Exploring New CBA Methodological Approach in Teaching Geography in Cameroon Secondary Schools: Geography Examiner's Perceptions in Cameroon

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ABSTRACT

This study investigates Geography examiners' perceptions of the new Competency-Based Approach (CBA) for teaching Geography in Cameroonian secondary schools. Employing a mixed-methods design, the research analyzed curriculum documents, examined national Geography examination results from 2020 to 2025, and collected survey data from 222 examiners across Cameroon. The findings reveal that 87.5% of participant's experience significant challenges in applying current CBA teaching methods, largely due to a substantial knowledge gap and confusion surrounding practical pedagogical practices. A key obstacle identified is the limited awareness and use of innovative, active CBA strategies, underscoring the urgent need for targeted professional development. Based on these insights, the study recommends integrating two American competency-based teaching methods Hack Mindset and Project-Based Learning (PJBL) to restructure and enhance the current CBA framework. It emphasizes that addressing systemic barriers such as resource shortages and insufficient training through sustained professional development is vital for effective implementation, ultimately fostering learners' life skills and better preparing them for environmental, physical, and societal challenges in Cameroon.

Keywords: Competency-Based Approach, Hack Mindset, Problem-Based Learning, Geography Education,

INTRODUCTION

The geography curriculum in Cameroon has undergone significant transformations since 1978, with a focus on promoting excellence in secondary education. The introduction of the new harmonized national pedagogic teaching schemes of work for the first and second cycles in geography has been guided by the Ministry of Secondary Education (MINESEC; 2015 & 2019). The ultimate goal is to achieve the challenging objectives of the 21st century, as outlined in Cameroon's Emerging Vision 2035. In 2012, the Competency-Based Approach (CBA) was introduced in the first cycle, followed by its introduction in the second cycle in 2015. This marked change in Cameroon's educational landscape call for a paradigm shift from traditional teaching methods into more research in participatory and innovative teaching methods and approaches, known as Learner-Centred Pedagogy (LCP). Despite this pedagogical innovation, there is a lingering concern regarding the identification of appropriate CBA teaching methods for geography in Cameroon's secondary schools. The lack of clarity on suitable CBA teaching methods has resulted in teachers struggling to adapt to the new dispensation. Consequently, learners face difficulties in acquiring knowledge, skills, and competencies necessary for identifying and solving real-life future environmental, physical and human challenges. This study aims to investigate geography Examiners' perceptions of appropriate CBATMs, specifically Hack Mindset and Problem-Based Learning methods, in order to address this knowledge gap. The study seeks to address the following **research problem:** Despite the introduction of CBA in geography education in Cameroon, there are no clear defined appropriate teaching methods, resulting in teachers' difficulties in adapting to the New Competency Based Pedagogic (NCBP). Teachers finds it difficult to choose from existing OBA teaching methods and techniques in remitting geography knowledge, skills and competences to learners. This **study hypothesizes** that many geography teachers are not using appropriate CBA teaching methods due to limited reorganization, and if

confirmed, highlights the need for Teachers' Training Institutions in Cameroon to equip student teachers with competencies, skills, and attitudes using Hack Mindset and Problem-Based Learning methods.

REVIEW OF LITERATURE

History and Origin of Hack Mindset and Problem Based Learning

The integration of innovative pedagogical approaches in geography education has gained significant attention in recent years. This literature review explores the potential of Hack Mindset and Problem-Based Learning (PBL) methods in teaching Contemporary Environmental Issues (CEI) in geography education. **Hack Mindset Method (HMM),** a pedagogical approach rooted in Deeper Learning, emphasizes student-centered learning, critical thinking, and problem-solving (Hewlett Foundation, 2013). Mark Hofer and Lindy L. Johnson (2017) define Hack Mindset as an effective Competency-Based Teaching Method (CBTM) that guides students in using real-life situations to develop their potentials, skills, and values. The approach employs three key strategies: Bia**s to Action, Fail Forward, and Start Small** (Tom Vander Ark, 2015). **Problem-Based Learning (PBL),** a curriculum development method and instructional approach, challenges students to work collaboratively in small groups to find solutions to real-world problems (Walsh, 2005). PBL originated in the 1970s as a reaction to traditional educational approaches, which were deemed inadequate for preparing students for clinical practice (Barrows, 2002). Aidyn Intykbekov (2017) notes that PBL is perceived as a beneficial teaching approach that increases student engagement and helps them understand subject content more deeply. Project-based learning (PBL) is a pedagogical approach that emphasizes student-centered learning, critical thinking, and problem-solving skills. This article reviews the literature on PBL and cooperative teaching methods, highlighting their relevance to teaching CEI. PBL is a teaching method that involves students working on real-world problems or complex questions over an extended period (Buck Institute for Education, 2019). This approach fosters critical thinking, creativity, communication, and collaboration skills (Gold Standard PBL model, 2019). This method involves Cooperative teaching involves collaboration between two or more teachers or experts to achieve specific learning objectives (Bauwens & Hourcade, 1991). This approach combines the strengths and resources of multiple professionals, supporting instruction and classroom management (Arnold, 1988). Bauwens and Hourcade's (1994) Five P's of co-teaching provide a framework for effective cooperative teaching: Presence, Planning, Presenting, Processing, and Problem-solving. These elements ensure that co-teaching is a collaborative and reflective process. Cooperative teaching offers several advantages, including combining the strengths and resources of multiple professionals, supporting instruction and classroom management, and promoting mutual accountability and shared instructional responsibility (Johns & Dudley-Evans, 1980). This approach also fosters interpersonal relationships, resilience, and positive attitudes towards issues and people. Despite its advantages, cooperative teaching has some limitations. For example, it may require significant time commitments from teachers and may not be suitable for all learning contexts (Morray, 1980). PBL and cooperative teaching offer a promising approach to teaching Geography. By engaging students in real-world environmental problems, PBL fosters critical thinking, creativity, and problem-solving skills. Cooperative teaching, on the other hand, provides a framework for collaboration between teachers and experts, promoting mutual accountability and shared instructional responsibility. Conclusively, PBL and cooperative teaching are effective pedagogical approaches to teaching geography. By combining these approaches, educators can create engaging and interactive learning environments that foster critical thinking, creativity, and problem-solving skills. Comparative analysis of Hack Mindset and PBL show that both Hack Mindset and PBL emphasize student-centered learning and problem-solving, they differ in their approach. Hack Mindset focuses on developing students' potentials, skills, and values through real-life situations, whereas PBL emphasizes collaborative problem-solving and critical thinking. A comparative analysis of these methods can provide insights into their effectiveness in teaching geography.

