



# Challenges Facing the Implementation of the Competence-Based Curriculum in Geography Subject among Secondary Schools in Rwanda

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East African Journal of Education and Social Sciences

## Abstract

This study examined the challenges facing the effective implementation of the Competence-Based Curriculum (CBC) in Geography instruction among Secondary Schools in Rwanda. A structured questionnaire gathered information from 13 teachers. Data was analyzed using descriptive statistics. Based on the findings, the study concluded that numerous challenges affect the implementation of the CBC in Geography. These challenges are related to the schools' inadequate facilities and resources, teachers' limited readiness, students' behaviour and their capacity. The implementation was impeded by a lack of relevant equipment and and teachers' lack of preparedness. Among the recommendations is that school managers provide the necessary materials for effective implementation of the CBC.

**Keywords:** Competence-based curriculum; geography; challenge; teaching methods; teaching aids.

**How to cite:** Manirakiza, V., Bazimaziki, G., Imaniriho, D., Mukingambeho, D., Muhire, I., Nyirishema, M., Buhigiro, J. L. (2025). Challenges Facing the Implementation of the Competence- Based Curriculum in Geography Subject among Secondary Schools in Rwanda. East African Journal of Education and Social Sciences 6(3), 90-99. DOI: <https://doi.org/10.46606/eajess2025v06i03.0449>.

## Introduction

Education must focus not only on the transfer of knowledge but also on core competencies to allow learners to acquire knowledge independently, because ability and experience are what matter in performing social activities. Put simply, contemporary education should equip learners not just with information, but with the ability to apply knowledge in solving real-life challenges. In response to this need, the Rwanda Education Board (2015) introduced the Competence-Based Curriculum (CBC) to engage a dynamic and learner-centered education. This CBC is designed to ensure that school leavers have acquired practical competencies, essential for employment and participation at local, regional and global levels.

Competence refers to a combination of knowledge, skills and attitudes appropriate to the context of teaching and learning any specific subject (García de la Vega, 2022). According to Açıkgoz and Babadoğan (2021), CBE is characterized by outcome-oriented and learner-centered processes, that emphasize group-work, continuous assessment and flexible learning experiences. This approach enables learners to acquire relevant knowledge, skills and attitudes, aligned with real-world demands. As such, progression with CBE is determined by the learner's demonstrated competencies, but not by time spent in instruction.

According to the Ministry of Education/Rwanda Education Board (2015), Competence-Based teaching and learning emphasizes the development of specific measurable skills, going beyond the traditional focus on memorization and intellectual understanding to prioritize skill mastery. In other words, it focuses on what young people can do rather than just what they know (O' Sullivan & Burce, 2014). It takes learning to higher levels by providing challenging and engaging learning experiences, which require deep thinking rather than just memorization. According to Ogegbo et al. (2020), Competence-based Education primarily focuses on students' outcomes, especially the skills and abilities they can demonstrate upon completing the learning process.

According to Dwijendra (2021), Competence-Based Approach aims to cultivate learners into critical thinkers and problem solvers, but not just passive recipients of information without

awareness of its relevance and application. However, Tambwe (2017) notes that education that focuses on what students do, rather than what they learn about, faces significant challenges, including overcrowded classes, limited students' engagement, and inadequate institutional support.

Research (Risiro, 2022; Ahmed & Sayed, 2021) highlight time constraints and class sizes as key factors impeding CBE in Geography. Similarly, the effectiveness of teaching and learning within the CBC framework is strongly influenced by learners' and teachers' preparedness, competencies, engagement and commitment. A study conducted in Kenya by Ndambuki et al. (2024) reveals that while teachers are aware of the principles underpinning CBE, many lack professional training and adequate support. This gap significantly affects the quality of instructional practices and the overall implementation of the approach.

Tulegenovna et al. (2015) and Oyugi (2016) argue that competence-based teaching and learning integrates education with practical work to develop learners who continuously improve and apply the knowledge they have acquired. In other words, competence-based curriculum must be focused as it is organized around required competencies for practice; it is grounded in the empirically validated principle that students, when given appropriate instruction, can all master the prescribed performance outcomes (Kim, 2015). As a rule, competence-based teaching entails that meaningful learning occurs when learners can relate information to prior knowledge and experience.

