enable teachers to effectively deliver CBC content. School administrators explained that resource provision is not only about availability but also about accessibility ensuring that teachers can integrate these tools seamlessly into their daily practice. The qualitative data underscored that resource gaps often lead to frustration and reduced effectiveness, while well-supplied schools tend to demonstrate stronger CBC implementation.

Another recurring theme was Mentoring and Peer Support. Experienced teachers play a crucial role in guiding their less-prepared colleagues. Administrators described mentoring as a practical, context-driven strategy where seasoned educators share classroom-tested approaches, thereby bridging the gap between theory and practice. Peer support networks were also highlighted as spaces where teachers exchange ideas, troubleshoot challenges, and build collective confidence. This relational dimension of teacher readiness was seen as vital in sustaining morale and professional growth.

Monitoring and feedback emerged as a critical strategy. REB officials emphasized that constructive feedback mechanisms help teachers refine their practice and align with CBC standards. School administrators explained that monitoring is not intended to be punitive but

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26oct1395

developmental, offering teacher's insights into their strengths and areas for improvement. Feedback sessions were described as opportunities for dialogue, where teachers receive guidance on lesson planning, assessment techniques, and classroom management. This iterative process of monitoring and feedback ensures that teachers remain accountable while continuously improving their instructional quality.

The qualitative insights from administrators and REB officials reveal that teacher readiness for CBC implementation is strengthened through continuous professional development, adequate resource provision, mentoring and peer support, and structured monitoring with constructive feedback. These strategies collectively foster a supportive environment where teachers can thrive, ultimately enhancing the quality of education delivered to learners. These strategies align with Fullan's (2007) emphasis on systemic support and capacity building, reinforcing the notion that teacher preparedness is critical to successful CBC implementation.

III. SUMMARY OF FINDINGS

The study examined teacher preparedness for the implementation of the Competence-Based Curriculum (CBC) in Rwanda, focusing on demographic characteristics, understanding of CBC, challenges faced, and available support mechanisms.

Firstly, the demographic findings revealed that the majority of respondents were male (58.3%), with most teachers aged between 30–39 years (41.7%). A large proportion had teaching experience of 6–10 years (41.7%), and more than half (54.2%) held a bachelor's degree. This indicates that respondents were relatively experienced and academically qualified, making them suitable for providing reliable insights into CBC implementation.

Secondly, regarding teachers' understanding of CBC, the findings showed that teachers generally had a strong grasp of CBC principles (mean = 4.2) and a fairly good understanding of learner-centered teaching methods (mean = 3.8). However, their knowledge of competency-based assessment (mean = 3.5) and integration of cross-cutting issues (mean = 3.6) was only moderate. This suggests that while teachers understand the theoretical foundations of CBC, they face challenges in practical application.

Thirdly, the study identified several key challenges affecting CBC implementation. The most significant issues included inadequate training (75%), insufficient teaching and learning materials (70.8%), and difficulty in conducting competency-based assessment (66.7%). Large class sizes (50%) and resistance to change among some teachers (37.5%) were also reported. These challenges highlight systemic and institutional barriers that hinder effective curriculum implementation.

In terms of support mechanisms, the findings indicated that although some support exists, it is insufficient. Only 58.3% of teachers had received in-service training, 54.2% engaged in peer collaboration, and less than half (45.8%) had adequate access to teaching resources. Mentoring and supervision were also reported at moderate levels (50%). This suggests gaps in institutional support systems necessary for successful CBC implementation.

Finally, the study identified key strategies for improving teacher preparedness. These include continuous professional development (CPD), provision of adequate teaching and learning resources, strengthening mentoring and peer support systems, and implementing effective monitoring and feedback mechanisms. These strategies emphasize the importance of sustained capacity building and systemic support in enhancing teachers' ability to implement CBC effectively.

Overall, the findings indicate that while teachers are relatively qualified and have a good understanding of CBC concepts, significant challenges related to training, resources, and practical implementation persist. Strengthening support systems and professional development opportunities is therefore essential for improving the successful implementation of the Competence-Based Curriculum in Rwanda.