Theoretical and Conceptual Frameworks

Theories underlying Hack Mindset and PBL include Constructivist Learning Theory (CLT), which posits that learners construct knowledge through experience and social interaction (Vygotsky, 1978). Additionally, the Deeper Learning framework, which emphasizes critical thinking, problem-solving, and collaboration, provides a foundation for both Hack Mindset and PBL (Hewlett Foundation, 2013). This study is grounded in two theoretical frameworks: Experiential Learning Theory (ELT) and Constructivist Theory (CT). These frameworks

provide a foundation for understanding the effectiveness of Hack Mindset and Problem-Based Learning methods in teaching Contemporary Environmental Issues (CEI) in geography education. **Experiential Learning Theory,** developed by Kolb & Kolb (2012), posits that learning occurs through direct experience and reflection. This theory suggests that learners acquire knowledge and skills through active engagement with their environment (Dewey, 1897; Lewin, 1951; Piaget, 1984). ELT emphasizes the importance of hands-on experience, experimentation, and feedback in the learning process. **Constructivist Theory**, rooted in the works of Bruner, Dewey, and Vygotsky, asserts that learners construct their own knowledge and meaning through experience and social interaction (Harrigan, 2021; Ertmer & Newby, 1993). This theory recognizes that learners bring their prior knowledge and experiences to the learning environment and that they actively construct new knowledge through engagement with their peers, teachers, and environment. There are three primary types of constructivism: **1. Cognitive Constructivism:** Focuses on the learner's cognitive development and the process of constructing knowledge through individual experiences (Piaget, 1984). **2. Social Constructivism:** Emphasizes the role of social interactions, culture, and society in shaping the learner's construction of knowledge (Vygotsky, 1978). **3. Radical Constructivism:** Suggests that knowledge is invented, not discovered, and that learners' constructions of reality are unique and subjective (Von Glasersfeld, 1974). The combination of Experiential Learning Theory and Constructivist Theory provides a theoretical foundation for the Hack Mindset and Problem-Based Learning methods. These methods, which emphasize active learning, collaboration, and problem-solving, align with the principles of ELT and CT. By leveraging these theories, educators can create learning environments that foster engagement, creativity, and critical thinking.

The conceptual framework of this study is grounded in Carol Dweck's Mindset Theory, which posits that individuals possess either a fixed mindset or a growth mindset (Dweck, 1970, 2006). This theory is integrated with the concept of Hack Mindset, a teaching approach that emphasizes creativity, critical thinking, and problem-solving. **A fixed mindset** is the belief that intelligence and abilities are innate and unchangeable (Dweck, 1970). Individuals with a fixed mindset tend to avoid challenges, fear failure, and believe that success is solely dependent on innate talent. In contrast, **a growth mindset** is the belief that intelligence and abilities can be developed through effort, learning, and persistence (Dweck, 2006). Individuals with a growth mindset embrace challenges, persist in the face of obstacles, and believe that success is achievable through hard work and dedication. Hack Mindset is a teaching approach that integrates the principles of growth mindset, creativity, critical thinking, and problem-solving (Linkner, 2017). This approach encourages learners to think creatively, challenge assumptions, and develop innovative solutions to real-world problems. The Hack Mindset approach is integrated with Problem-Based Learning (PBL), which involves presenting learners with real-world problems that require critical thinking, creativity, and problem-solving skills (Hofer & Johnson, 2017). This integrated approach enables learners to develop a deeper understanding of the subject matter while cultivating essential skills for the 21st century.

Teaching CEI requires innovative approaches to foster critical thinking, creativity, and problem-solving skills. This article reviews various methods, approaches, models, perceptions, that can be integrated with Hack Mindset and Problem-Based Learning (PBL) methods to promote effective teaching and learning of CEI. **Traditional approaches** to teaching CEI often focus on transmitting knowledge through lectures, emphasizing scientific processes, and promoting awareness of environmental issues (Karin Kirk, 2007; Schweizer & Kelly, 2005). However, these approaches may not be sufficient to foster critical thinking, creativity, and problem-solving skills required to address complex environmental issues. **Constructivist approach** emphasizes student-centered learning, where students actively construct their knowledge through experiences, social interactions, and reflection (Lerman, 1989; Jonassen, 1991). This approach is aligned with the principles of Hack Mindset and PBL, which emphasize creativity, critical thinking, and problem-solving skills. **PBL approach** involves presenting students with real-world problems that require critical thinking, creativity, and problem-solving skills (Hofer & Johnson, 2017). This approach is effective in developing students' ability to investigate environmental issues, evaluate alternative solutions, and take action to address these issues. **Hack Mindset** is a teaching approach that emphasizes creativity, critical thinking, and problem-solving skills (Linkner, 2017). This approach involves encouraging students to think creatively, challenge assumptions, and develop innovative solutions to real-world problems. The integration of Hack Mindset and PBL approaches provides a comprehensive framework for teaching geography. By fostering a growth mindset, encouraging creativity and critical thinking, and presenting students with real-world problems, educators can create an engaging and effective learning

environment. Conclusively, teaching geography requires innovative approaches that foster critical thinking, creativity, and problem-solving skills. The integration of Hack Mindset and PBL approaches provides a comprehensive framework for teaching geography. By adopting these methods and approaches, educators can promote favorable environmental behavior in students, develop their ability to investigate complex physical and human problems, and foster a growth mindset that enables them to address complex geography.

General Perception of CBA Teaching Methods in Education and CEI

Teacher accountability is crucial in education policy, emphasizing collaboration to ensure student success (Datnow, 2011). Teachers' attitudes toward collaboration influence their perceptions of accountability. Datnow (2011) highlights the importance of teacher collaboration and camaraderie in school improvement. However, Charles and Dickens (2012) note that co-teaching situations pose challenges, including lack of administrative support, professional development, and committed scheduling time. Competency-Based Education (CBE) emerged in the US in the 1970s, emphasizing measurable learning outcomes (Guskey, 2005). CBA focuses on learners demonstrating mastery of content to earn credit (USA Department of Education, 2011). In Cameroon, the shift from Objective-Based Approach (OBA) to CBA requires adjustments in teaching methods, materials, and assessment strategies (Tabe, 2019). Effective implementation of CBA necessitates a learner-centered approach, emphasizing individualized instruction and flexible learning time (Field & Drysdale, 1991). CBE involves students demonstrating mastery of content to earn credit, focusing on measurable learning outcomes (Guskey, 2005). In geography, CBE can be applied using Hack Mindset teaching approaches, emphasizing problem-solving and critical thinking (Musi, 2023). Teachers must adapt their roles, switching from experts to facilitators guiding students' learning processes (Biemans et al., 2004). Challenges in implementing CBA include lack of teacher training, inadequate materials, and large class sizes (Mahamat, 2011). Assessment and classroom management also pose difficulties (Aschcraft, 1994). Additionally, teachers may struggle to adapt to new roles and responsibilities (Jellema, 2003). Problem-solving teaching approaches, such as discovery and inquiry techniques, emphasize critical thinking and problem-solving skills (Oldridge, 2017). These approaches encourage learners to engage in intentional learning, developing knowledge and skills through supervised problem-solving (Cai & Lester, 2010). In geography, problem-solving approaches can enhance geography learning outcomes, promoting critical thinking and real-world applications.

Operationalized Definitions and Research Questions

For the purpose of this study, Hack Mindset is defined as a pedagogical approach that employs real-life situations to develop students' potentials, skills, and values. Problem-Based Learning is defined as a curriculum development and instructional approach that challenges students to work collaboratively in small groups to find solutions to real-world problems. The integration of Competency-Based Approach (CBA) in geography education in Cameroon has created a need for innovative teaching methods that can effectively teach geography and Contemporary Environmental Issues (CEI). However, there is a gap in the literature on the perceptions of geography teachers on the use of new CBATM in teaching geography. This study aims to explore new CBATM in teaching geography and related branches. **The study seeks to answer the following research questions:** What are the current perceptions and experiences of geography examiners in Cameroon regarding the implementation of CBA based geography teaching in secondary schools? Which new CBATMs do geography teachers in Cameroon believe are most aligned with the principles of CBA, and to what extent are these methods presently being employed by teachers, according to examiners? What are the perceived needs of geography teachers, as identified by examiners, to support the effective implementation of CBATMs?