Although the CBA has been recognized for its effectiveness, its implementation is affected by several factors related to didactics, students' and teachers' preparedness, and classroom environment (Diffang, 2019; Ndiokubwayo et al. 2020). Nombo (2022) highlights additional challenges that include shortage of CBC-aligned textbooks and teaching materials, inadequate infrastructure and limited financial support. Correspondingly, Ahmed and Sayed (2021) point to the time allocation, noting that competence-based training prioritizes the measurement of learning outcomes over the instruction duration. Thus, innovative education is not only a new way of teaching but also a new way of thinking (Tulegenovna et al.,

2015), especially in science subjects, without limitation to Geography. Kocalar and Demirkaya (2017) found out that Geography instruction is effective when grounded in narration and the question-answer method. Consequently, this actively engages learners and allows a better conceptual understanding.

In Rwanda, the implementation of competence faces major hurdles, notably the lack of teaching materials, laboratory equipment and teacher training (Nsengimana, 2021; Ndiwokubwayo et al., 2020) in addition to overcrowded classrooms, students' limited readiness and unclear assessment techniques. Based on the reviewed literature, the identified challenges impede the expected learning outcomes. Geography is no exception, as it demands active learner engagement in the construction and acquisition of knowledge through experiential and participatory methods.

## Methodology

### Design

The study adopted a survey research design alongside a quantitative framework. According to Owens (2002), one key advantage of the

survey approach is its potential to provide an unbiased representation of the target population, thereby enhancing the generalizability of the study findings.

### Population and Sampling

The study population comprised of Geography teachers from six schools selected based on institutional types and geographical location. According to Flinton (2020), effective sampling is essential for producing valid and reliable research outcomes. Accordingly, the six schools were purposefully sampled based on five criteria: public or private status, academic performance (excellence or ordinary), rural versus urban setting, with balanced representation across Rwanda's four provinces and Kigali City.

Table 1 presents the distribution of the 13 selected Geography teachers for the study: four teachers from a rural public school in Nyabihu district, one from an excellent rural school located in Musanze district, two from a public semi-urban school in Gasabo, and two from a school of excellence in the Nyarugenge urban area.

**Table 1: Sample Distribution**

| School Name  | Participants | Status            |               | Location   |          |
|--------------|--------------|-------------------|---------------|------------|----------|
|              |              | Private vs Public | Location area | District   | Province |
| GSMK         | 4            | Public ordinary   | Rural         | Nyabihu    | Western  |
| GSNDR        | 1            | Public excellence | Rural         | Musanze    | Northern |
| GSI          | 2            | Public ordinary   | Semi-urban    | Gasabo     | Kigali   |
| GSSA         | 2            | Public excellent  | Urban         | Nyarugenge | Kigali   |
| BLIS         | 3            | Private           | Semi-Urban    | Bugesera   | Eastern  |
| GAA          | 1            | Private           | Urban         | Muhanga    | Southern |
| <b>Total</b> | <b>13</b>    | <b>6</b>          | <b>6</b>      | <b>7</b>   | <b>4</b> |

For the private schools, four teachers were sampled: three from one school in Bugesera district, and one from Muhanga district.

### Instruments

Data was collected using a questionnaire administered to 13 teachers, purposefully selected to represent the broader population of interest. The questionnaire was chosen based on its relevance in gathering information most reliably and validly (Taherdoost, 2016). It also enables the researchers to generate context-

specific data and uncover insights that may not be available in secondary sources (O'Leary, 2014). The data was analyzed quantitatively, using descriptive statistics.

### Validity and Reliability

To ensure the validity and reliability of data, the research tool was submitted to experts in CBC for review and validation. To ensure consistency and accuracy in analysis, data was carefully treated using descriptive statistics generated from the participants' information.