IV. DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

This paragraph presents a discussion of the study findings in relation to the research objectives and existing literature. It also draws conclusions and provides recommendations for policymakers, educators, and other stakeholders to enhance the effective implementation of the Competence-Based Curriculum (CBC) in Rwanda.

➢ *Discussion of Findings*

- *Teachers' Understanding of CBC Principles and Requirements*

The study found that teachers have a moderate to high understanding of CBC principles (mean = 4.2) but demonstrated moderate knowledge in applying competency-based assessment and integrating cross-cutting issues. This indicates that while teachers are familiar with the theoretical underpinnings of the CBC, the practical application remains a challenge.

This finding aligns with Uwizeyimana et al. (2018), who reported that Rwandan teachers were aware of the CBC objectives but struggled to translate these into learner-centered teaching practices. Similarly, Mulenga and Kabombwe (2019) emphasized that competence-based curricula require practical skills in pedagogy and assessment, not just theoretical understanding.

The implication is that teacher knowledge alone is insufficient; targeted capacity-building programs are essential to enhance pedagogical application. This supports Shulman's Pedagogical Content Knowledge (PCK) theory, which posits that effective teaching depends on the

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26oct1395

integration of content knowledge and appropriate instructional strategies (Shulman, 1987).

- *Challenges in Implementing CBC*

The study identified several challenges, including inadequate training (75%), limited resources (70.8%), difficulty in assessment (66.7%), and large class sizes (50%). These challenges significantly hinder teachers' ability to deliver competency-based education effectively.

This confirms Fullan's (2007) assertion that systemic factors, including training, resources, and institutional support, are critical for successful educational change. The study also reflects findings from Agyeman and Asiedu-Akrofi (2018) in Ghana, where teacher readiness and access to resources strongly influenced competence-based curriculum implementation.

Large class sizes and resource limitations are particularly concerning in rural schools, indicating that geographic disparities affect equitable curriculum delivery.

- *Training, Support, and Resources Available to Teachers*

The study revealed that while support mechanisms exist such as in-service training (58.3%) and peer collaboration (54.2%) they are insufficient to ensure uniform teacher preparedness. This limited support contributes to inconsistent implementation of CBC across schools.

These findings are consistent with Fullan (2007**)**, who emphasizes the importance of continuous professional development, mentoring, and institutional support in sustaining educational reforms. The study suggests that effective teacher support mechanisms are essential for bridging the gap between knowledge and practice.

- *Strategies for Enhancing Teacher Preparedness*

Qualitative interviews indicated that continuous professional development, mentoring, provision of teaching and learning resources, and monitoring and feedback are key strategies to enhance teacher preparedness.

This aligns with the study's conceptual framework, which posited that teacher preparedness and support mechanisms positively influence CBC implementation outcomes, while challenges moderate this relationship.

➢ *Conclusions*

Based on the findings, the study concludes the following that teachers in Rwanda have a moderate to high understanding of CBC principles but require further training in competency-based assessment and integration of cross-cutting issues. Implementation Challenges like insufficient training, limited resources, large class sizes, and difficulty in assessment impede effective CBC implementation. Existing support mechanisms are beneficial but inadequate. Continuous professional development, mentoring, and provision of resources are essential to strengthen teacher preparedness. Successful CBC implementation requires systemic support, equitable resource distribution, and ongoing monitoring to ensure quality education for all learners.

➢ *Recommendations*

- *To the Government and Rwanda Education Board (REB)*

Expand and intensify pre-service and in-service training programs focusing on learner-centered pedagogy and competency-based assessment. Ensure that all schools, especially in rural areas, have sufficient teaching and learning materials, including ICT tools and textbooks. Strengthen supervision and feedback mechanisms to track the progress of CBC implementation and address challenges promptly.

- *To School Administrators*

Establish peer mentoring and collaborative learning among teachers to share best practices in CBC implementation. Encourage practical strategies to manage large class sizes and ensure active student participation.