METHODOLOGY AND PROCEDURE

This mixed-methods research was designed to explore Geography examiners' perceptions of the implementation of Competency-Based Teaching Approaches and Methods (CBTAM) in the teaching of Geography in secondary schools across Cameroon. A cross-sectional survey design was employed. A total of **150 respondents** were purposively and conveniently selected from a pool of **222 Geography examiners** drawn from **155 Government Bilingual High Schools** out of a total of **200 public schools** and **45 private schools** across Cameroon's ten regions. The selection criteria included the following:

1. Examiners with teaching experience in Government Secondary Schools in Cameroon.
2. Examiners who had marked the **GCE Advanced Level Geography examinations**.
3. Examiners who participated in the **2023-2025 GCE marking sessions**.

Public school examiners were deliberately targeted to examine the extent to which the Government of Cameroon and educational stakeholders have supported teacher training and the modification of existing CBA teaching methods in Geography. Furthermore, the majority of the selected examiners possessed **First Grade (DIPES I)** or **Second Grade (DIPES II)** professional qualifications, having been trained under government programs. Data were collected from examiners present at the marking centers during the period of the study. The primary data collection instrument was a **semi-structured questionnaire** comprising both closed and open-ended items. The questionnaire consisted of **four sections**: **Demographic information** of respondents; **Training on the CBA** and challenges faced in implementing existing CBTM in teaching Geography; **Knowledge and experiences** related to the adoption of CBATMs; and **Professional development and pedagogic support** required for adopting innovative CBATMs.

A **pilot test** was conducted to determine the reliability of the instrument. The questionnaires were administered in various Geography marking halls during the **2024-2025 marking session**, with assistance from research assistants and chief examiners. Respondents were given the choice to complete the questionnaire on-site or take it home and return it the following day. Participation was voluntary, and confidentiality was assured. Collected data were analyzed using **descriptive statistical techniques**, specifically **frequency counts and percentages**. The findings are expected to contribute to improving CBA teaching methodologies, inform teacher training initiatives, and strengthen professional development programs in Geography education across Cameroon.

Table 1. Distribution of geography examiners according to 10 Regions of Cameroon

Region	**Total Examiners per Region**	**Examiners Select each Region to sample**	**Percent (%)**
Adamawa	13	09	06
Centre	23	15	10
East	10	07	4.6
Far North	12	08	5.6
Littoral	30	21	14
North	14	10	6.6
North West	43	28	18.6
South	16	11	7.3
South West	41	27	18
West	20	14	9.3
Total	**222**	**150**	**100**

Table 2. Distribution of geography examiners according to qualification in 10 Regions of Cameroon

Qualification	**Frequency**	**Percent (%)**
DIPES I	33	22

DIPES II	92	61.3
Others (First Degree, Master and PHD)	25	16.7
Total	**150**	**100**

Table 3. Distribution of Examiners according to Years Teaching or Marking GEC Advanced Level

Longivity Teaching and Marking	**Years of Teaching and Marking GCE Advanced Level**	**Frequency**	**Percent (%)**
Old Examiners	More than 5years	74	49.3
Current Examiners	Less than 5years	47	31.3
New Examiners	1 year	29	19.4
Total	-	**150**	**100**

Table 4. Distribution of Schools according to Regions from Sample Examiners

Status	**Frequency**	**Percent (%)**
Government Schools	136	90.6
Private Schools	14	9.4
Total	**100**	**100**

RESULTS AND FINDINGS

Research Question One: What are the current perceptions and experiences of geography examiners in Cameroon regarding the CBA training and implementation. **Table 5.** *Geography Examiners' responses on their training and implementation CBA*

Knowledge on Training and Implementation CBA	**Agree**	**Percent(%)**	**Disagree**	**Percent (%)**
I have knowledge of CBA	125	**83.3**	25	**16.7**
I was introduction to CBA during training in school	110	**73.3**	40	**26.7**
I was trained on how to use the CBA in teaching geography in training school	82	**54.6**	68	**45.3**
I have been attending CBA pedagogic conferences and seminars .	76	**50.6**	74	**49.4**
I have been participating in workshops on the use in teaching geography	61	**50.7**	89	**59.3**
My school encourage CBA pedagogic seminars and workshops	80	**57.3**	70	**42.7**
I read literature on CBA	49	**32.6**	101	**67.4**

The findings presented in Table 5 reveal several key insights regarding the respondents' familiarity and engagement with the Competency-Based Approach (CBA) in Cameroon. Approximately 83.3% of the

examiners' respondents demonstrated some knowledge of what CBA entails, indicating a substantial awareness of the approach. Additionally, about 73.3% of respondents were in training schools when CBA was officially introduced into secondary education in Cameroon. However, only 54.6% of the respondents reported having received specific training on how to implement CBA in teaching geography while they were in training school. Furthermore, more than half of the respondents (50.6%) indicated that they have attended conferences, seminars, and workshops aimed at enhancing their knowledge and skills related to CBA in geography instruction. Regarding institutional support, a significant majority (57.3%) of respondents stated that their schools organize seminars and workshops to improve their understanding and application of CBA in teaching geography. Conversely, a relatively small percentage (32.6%) of the examiners reported that they have read literature on CBA to enhance their knowledge and skills in this area. Overall, these results suggest a reasonable level of awareness and some ongoing professional development among geography teachers in Cameroon concerning the use of CBA. Nonetheless, there remains room for improvement, particularly in encouraging teachers to engage more actively with literature and self-directed learning to deepen their understanding of this instructional approach.

Rating of Geography Examiners Knowledge on Training and Implementation CBA.

The geography examiners were asked to rate the level of their knowledge on training and implementation new CBATM, the statistics are presented on table 6 and figure 1.

Table 6. Frequency distribution of geography examiners' ratings on their knowledge on the use of CBA in teaching Geography.

Knowledge	**Frequency**	**Percent (%)**
Very High	14	9.3
High	56	37.3
Moderate	67	44.6
Low	13	8.8
Total	**150**	**100**

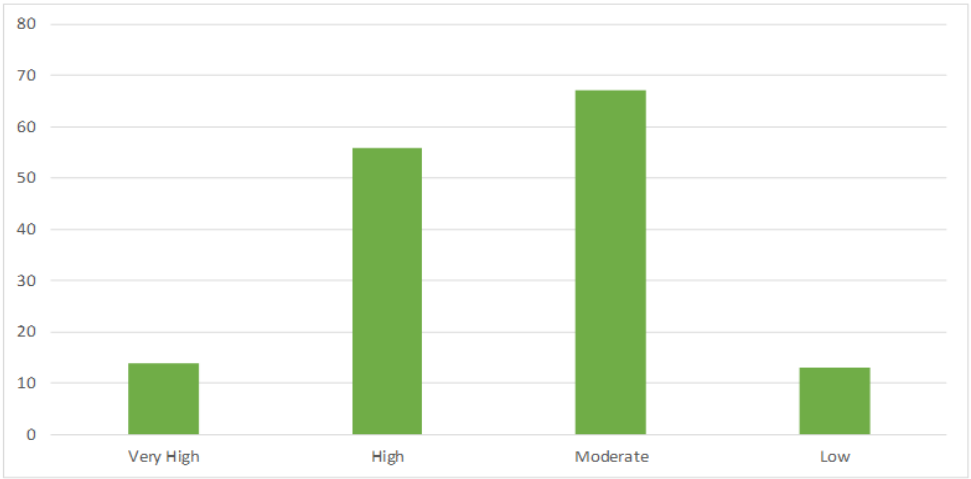

Figure 1. Geography Examiners' ratings on their Knowledge of CBA in the teaching of geography.