## Ethical considerations

Participants were guaranteed that the information they provided would be used exclusively for research purposes, with full confidentiality maintained throughout the study. They were also informed of their right to withdraw at any stage without any consequences. Additionally, all sources used in this study were properly acknowledged.

## Results and Discussion

This section presents research findings in light of the research questions that guided the study.

**Research Question 1:** How far are teachers prepared to teach Geography using the CBC approach?

Generally, education policy in Rwanda requires two principal things for secondary school teachers (Ministry of Education, 2007). The first principle states that to become a lower secondary (Ordinary level) school teacher, a

person must gain entry into a national college of education (COE) after successfully completing upper secondary schooling and undertake a 2-year programme of training, including Teaching Practice. After successfully completing the program, the person will be awarded a Lower Secondary Teaching Diploma (LSTD). The second principle emphasizes that to become an upper secondary (Advanced level) teacher, one must have completed six years of secondary education and undertake a four year university program, including teaching practice.

Teachers' preparedness depends on the modalities they underwent in their education. Generally, teachers are required to be well prepared to use active teaching and learning techniques by adopting participatory and interactive methods that engage students in the learning process. Some active techniques considered effective in the CBC approach include, but are not limited to group work, role-play and questioning.

**Table 2: Education Background of Teachers**

| Teachers | Teachers' Qualification and Areas of Specialization |      |                   |      |                 |                |                             |    |                          |      |
|----------|-----------------------------------------------------|------|-------------------|------|-----------------|----------------|-----------------------------|----|--------------------------|------|
|          | Qualification                                       |      |                   |      |                 | Specialization |                             |    |                          |      |
|          | A1                                                  |      | Bachelor's Degree |      | Master's Degree |                | Geography without Education |    | Geography with Education |      |
| N        | F                                                   | %    | F                 | %    | F               | %              | F                           | %  | F                        | %    |
| 13       | 3                                                   | 23.1 | 9                 | 69.2 | 1               | 7.6            | 3                           | 23 | 10                       | 76.9 |

The major roles of teachers are to identify different competencies and to foster learning by engaging learners through inquiry, group discussions, research, investigative activities and individual work activities. Additionally, teachers must identify students' difficulties and develop appropriate strategies for learners with special needs, and address cross-cutting issues where applicable. Thus, the teacher is required to facilitate and guide the learning process (Rwanda Education Board, 2015b). That being the case, teachers should have a required educational background and the necessary skills to use the above-mentioned strategies in the learning process. Based on the above, the researchers assessed the background of geography teachers as presented in Table 2.

**Research Question 2:** How far are teachers trained on Geography CBC through pre-service and in-service approaches?

Table 3 presents pre-service and in-service training related to the teaching of Geography. As shown in the table, all the teachers (100%) maintained that pre-service training covered the application of CBC in teaching Geography. The majority of the teachers (92.3%) confessed to have received pre-service training related to the competence-based approach and principles. Moreover, quite above average (53.9%) teachers confirmed they had received the pre-training related to application of CBC in teaching and learning geography. The same number of teachers claimed to have received pre-training in the application of CBC in geography. These findings show that the teachers had been trained sufficiently to handle the CBC approach in Geography.

However, slightly less than half of the teachers (46.1%) had received in-service training on the application of the CBC in assessing geography. This suggests teachers were exposed to limited training during their in-service teaching period.

**Table 3: Training of Teachers**

| S/N | Category of Training                                                                            | N=13    |      |             |      |
|-----|-------------------------------------------------------------------------------------------------|---------|------|-------------|------|
|     |                                                                                                 | Trained |      | Not trained |      |
|     |                                                                                                 | f       | %    | f           | %    |
| 1   | Pre-service training related to application of CBC in teaching and learning Geography           | 13      | 100  | 0           | 0    |
| 2   | Pre-service training related to competence-based approach and principles                        | 12      | 92.3 | 1           | 7.7  |
| 3   | Pre-service training related to application of CBC in teaching and learning Geography           | 7       | 53.9 | 6           | 46.1 |
| 4   | Pre-service training related to application of CBC teaching and learning materials in Geography | 7       | 53.9 | 6           | 46.1 |
| 5   | In-service training related to application of CBC in assessing Geography                        | 6       | 46.1 | 7           | 53.9 |