- *To Teachers*

Actively participate in training programs and workshops to enhance knowledge and skills in CBC delivery. Adopt learner-centered methods and competency-based assessment strategies to improve student learning outcomes.

- *To Community and Stakeholders*

Collaborate with schools to provide learning materials and facilities that support CBC implementation.

Promote awareness of CBC objectives and benefits among parents and the community to foster supportive learning environments.

➢ *Areas for Further Research*

Future studies could explore:

- The impact of CBC on student learning outcomes and skill acquisition.
- Comparative studies on urban and rural school implementation of CBC.
- The role of ICT, AI skills integration in enhancing teacher preparedness and CBC delivery.

REFERENCES

[1]. Agyeman, K., & Asiedu-Akrofi, K. (2018).Teacher preparedness for competence-based curriculum implementation in Ghanaian basic schools. *International Journal of Education and Practice, 6*(2), 45–57.

[2]. Bansilal, S. (2019). Teacher professional development and curriculum reform: A case study. *International Journal of Educational Development, 65*, 1–10.

[3]. Bizimana, E., Mutangana, D., & Mwesigye, A. (2023). Switching from knowledge to competence-based teachings: Biology teachers' attitudes and

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26oct1395

instructional practices. *European Journal of Mathematics and Science Education*.
[4]. Fullan, M. (2007). *The new meaning of educational change* (4th ed.). Teachers College Press.
[5]. Israel, M., & Hay, I. (2006). *Research ethics for social scientists: Between ethical conduct and regulatory compliance*. Sage Publications.
[6]. Manirakiza, V., et al. (2025). Competence-based curriculum implementation in Rwanda: Strategies and challenges. *International Journal of Research and Innovation in Social Science*.
[7]. Mulenga, I. M., & Kabombwe, Y. M. (2019). Understanding a competence-based curriculum and education: The Zambian perspective. *Journal of Lexicography and Terminology, 3*(1), 106–134.
[8]. Mugabo, L. R., et al. (2021). Implementing competence-based curriculum in Rwanda: Opportunities and challenges. *African Educational Research Journal, 9*(2), 345–356.
[9]. Nsengimana, T. (2022). Science teachers' knowledge, understanding, and perceptions of competence-based curriculum in Rwanda. *University of Rwanda Repository*.
[10]. Nsengimana, T., et al. (2017). Competence-based curriculum in Rwanda: A case study of its implementation. *Rwandan Journal of Education, 4*(1), 23–35.
[11]. Nsengimana, T., Mugabo, L. R., Ozawa, H., & Nkundabakura, P. (2023). Science teachers' knowledge and perceptions of competence-based curriculum in Rwanda. *European Journal of Educational Research, 12*(1), 317–327.
[12]. Republic of Rwanda. (2013). *Education Sector Strategic Plan 2013–2018*. Ministry of Education.
[13]. Republic of Rwanda. (2016). *ICT in Education Policy*. Ministry of Education.
[14]. Rwanda Education Board (REB). (2015). *Competence-based curriculum: Curriculum framework*. Kigali, Rwanda.
[15]. Samuelson, B. L., & Freedman, S. W. (2010). Language policy, multilingual education, and power in Rwanda. *Language Policy, 9*(3), 191–215.
[16]. Science Publishing Group. (2022). Teachers' perception on students' achievement ability in CBC in Rwanda. *Education Journal*.
[17]. Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review, 57*(1), 1–22.
[18]. Trucano, M. (2016). ICT in education in Rwanda. World Bank.
[19]. Ukobizaba, F., et al. (2025). Lesson observation tool for project-based learning in Rwanda. *Frontiers in Education*.
[20]. UNESCO. (2015). *Rethinking education: Towards a global common good?* UNESCO.
[21]. Uwizeyimana, D., Nzabalirwa, W., & Mukamana, E. (2018). Teachers' preparedness in implementing competence-based curriculum in Rwandan secondary schools. *Rwandan Journal of Education, 4*(2), 45–58.
[22]. World Bank. (2018). *Rwanda education sector analysis*. World Bank.
[23]. World Bank. (2020). *Improving teacher effectiveness in Rwanda*. World Bank.