The findings presented in Table 6 and Figure 1 reveal the distribution of teachers' self-rated knowledge levels regarding the use of Competency-Based Approach (CBA). Specifically, a small proportion of respondents (9.3%) rated their knowledge as very high. A larger segment (37.3%) perceived their knowledge as high, while the majority (44.6%) considered them

knowledge to be moderate. A minor fraction (8.8%) reported low knowledge levels. These results suggest that most teachers perceive their understanding of CBA to be moderate to high, with only a small percentage indicating very high knowledge.

Research Question Two: What new CBATMs do geography teachers in Cameroon believe are most aligned with the principles of CBA, as reported by examiners?

CBATMs	**Frequency of Examiner endorsing**	**Percent (%)**
Problem Based Learning (PBL)	21	**14**
Project Based Learning (PJBL)	39	**26**
Collaborative Group Work (CGA)	15	**10**
Technology and Digital Tools (TDT)	12	**8**
Field and Practical Activities (FPA)	20	**13.3**
Hack Mindset (HM)	45	**28.7**
Total	**150**	**100**

Table 7. Distribution of CBATMs believed to be most aligned with CBA principles Cameroon, as reported by *examiner in teaching geography.*

The survey results on CBATMs reveal several noteworthy insights. The most prominent response was the "Hack Mindset," accounting for 28.7% of the responses, highlighting a strong interest in innovative thinking and problem-solving skills among participants. Following this, "Project-Based Learning" received 26%, indicating a significant emphasis on experiential and hands-on learning approaches. "Problem-Based Learning" was also notable, representing 14% of the responses. Other responses included "Collaboration and Group Work" at 10%, "Field and Practical Activities" at 13.3%, and "Technology and Digital Tools" at 8%. Overall, these results suggest a clear focus on fostering creativity, practical skills, and collaborative problem-solving in the learning environment. **Table 8.** *Distribution of Examiner's Perception of the effectiveness of these methods is aligned with CBA principles in teaching geography Cameroon.*

CBATMs	Frequency of Examiner endorsing	**Very Effective (%)**	Frequency of Examiner endorsing	**Effective (%)**	Frequency of Examiner endorsing	**Less effective (%)**	Frequency of Examiner endorsing	**Not effective (%)**	Total Examiners	**Total %**
Problem Based Learning (PBL)	60	**40**	59	**36**	15	**15.3**	12	**8.7**	150	**100**
Project Based Learning (PJBL)	63	**42**	54	**39.3**	23	**10**	12	**8.7**	150	**100**
Collaborative Group Work (CGC)	45	**33.5**	73	**48.6**	16	**10.6**	11	**7.3**	150	**100**

Technology and Digital Tools (TDT)	41	**27.3**	53	**35.3**	28	**18.6**	21	**18.4**	150	**100**
Field and Practical Activities (FPA)	71	**47.3**	39	**26**	19	**12.6**	16	**14.9**	150	**100**
Hack Mindset (HM)	80	**53.3**	31	**20.1**	27	**18**	12	**8.6**	150	**100**

The examiner perceptions of the effectiveness of CBATMs in geography education in Cameroon reveal that Project-Based Learning (PBL) is regarded as very effective by 42% of respondents, with 39.3% considering it effective, while 10% view it as less effective and 8.7% see it as not effective. Problem-Based Learning is similarly perceived, with 40% rating it as very effective, 36% as effective, 15.3% as less effective, and 8.7% as not effective. Collaborative group work is viewed as very effective by 33.5%, effective by 48.6%, less effective by 10.6%, and not effective by 7.3%. Technological and digital tools are perceived as very effective by 27.3% and 35.3%, respectively, with 18.6% considering them less effective and 18.4% viewing them as not effective, though there appears to be a typographical error in the data. Field and practical activities are highly rated, with 47.3% perceiving them as very effective, 26% as effective, 12.6% as less effective, and only 14.9% as not effective. The Hack Mindset stands out as the most highly regarded, with 53.3% of examiners considering it very effective, 20.1% as effective, 18% as less effective, and 8.6% as not effective. Overall, the highest perceived effectiveness is attributed to the Hack Mindset, followed by field work and practical activities, indicating strong support for innovative and hands-on approaches in geography teaching in Cameroon.

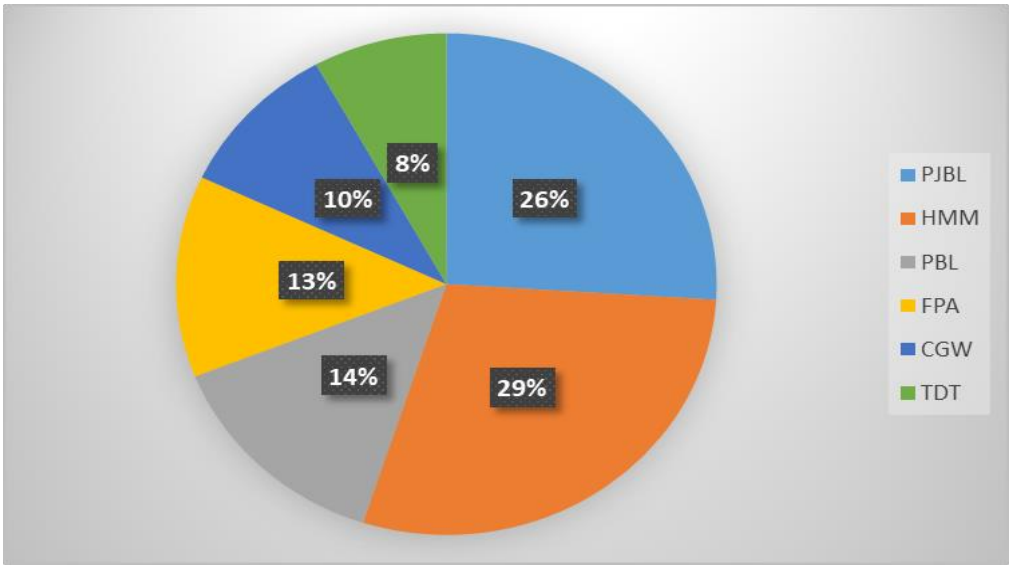

Figure 2 Examiners responses on alignment of CBATMs with CBA principles in the teaching geography.