**Table 4: Availability of Teaching and Learning Materials**

| Material types                                                | N=13      |      |               |      |
|---------------------------------------------------------------|-----------|------|---------------|------|
|                                                               | Available |      | Not available |      |
|                                                               | f         | %    | f             | %    |
| Measuring instruments                                         | 1         | 7.7  | 12            | 92.3 |
| Scientific journals                                           | 2         | 15.4 | 11            | 84.6 |
| Newspapers                                                    | 3         | 23.1 | 10            | 76.9 |
| Models from the local environment (rocks, minerals and soils) | 3         | 23.1 | 10            | 76.9 |
| Photographs (ground, aerial and oblique)                      | 5         | 38.5 | 8             | 61.5 |
| ICT hardware                                                  | 6         | 46.1 | 7             | 53.9 |
| Statistical and fieldwork materials                           | 6         | 46.1 | 7             | 53.9 |
| Diagrams                                                      | 7         | 53.8 | 6             | 46.1 |
| Reference books                                               | 9         | 69.3 | 4             | 30.7 |
| Maps of Rwanda                                                | 9         | 69.3 | 4             | 30.7 |
| Maps of the continents                                        | 11        | 84.6 | 2             | 15.4 |
| Globe                                                         | 11        | 84.6 | 2             | 15.4 |
| Textbooks                                                     | 12        | 92.3 | 1             | 7.7  |
| Atlas                                                         | 12        | 92.3 | 1             | 7.7  |
| Maps of the world                                             | 13        | 100  | 0             | 0    |

The findings further indicate that many teachers received at least two types of pre- service training, one related to the application of the CBC in teaching and another one related to CBA. Moreover, very few had received both the pre-service and the in-service training related to geography instruction. This implies a limited readiness and preparedness to implement the CBC in teaching Geography. If teachers are not readily prepared to implement the CBC, student learning outcomes will unlikely be achieved. This is according to Muchiri (2015), who argued that insufficiency or lack of in-service training on the CBC will hinder teachers from being conversant with its effective implementation.

**Research Question 3:** What is the relevance and suitability of teaching and learning materials that teachers apply in teaching Geography?

Table 4 displays the views of teachers about the availability of geography teaching and learning materials at their respective schools. All the 13 teachers (100%) affirmed that maps of the world were available in the schools while 12 teachers (92.3%) confirmed the availability of textbooks and atlases.

Furthermore, 11 (84.6%) affirmed that maps of continents and globes are available while nine (69.3%) attested the availability of maps of Rwanda and reference books. Seven (53.8%) confirmed the availability of diagrams at their schools while six (46.1%) confirmed the availability of ICT hardware (computers, video (audio-visual) clips, cameras, recorders, projectors, internet, radio, television, films, telephones) and statistical and fieldwork materials.

Only three teachers (23.1%) confirmed the availability of models from the local environment (rocks, minerals, soil samples) and newspapers. Only two (15.4%) teachers agreed that scientific journals are available at their schools and one (7.7%) reported the availability of measuring instruments (rain gauge, thermometer, barometer, hygrometer, wind vane, anemometer, compass, clinometers and GPS at his school.

These findings indicate that the most available teaching and learning materials in the six schools include maps of the world, textbooks, an atlas and maps of continents. Reportedly, materials in scarcity include diagrams, ICT hardware (Computers, video (audio-visual) clips, cameras, recorders, projector and internet, radio, television, films, telephones) and statistical and fieldwork materials, photographs (ground, aerial and oblique) and stationary (like manila papers, flip charts, black or white boards, chalks, drawing kit, etc.), newspapers and models from local settings (rocks, minerals,

soil samples), scientific journals and measuring instruments (rain gauge, thermometer, barometer, hygrometer, wind vane, anemometer, compass, cyclometers and GPS. This means that the schools experienced a scarcity of some required teaching and learning materials for geography, a big challenge that may impede the successful implementation of CBC in the geography subject.