The findings presented in Figure 2 reveal that geography teachers in Cameroon predominantly favor the Hack Mindset Method (HMM) and Project-Based Learning (PJBL) as teaching methods most aligned with the principles of the Concept-Based Approach (CBA). Specifically, 29% of teachers identified HMM as the most suitable method, while 26% preferred PJBL. Additionally, examiners also recognized a strong alignment between HMM and CBA principles, suggesting that this method is widely regarded as effective for fostering conceptual understanding in geography. In contrast, other teaching methods such as Problem-Based Learning (PBL), Field and Practical Activities (FPA), Collaborative Group Work (CGW), and the use of Technology and Digital Tools (TDT) are perceived as less effective in promoting CBA principles. These methods received lower endorsement rates of 14%, 13%, 10%, and 8%, respectively, from examiners' evaluations. Overall, these results underscore a clear preference among geography teachers for innovative, student-centered approaches like HMM and PJBL, which are viewed as more conducive to the conceptual and inquiry-based nature of CBA. Conversely, traditional or less interactive methods are seen as less aligned with the pedagogical goals of fostering deep conceptual understanding in geography education. This trend reflects a shift towards more engaging and participatory teaching strategies that emphasize active learning and critical thinking.

Research Question 3: How do geography examiners perceive the implementation of the new CBA teaching methodology?

Table 9. Frequency distribution of Geography examiners' responses on whether they face challenge select CBATMs in teaching geography.

Challenge select CBATMs in Teaching Geography	**Responses**	**Frequency**	**Percent (%)**
Are there challenges faced select CBATMs	Yes	110	**73.3**
	No	26	**17.3**
	Mixed feelings	15	**9.4**
Total	-	**150**	**100**

Reasons for difficulty in adopting new CBATMs	**Frequency**	**Percent (%)**
Proposed CBATMs align with classroom practice	14	**9.4**
Teachers rely on traditional OBATMs	48	**32**
Teachers lack knowledge of modern CBATMs	37	**24.6**
Teachers confusing between CBA Teaching Methods, CBA Teaching Approaches and CBA Teaching Techniques	51	**34**
Total	**150**	**100**
Teaching Methods Used in recent Geography	**Frequency**	**Percent (%)**
OBA Teaching Methods	115	**76.6**
CBA Teaching Methods	35	**23.4**
Total	**150**	**100**

A significant majority 73.3%, face challenges in selecting CBA teaching methods, with only 17.3% reporting no challenges and 9.4% expressing mixed feelings. Most geography teachers predominantly use OBA methods 23.4%. The main difficulties in adopting CBATMs include confusion over the methods 34%, lack of knowledge 24.6%, reliance on traditional OBA approaches 32%, and the need for CBATMs to align with classroom practices 9.4%.

Table 10. Frequency distribution of Geography examiners' responses on whether they need for pedagogic supports for effective implementation New CBATMs in teaching geography.

Needs for Pedagogic Supports	**Frequency**	**Percent (%)**
Agree	121	**80.6**
Disagree	14	**9.4**
Others	15	**10**
Total	**150**	**100**

Additionally, a large majority 80.6% express a need for pedagogic support to facilitate the adoption of New CBATMs, 9.4% disagree and others 10%.

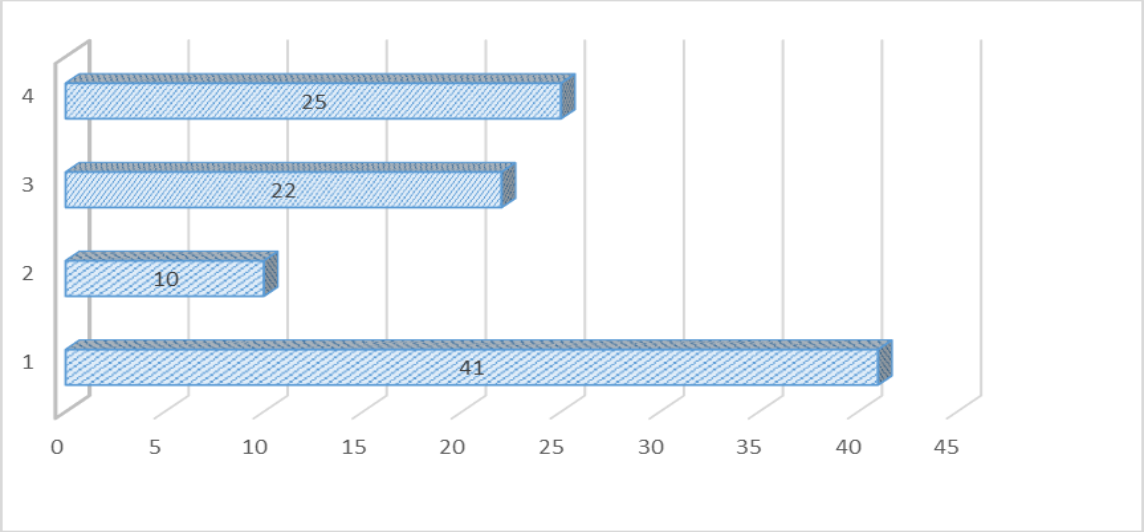

Figure 3. Frequency on they need for pedagogic supports for effective implementation New CBATMs, CBATAs and CBATTS in teaching geography.

The survey results indicate that the Development New Methodology (DNM) Figure 4 is regarded as the most critical factor for the effective implementation of CBATMs, CBATAs, and CBATTS in teaching geography, with 41% of examiners identifying it as a priority. Following this, 25% of respondents emphasize the significance of Understanding the new CBA teaching methodology (UNM). Training and Professional Development (TPD) is considered important by 22% of respondents. A smaller segment, 10%, focuses on Participatory Pedagogic Development (PPD), highlighting the need for acquiring practical skills essential for CBATMs effectiveness. Overall, these findings underscore the importance of adopting innovative methodologies and ongoing professional development to enhance geography teaching.