**Research Question 4:** What are the challenges facing the teaching of Geography using the CBC approach?

This research question sought to establish challenges facing the geography teaching using the CBC. Table 5 shows that the majority of respondents (69.2%) considered lack of teaching materials as a challenge in teaching geography using the CBC approach. Other items in the table were not highlighted as challenges.

**Table 5: Challenges in Applying CBC in Teaching Geography**

| SN | Challenges                                  | N=13  |      |          |      |
|----|---------------------------------------------|-------|------|----------|------|
|    |                                             | Agree |      | Disagree |      |
|    |                                             | f     | %    | f        | %    |
| 1  | Limited teaching materials                  | 9     | 69.2 | 4        | 30.8 |
| 2  | Insufficient training in teaching Geography | 3     | 23.1 | 10       | 76.9 |
| 3  | Big class size                              | 3     | 23.1 | 10       | 76.9 |
| 4  | Lack of field trips (financial means)       | 2     | 15.3 | 11       | 84.7 |
| 5  | Overloaded (many teaching hours)            | 2     | 15.3 | 11       | 84.7 |
| 6  | Low participation of learners               | 1     | 7.6  | 12       | 92.4 |

**Table 6: Assessment Challenges in the use of CBC Approach**

| SN | Challenge                                          | N=13  |      |          |      |
|----|----------------------------------------------------|-------|------|----------|------|
|    |                                                    | Agree |      | Disagree |      |
|    |                                                    | f     | %    | f        | %    |
| 1  | English language barrier to learners               | 6     | 46.1 | 7        | 53.9 |
| 2  | Lack of training on assessment                     | 5     | 38.5 | 8        | 61.5 |
| 3  | Big number of learners                             | 4     | 30.7 | 9        | 69.3 |
| 4  | Different background for learners                  | 4     | 30.7 | 9        | 69.3 |
| 5  | Lack of enough time for many assessments           | 2     | 15.4 | 11       | 84.6 |
| 6  | Lack of facilities for learners with special needs | 1     | 7.7  | 12       | 92.3 |

Therefore, lack of or insufficient teaching materials hindered effective teaching of Geography using the CBC approach. According to Mugisha (2020), teaching Geography without the required materials and resources impacts students' learning and performance.

Table 6 indicates that a key issue in assessing learners is related to their poor English language skills (46.1%). Other challenges include teachers' poor assessment skills, large class sizes, which impede frequent

assessments. Teachers find it challenging to design time-consuming activities for feedback.

As illustrated in Table 7, the majority of the respondents (92.3%) did not consider most of the listed items to be significant challenges. However, the majority registered the fact that

limited teaching aids were a challenge related to the availability and use of teaching aids in supporting the CBC approach. This finding contrasts with Kocalar and Demirkaya (2017) who argued that effective teaching of Geography demands quality teaching materials.

**Table 7: Availability and Use of Teaching Aids**

| SN | Challenge                                | N=13  |      |          |      |
|----|------------------------------------------|-------|------|----------|------|
|    |                                          | Agree |      | Disagree |      |
|    |                                          | f     | %    | f        | %    |
| 1  | Limited teaching aids                    | 12    | 92.3 | 1        | 7.7  |
| 2  | Lack of skills to use teaching aids      | 3     | 23.1 | 10       | 76.9 |
| 3  | Lack of time to manipulate teaching aids | 1     | 7.7  | 12       | 92.3 |
| 4  | Lack of awareness of some teaching aids  | 1     | 7.7  | 12       | 92.3 |

**Table 8: School Administration Challenges**

| S/N | Challenge                               | N=13  |      |          |      |
|-----|-----------------------------------------|-------|------|----------|------|
|     |                                         | Agree |      | Disagree |      |
|     |                                         | f     | %    | f        | %    |
| 1   | Lack of budget for teaching materials   | 9     | 69.3 | 4        | 30.7 |
| 2   | Teachers' lack of time for research     | 4     | 30.7 | 9        | 69.3 |
| 3   | Lack of accountability                  | 3     | 23.1 | 10       | 76.9 |
| 4   | Lack of ICT tools                       | 1     | 7.7  | 12       | 92.3 |
| 5   | Not prioritize some academic activities | 1     | 7.7  | 12       | 92.3 |