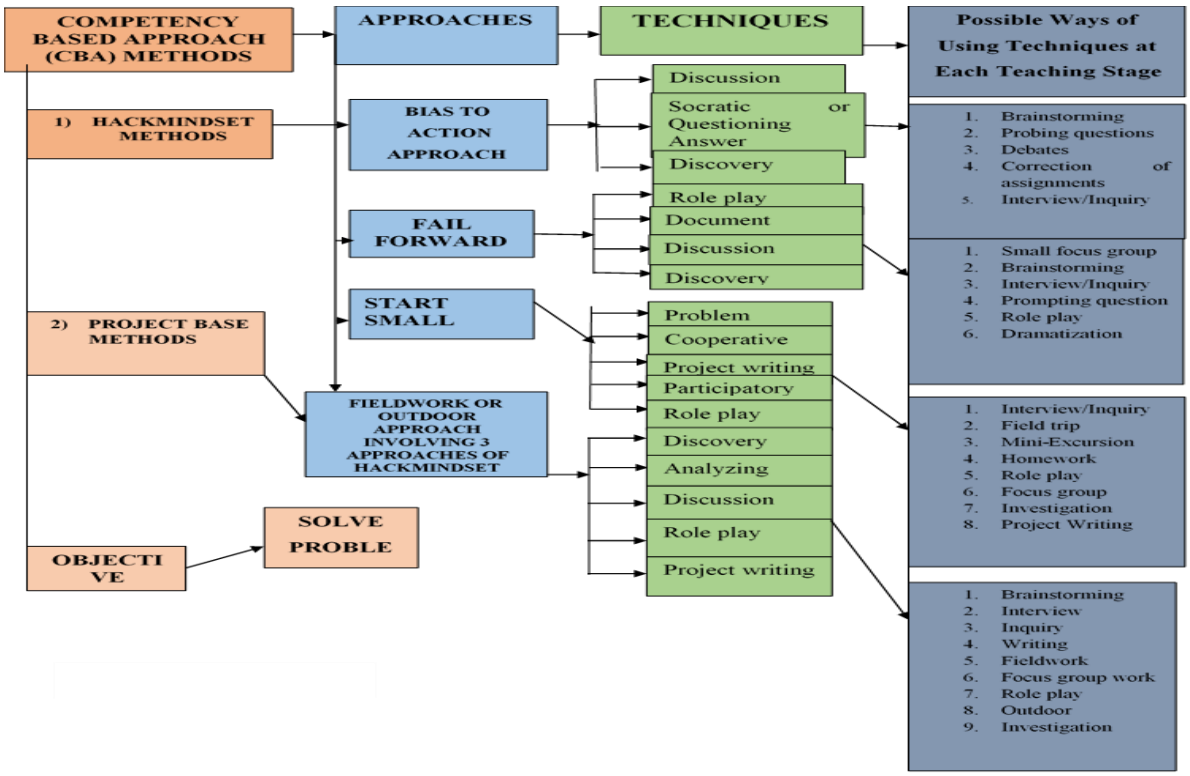

Figure 4. Reorganization CBA Methodology Under Teaching Methods, Teaching Approaches and Teaching Techniques.

DISCUSSIONS

The findings related to Research Question 1, which investigates the perceptions and experiences of geography examiners in Cameroon regarding CBA training and implementation, reveal several noteworthy insights. A significant portion of these examiners (83.3%) are aware of the Competency-Based Approach (CBA), indicating a relatively broad recognition within the educational community. This level of awareness aligns with existing literature, such as Smith (2018), who noted that educators in developing countries often demonstrate familiarity with innovative teaching methodologies, although awareness alone does not guarantee effective implementation. Despite this awareness, the data suggests that many examiners perceive a gap between knowledge and practice. Approximately 73.3% of teachers had exposure to CBA during their initial teacher training, reflecting that the approach was introduced at some point in their professional development. However, the sufficiency and depth of this training remain questionable, as the study uncovered that only 54.6% of respondents reported receiving specific instruction on teaching geography through CBA. This indicates a considerable gap in specialized training, which echoes findings by Sultan et al. (2025), who emphasized that effective professional development must be tailored and sustained to develop key competencies comprehensively.

Furthermore, the study highlights systemic challenges impeding the effective implementation of CBA. For instance, while 50.6% of respondents have participated in conferences, seminars, or workshops related to CBA, this figure suggests that ongoing professional development efforts are relatively moderate. Institutional support appears to be a vital factor in fostering the adoption of innovative pedagogies, as approximately 57.3% of teachers reported that their schools organize such activities. These findings are consistent with Wiysahnyuy (2021), who argued that institutional initiatives and continuous professional development are crucial for embedding new educational approaches into classroom practice. However, autonomous professional growth remains limited, with only 32.6% of teachers engaging in self-directed reading of CBA-related literature. This low level of independent learning signals barriers such as resource constraints and time limitations, corroborating Kafyulilo et al. (2012), who observed that resource-poor schools struggle to support teacher-led professional development. Similarly, Nurul Eeffah Awang et al. (2025) emphasized the importance of ongoing research and self-driven learning for pedagogical transformation, which remains underdeveloped among many teachers in Cameroon.

Perceptions of CBA's effectiveness and familiarity also vary among teachers. Most teachers (37.3%) rated their knowledge of CBA as high, while 44.6% considered it moderate, and only 9.3% perceived their understanding as very high. These perceptions suggest that while teachers are generally aware of CBA principles, their depth of understanding may be insufficient to fully implement or assess it effectively. This resonates with Ngala (2015), who reported that awareness of CBA exists but is often accompanied by inadequate training and resources, leading to poor classroom application. The challenge of translating awareness into practice is further compounded by systemic issues such as overcrowded classrooms, outdated syllabuses, and a lack of teaching resources, as highlighted by Wiysahnyuy (2021). These factors hinder teachers' ability to operationalize CBA effectively, despite their basic familiarity with its concepts. The perceptions of geography examiners are likely influenced by these teachers' experiences. Since examiners often rely on teachers' classroom practices to inform assessment standards, their views on the implementation of CBA are shaped by the realities faced by teachers. If teachers have limited training and resources, examiners might perceive CBA's implementation as superficial or ineffective, which could influence their evaluation of students' competencies and the overall quality of geography education. This underscores the importance of comprehensive professional development programs that not only introduce CBA but also equip teachers with the necessary pedagogical skills, digital literacy, and resource management capabilities.

The study also reveals that systemic barriers such as lack of training and resources significantly hinder the effective adoption of CBA. For instance, only 54.6% of respondents received targeted instruction on CBA, and a mere 32.6% engaged in autonomous learning related to the approach. This indicates that despite some level of awareness and institutional support, the majority of teachers lack sufficient opportunities for self-driven professional growth. These findings align with Kafyulilo et al. (2012), who noted that resource limitations in schools limit the effective implementation of CBA, and with Renitta et al. (2004), who emphasized that inadequate library and resource access hampers teachers' capacity to deepen their understanding of pedagogical

approaches. In addition, the study underscores the importance of ongoing professional development in fostering effective CBA implementation. While 50.6% of teachers have participated in relevant workshops or seminars, this leaves a significant proportion unengaged in continuous learning, which is vital for adapting to new pedagogical strategies. Institutional support, such as organizing conferences and workshops, plays a crucial role here; approximately 57.3% of teachers reported such activities in their schools, indicating a positive trend but also highlighting the need for broader and more sustained professional development initiatives.

In summary, the perceptions and experiences of geography examiners in Cameroon regarding CBA training and implementation reveal a landscape of growing awareness but also significant systemic and individual barriers. While most examiners acknowledge the importance of CBA and recognize some level of teacher training, gaps in specialized instruction, resource access, and autonomous professional development persist. These issues hinder the effective translation of CBA principles into classroom practices, which in turn affects assessment and overall teaching effectiveness. The findings underscore the critical need for targeted, sustained, and contextually relevant professional development programs, as well as systemic reforms that provide teachers with the resources, time, and support necessary to fully embrace and implement CBA. Recognizing and addressing these challenges will be essential for improving geography education and ensuring that curriculum reforms translate into meaningful learning outcomes for students in Cameroon.

The survey results on Competency-Based Approach and Teaching Methods (CBATMs) reveal a clear trend among Cameroon's geography teachers toward adopting innovative, experiential, and learner-centered pedagogies that align closely with the core principles of the Concept-Based Approach (CBA). The data highlight a significant emphasis on methods that foster creativity, critical thinking, collaboration, and practical skills, reflecting both global educational trends and regional priorities. The prominence of specific methods such as the Hack Mindset, Project-Based Learning (PBL), and Problem-Based Learning (PBL) underscores a pedagogical shift aimed at preparing students for the demands of the 21st-century workforce and society.

Emphasis on Innovative and Experiential Methods

The Hack Mindset method stands out as the most favored, with over 73.4% of teachers rating it as very effective or effective. This high endorsement indicates a strong belief among teachers that cultivating entrepreneurial and digital literacy skills through innovative pedagogies is crucial for modern geography education. The Hack Mindset aligns with international initiatives such as those promoted by the OECD (2018) and the World Economic Forum (2018), which emphasize fostering creativity, entrepreneurial spirit, and problem-solving abilities to equip learners for a rapidly changing, technology-driven world. Such methods encourage learners to think flexibly, engage in maker spaces, hackathons, and entrepreneurial ecosystems, thereby nurturing cognitive flexibility and innovation elements central to the principles of CBA, which prioritize deep conceptual understanding and real-world applicability.

Active and Student-Centered Pedagogies

The high ratings for Project-Based Learning (81.3%) and Problem-Based Learning (76.3%) as very effective or effective demonstrate a clear preference among teachers for active, learner-centered approaches. These methods promote inquiry, critical thinking, and practical engagement with real-world issues, resonating with the global pedagogical shift toward constructivist and social constructivist philosophies (Bell, 2010; UNESCO, 2020). Such approaches foster deeper understanding of geographical concepts by involving students in designing, investigating, and presenting projects that simulate authentic situations. The positive perception suggests that teachers recognize the value of experiential learning in making geography education more meaningful, relevant, and aligned with the principles of CBA, which emphasize understanding over rote memorization.

Collaborative and Practical Engagement

The survey indicates that 82% of teachers perceive collaborative group work as very effective or effective, and 73.3% value field and practical activities similarly. These findings underscore the importance teachers place on social learning, teamwork, and experiential engagement elements that are essential for developing communication, cooperation, and social skills (UNESCO, 2020; Mthembu & Mkhize, 2023). Such pedagogies

are consistent with the social constructivist view that knowledge is constructed through interaction and shared experiences. They also support the development of soft skills vital for societal participation and workforce readiness, aligning with the broader goals of CBA to produce competent, adaptable, and socially responsible learners.

Digital Tools and Technology Integration

Despite the positive perceptions of active pedagogies, the survey reveals a relatively modest emphasis on digital and technological tools, with only 8% of teachers rating TDT (Technology and Digital Tools) as very effective or effective. This lower endorsement reflects infrastructural and resource challenges prevalent in Cameroon and many other developing contexts (Nguma Mbeng et al., 2025). While digital literacy is recognized as vital for 21st-century skills (OECD, 2018; WEF, 2018), systemic barriers limit widespread integration. However, the high awareness of digital innovation's importance aligns with regional strategies such as the African Union's Digital Transformation Strategy (2020) and UNESCO's (2020) emphasis on digital skills for sustainable development. Teachers' recognition of digital tools' potential indicates a growing readiness to incorporate technology, provided infrastructural and capacity challenges are addressed.

Global and Regional Trends in Pedagogical Shifts

These findings mirror international and regional research that underscores a pedagogical shift toward active, experiential, and digital pedagogies. Bell (2010) and UNESCO (2020) emphasize that project-based, problem-based, and collaborative learning not only enhance content mastery but also foster 21st-century skills such as creativity, communication, and problem-solving. The South African studies during the COVID-19 pandemic (Kortjass & Mkhize-Mthembu, 2023) demonstrate that digital platforms like WhatsApp, Moodle, and Zoom are increasingly used to support active learning, although infrastructural deficits remain a significant barrier. Similarly, Nguma Mbeng et al. (2025) highlight that teachers' understanding of the CBC philosophy is often hampered by inadequate resources and training, limiting full digital integration.

Implications for Pedagogical Practice and Policy

The positive perception of innovative methods such as Hack Mindset, PBL, and collaborative activities indicates a readiness among Cameroon's geography teachers to adopt pedagogies aligned with the principles of CBA. However, translating these perceptions into effective classroom practice requires systemic support. Investments in teacher training are crucial teachers must develop deep content knowledge, pedagogical competence, and digital literacy to effectively implement these methods. As Chu (2018) observed, supervision alone does not reliably influence teacher effectiveness; thus, comprehensive professional development, mentorship, and incentives are necessary to sustain these pedagogies. Furthermore, infrastructural investments particularly in digital resources, internet connectivity, and devices are essential to facilitate digital integration and enhance experiential learning (Nguma Mbeng et al., 2025). Policy frameworks should encourage teacher participation in curriculum design and foster a culture of continuous professional development, aligning classroom practices with global standards and regional strategies (UNESCO, 2020; African Union, 2015).

Qualitative Reflection of Findings

Qualitatively, these findings suggest that Cameroon's geography teachers are increasingly aware of and receptive to innovative, student-centered pedagogies that promote conceptual understanding and practical skills. Their emphasis on methods like Hack Mindset, PBL, and collaborative work reflects an alignment with international educational reforms emphasizing inquiry and experiential learning. Yet, the modest focus on digital tools underscores persistent infrastructural and capacity challenges that need urgent attention. Teachers' positive attitudes provide a promising foundation for further reforms, but systemic issues such as inadequate training, limited resources, and insufficient supervision constrain full implementation. The findings also highlight a broader regional and global consensus: effective geography education must go beyond traditional methods, integrating active, inquiry-based, and technological pedagogies to equip learners for future challenges. As the OECD (2018), UNESCO (2020), and other international bodies advocate, achieving this transition requires a multifaceted approach combining policy support, teacher professional development, infrastructural investments,

and stakeholder collaboration. In sum, Cameroon's geography teachers perceive a strong alignment between their preferred CBATMs and the principles of CBA, emphasizing innovative, experiential, and collaborative methods. The high ratings for Hack Mindset, PBL, and practical activities reflect a pedagogical shift toward active learning that fosters critical thinking, creativity, and practical skills. Despite limited digital integration, teachers recognize its importance, indicating an openness to further digitalization pending infrastructural and capacity improvements. These perceptions align with regional and global trends emphasizing constructivist, inquiry-driven, and technology-enhanced pedagogies, essential for preparing learners for the demands of the 21st-century world. Addressing systemic barriers and fostering continuous professional development will be crucial to translating these positive perceptions into impactful classroom practices, ultimately enhancing the relevance and quality of geography education in Cameroon.

The perceptions of geography examiners regarding the implementation of the new Competency-Based Approach (CBA) teaching methodology reveal a complex but generally optimistic outlook, tempered by significant challenges. The survey findings indicate that 41% of examiners regard the Development of New Methodology (DNM) as the most critical factor for effective CBA implementation. This consensus underscores the vital role of pedagogical innovation in translating policy reforms into meaningful classroom practice. It aligns with global educational insights emphasizing that traditional teaching strategies often fall short in fostering deep understanding and active student engagement (Sundari et al., 2023). The necessity for continuous innovation and adaptability in teaching practices reflects the evolving nature of education in response to societal and technological changes, emphasizing pedagogical flexibility as essential for successful curriculum reform.

The Primacy of Pedagogical Innovation

For instance, Sundari et al. (2023) advocate for integrating current educational technologies and continuous professional development (CPD) to propel effective geography teaching. Similarly, early studies by Korevaar and van der Schee (2004), Boshuizen and Wopereis (2003), and Bednarz and van der Schee (2006) highlight that ongoing teacher capacity building, through seminars, workshops, and collaborative projects, is crucial for fostering pedagogical innovation. Teachers' willingness to adopt new methodologies is a positive sign; however, systemic barriers such as limited training, lack of resources, and insufficient institutional support hinder full realization. This challenge is consistent with findings in many contexts where the gap between policy and practice persists, emphasizing that innovative teaching requires not only curriculum reform but also substantial professional development.