**Table 9: Students' Engagement and learning Environment Challenges**

| SN | Challenge                               | N=13  |      |          |      |
|----|-----------------------------------------|-------|------|----------|------|
|    |                                         | Agree |      | Disagree |      |
|    |                                         | f     | %    | f        | %    |
| 1  | Lack of budget for field trip           | 4     | 30.7 | 9        | 69.3 |
| 2  | Teachers' poor salaries                 | 2     | 15.4 | 11       | 84.6 |
| 3  | Little attention to academic activities | 2     | 15.4 | 11       | 84.6 |
| 4  | Lack of budget for teaching material    | 2     | 15.4 | 11       | 84.6 |

In Table 8, school administration was reported to be involved in the factors impeding the application of the CBC in Geography. Participants above average (69.2%) revealed that the leading challenge related to school administration is associated with teachers' lack of budget to buy teaching materials, including ICT gadgets. Another challenge is teachers' lack of time for research as revealed by some (30.7%) teachers, which consequently affects their readiness to carry out teaching effectively. The least reported challenges include a lack of

ICT tools (7.7%) and limited prioritization of some academic activities (7.7%).

Table 9 shows that teachers identified a lack of budget (30.7%) to support the implementation of geography CBC as the major challenge. Poor payment, little attention to academic activities (15.4%) and lack of budget for teaching materials (15.7%) were reported as financial challenges. According to Leščešen et al. (2021), teaching geography in the context of CBC is hard when classrooms are not optimally equipped with the required materials. Therefore,

it is essential to improve learning environment to realize the CBC initiatives.

As shown in Table 10, applying CBC in Geography is significantly impeded by factors, such as teachers' limited training (92.3%).

**Table 10: Training and Skills Challenges**

| S/N | Challenges                                         | N=13  |      |          |      |
|-----|----------------------------------------------------|-------|------|----------|------|
|     |                                                    | Agree |      | Disagree |      |
|     |                                                    | f     | %    | f        | %    |
| 1   | Teachers' lack of training                         | 12    | 92.3 | 1        | 7.7  |
| 2   | Students' general academic knowledge               | 10    | 76.9 | 3        | 23.1 |
| 3   | Teachers' lack of skills to apply CBC in Geography | 2     | 15.4 | 11       | 84.6 |
| 4   | Students' language barrier (MI)                    | 2     | 15.3 | 11       | 84.7 |
| 5   | Students' different background                     | 1     | 7.7  | 12       | 92.3 |
| 6   | Students' low motivation                           | 1     | 7.7  | 12       | 92.3 |
| 7   | Students' lack of sign language use                | 1     | 7.7  | 12       | 92.3 |
| 8   | School size                                        | 1     | 7.6  | 12       | 92.3 |

In contrast, research (Kalu et al. 2023; Makhatini, 2018) suggests that quality and regular training in competency-based education are essential in Geography CBC. In addition, students' general academic knowledge (76.9%) was identified as a key challenge.

## Conclusions and Recommendations

### Conclusions

Considering the findings, the study concludes that numerous challenges face the implementation of the CBC in Geography. These challenges are related to school facilities and resources, teachers' readiness and students' behaviour and capacity to embrace the Competence-Based Approach. The CBC implementation was impeded by such factors as lack of relevant equipment, as well as students and teachers' lack of preparedness. The implementation of the CBC was hard due to students' difficulties in English as the language of instruction in the Rwandan education system.

### Recommendations

In light of the conclusions, the study recommends that school managers provide materials for effective implementation of the CBC, particularly in the Geography subject. Regular training in the CBC approach should be planned for teachers to be conversant with it. The issue of students' limited proficiency in the English language should be addressed, as it is both a recommended medium of instruction and a scientific language for scientists to connect with others globally.

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