Training and Support as Critical Factors

Examiners' perceptions are strongly influenced by their understanding of the importance of continuous professional development (CPD). They perceive that without targeted training, teachers cannot effectively implement new pedagogies, especially those involving digital tools or student-centered approaches. This resonates with research by Kauchak and Eggen (1998), which underscores that teachers need problem-solving skills and pedagogical competencies to adapt to innovative methodologies. The role of ongoing training, including seminars, workshops, and mentorship programs, is fundamental; teachers who participate actively in such activities tend to be more adaptable and open to integrating new approaches, thus improving student engagement and learning outcomes. The high regard for developing new methodologies echoes findings from international literature.

The Role of Technology and Methodological Innovation

Examiners' perceptions also align with broader trends emphasizing the integration of digital tools into pedagogy. Sundari et al. (2023) highlight that the use of educational technologies, like digital simulations, virtual field trips, and interactive platforms, enhances student understanding and motivation. However, the study also notes that infrastructural deficits, such as inadequate internet access and lack of devices, limit these innovations. This is corroborated by Nguma Mbeng et al. (2025), who emphasize that despite teachers' awareness of the importance of digital tools, systemic resource constraints impede widespread adoption, especially in rural areas. Consequently, examiners' perceptions reflect a recognition that technological integration is essential but contingent upon addressing infrastructural challenges.

Perceptions of Methodological Effectiveness

The survey indicates that 73.3% of respondents believe that adopting diverse and innovative pedagogical strategies, such as project-based learning (PBL), problem-based learning (PBL), and simulation activities, is essential for the effective implementation of CBA. These methods promote active participation, critical thinking, and practical skills, aligning with international best practices (Bell, 2010; UNESCO, 2020). Examiners see these approaches as fostering higher-order thinking skills (HOTS) and preparing students to solve real-world geographical problems. However, some respondents express concern about the difficulties teachers face in selecting appropriate methods, with 73% indicating challenges in method choice. This challenge is consistent with global findings that effective pedagogical change requires not only awareness but also practical guidance and tailored support (Arroyo et al., 2012; Tambo, 2012).

Challenges Related to Resources and Training

A significant 34% of respondents reported confusion about the specific methods associated with CBA, reflecting a broader issue of insufficient clarity and guidance. This aligns with Ndansi Clive (2019), who identified that inadequate teacher training and low awareness hamper effective implementation of innovative pedagogies. Teachers often rely on traditional methods such as Objective-Based Approach (OBA), with 32% still favoring it, indicating a transitional period in pedagogical practices. This reliance on familiar approaches underscores the need for comprehensive capacity-building initiatives that include clear guidelines, exemplars, and ongoing mentorship.

The Importance of Teacher Qualities and Classroom Interaction

Examiners' perceptions also emphasize that effective implementation of CBA depends heavily on teachers' interpersonal and communication skills. The qualities of kindness, active listening, encouragement, and passion are viewed as crucial for fostering student engagement, which is vital for active, learner-centered pedagogies (Tambo, 2003; Kibinkiri, 2018). Mbeng (2024) emphasizes that teachers' mastery of content, motivation, and communication skills directly influence students' learning and their ability to develop higher-order skills. Consequently, examiners see well-trained, motivated teachers as essential for translating CBA principles into classroom practice.

Infrastructural and Systemic Barriers

The study by Chogolou (2021) highlights infrastructural deficiencies large class sizes and lack of modern resources as key barriers to effective CBA implementation. These systemic issues hinder teachers' ability to apply innovative methods, especially those requiring technological support or smaller class sizes conducive to active learning. Examiners recognize that without addressing these infrastructural challenges, the potential of CBA to improve critical thinking and practical skills remains limited.

Perceptions of Pedagogical Components

The perceptions extend to the foundational concepts underlying teaching strategies. Hasanova et al. (2021) stress that a clear understanding of the differences among approach, method, technique, style, and strategy is vital for effective CBA deployment. Examiners value that teachers who articulate and differentiate these components can better plan and execute learner-centered lessons that foster engagement and understanding (British Council, 20115; Mariam Webster, 2016). This understanding enables teachers to adapt their instruction to diverse learning contexts, making the implementation more coherent and effective.

Stakeholder Involvement and Reflective Practice

Examiners also perceive that participatory and reflective practices are crucial. Tambo (2012) advocates for classroom discussions, forums, and active student participation, which support the principles of CBA. Teachers who facilitate such discussions and foster reflection are viewed more favorably, as these activities promote critical thinking and community involvement—key objectives of modern geography education (UNESCO,

2020). Moreover, integrating stakeholder feedback and continuous reflection enhances the transparency and relevance of teaching methods, fostering a more responsive learning environment.

Global and Regional Perspectives

The perceptions of Cameroonian examiners align with regional and international trends. Globally, there is a shared movement toward adopting active, participatory, and technology-supported pedagogies (OECD, 2018; UNESCO, 2020). In Africa, efforts focus on overcoming infrastructural limitations and building teacher capacity to implement innovative approaches effectively (Nguma Mbeng et al., 2025). The regional emphasis on teacher training, resource provision, and stakeholder engagement reflects a collective understanding that systemic support is essential for sustainable educational reforms.

In summary, the perceptions of geography examiners regarding the implementation of the new CBA teaching methodology are largely positive but acknowledge significant systemic challenges. They recognize that the development and adoption of new methodologies (41%) are central to effective implementation, echoing international consensus on pedagogical innovation's importance. Examiners emphasize that continuous professional development, infrastructural support, and clear conceptual understanding of pedagogical components are critical to success. They also highlight that teachers' interpersonal qualities, classroom interaction, and stakeholder participation significantly influence the effectiveness of CBA. Despite systemic barriers such as resource limitations and large class sizes, examiners see the potential for CBA to promote active, student-centered learning that fosters critical thinking and practical skills. Their perceptions underscore the importance of integrated, systemic efforts combining teacher training, infrastructural investments, and pedagogical clarity to realize the full benefits of CBA in Cameroon's geography education. These insights resonate with global and regional trends, emphasizing that sustainable reform depends on addressing systemic barriers while fostering teacher capacity and innovation.

CONCLUSION

The comprehensive analysis of the perceptions and experiences of Cameroon's geography teachers and examiners regarding the implementation of the Competency-Based Approach (CBA) reveals a landscape marked by both awareness and significant challenges. Across the three research questions, a consistent theme emerges: there is a clear recognition of the importance of CBA and a willingness among teachers and examiners to adopt innovative, student-centered pedagogies, but systemic barriers such as inadequate resources, limited training, and infrastructural deficits continue to impede effective practice and assessment. In sum, the perceptions of Cameroon's geography teachers and examiners reveal a landscape of cautious optimism combined with an acute awareness of systemic barriers. Teachers are inclined toward innovative pedagogies aligned with CBA principles, recognizing methods that promote active, experiential, and collaborative learning, though they face infrastructural and resource constraints. Examiners acknowledge the importance of developing new methodologies and highlight that effective implementation hinges on targeted training, resource access, and systemic reforms. Both groups emphasize that addressing systemic challenges such as large class sizes, inadequate facilities, and limited professional development is essential for translating pedagogical ideals into practice. Their perceptions collectively underscore that sustainable educational reform in Cameroon's geography education depends on a holistic approach: continuous professional development, infrastructural investments, clarity in pedagogical components, and stakeholder engagement. Recognizing and addressing these interconnected barriers will be vital to fully realize the potential of CBA, ultimately leading to improved student outcomes and more relevant, engaging geography education aligned with global and regional best practices.

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