

Building Education for Sustainability: A Philosophy of Education Analysis of Competence-Based Curriculum Implementation in Rwanda

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Abstract

This study examines the extent to which CBC theory matches its application in classroom. Employing Aristotle's concept of aitia, a framework with four causes, the research analyzes the nature and implementation of the CBC in four secondary schools. Interviews and focused group discussions, were used to explore the practical application of CBC concepts in the classroom alongside documentary analysis on both competence based curriculum, education for sustainability with their corresponding educational philosophies. Purposeful sampling was used to select participants who have relevant experiences and perspectives related to competence-based curriculum implementation in Rwanda while thematic analysis was applied to identify and analyze patterns, themes, and commonalities in the collected qualitative data. Constant Comparative Analysis was utilized to continuously compare data across interviews and focus group discussions. The findings revealed a significant gap between theory and practice, influenced by Western and African cultural philosophies. The study recommends regular reviews and interdisciplinary approaches to improve the CBC's alignment with sustainability education objectives in Rwanda.

Keywords: Competence Based Curriculum, Philosophy of Education, essence, aitia, Rwanda.

Introduction

Rwanda has made significant strides in its efforts to improve its education system over the years. As part of its commitment to sustainable development and addressing global challenges, the country has embraced the concept of education for sustainability (Sowden et al., 2023).

Education for sustainability aims to empower learners with the knowledge, skills, and values necessary to understand and address complex environmental, social, and economic issues (Sampedro, 2021). In line with this vision, Rwanda has adopted a competence-based curriculum, which places emphasis on equipping students with practical competencies that are relevant to their future careers and societal needs. The curriculum aims to go beyond traditional academic knowledge and focuses on fostering critical thinking, problem-solving abilities, and adaptability – all crucial qualities for addressing sustainability challenges effectively. This study compared the theoretical philosophy found within the Competence Based Curriculum (CBC) and the substance of its implementation. This study puts emphasis on the experience of teacher's facilitation of students' thinking autonomy which at the same time defines the research scope. The research opines that, once learners have acquired thinking autonomy, they can become problem solvers.

To achieve the study objectives, the study analysed the content of CBC using Aristotle's concept of Aitia in which reality is described with four causes of being (material, formal, efficient and final causes) in order to describe the philosophy of CBC main content matter, its form, its function and its purpose (Wiryomartono, 2022).

The need to shift from theoretical content transmission to more problem solving activities in teaching and learning, prompted the development of Competence based Curriculum (CBC) in 2015 in Rwanda, in order to overcome problems related to quality education (Nsengimana et al., 2021;Nsengimana, et al. 2020).

In order to achieve these ideals, specific competences and dispositions were drafted within the curriculum and expected to be acquired by learners. These included the provision to equip learners with the capacity to think for themselves and become problem solvers. In that perspective, specific concepts were drafted in the curriculum to enable learners to acquire thinking autonomy: Helping them to develop flexibility in changing contexts and circumstances, adaptability in front of uncertain situations. Address learners' needs, interests and abilities, enabling them to develop critical and higher order thinking, creativity, problem solving capacities and innovation. Developing reasoning capacities in learners, to think logically and take initiative, to develop imagination, creativity and innovation; to generate new ideas, to produce knowledge based on research and evaluation of ideas (REB,2015).

Nevertheless, it seems that these ambitions are rooted in the western Cartesian rationalistic individual mode of thinking, characterized by individualistic epistemology, of "I think, therefore, I am", which implies the western liberal thinking philosophy (Urban, 2018; Edwards et al., 2009). Yet, unlike the western individual reasoning, the sub-Saharan (Rwanda) context in which CBC is being implemented, promotes a community led thinking autonomy; where existing together seems to take precedence over personal plans, implying that thinking, creativity, problem solving are done together rather than individually (Shaw, 2013). If therefore these two seemingly opposed philosophies can easily be combined within the CBC framework and theory, it remains to determine whether in practice, teachers are disposed and able to apply a theory which is radically opposed to their day-to-day cultural experience of what it means to be, to know, to relate, to possess, to act, to judge about quantity and quality, time and space (classroom experience included). The question implied is: does CBC possess a universal culture free validity in capacitating students to think for themselves? To answer this question, this study examines the relationship between the western theoretical aspects of the curriculum and their practical implementation in the Rwandan context. The objective is therefore to Examine the extent to which CBC theory matches its application in classroom in four secondary schools of Rwanda.

Literature review on CBC implementation in Rwanda

Why CBC was adopted in Rwanda?

Rooted in constructivist theories, CBC was identified as an appropriate approach to develop learners' hands-on capabilities and self-employability to enable them to improve their lives during and after school (Mbarushimana & Kuboja, 2016). In that perspective, Ndiokubwayo & Habiaremye (2018) compared KBC (Knowledge Based Curriculum) and CBC. The study managed to show the advantages of CBC over KBC in terms of interests and needs of the teachers especially as it favors employability. Similarly, it was found that CBC implementation improved learners' participative initiative (Ndiokubwayo et al., 2019). These initiatives were considered part of CBC strategies as

evaluated by Nsengimana (2021) who found that they were developed to overcome Job-related problems. However, it was obvious that different challenges were also part of the curriculum implementation.

Challenges of CBC implementation for learners' thinking autonomy

While the above studies managed to examine fundamental aspects that could relate to students' thinking autonomy, namely innovation, problem-solving skills and employability, they did not sufficiently dig into the nature and roots of processes which lead to those skills to show how they could transform school activities to enable learners to become free and autonomous thinkers. The question of learner's thinking autonomy was not specifically treated in these studies although it seems to be a necessary component in understanding and addressing the challenges and opportunities related to developing innovative skills, employability and problem-solving capacities.

Moreover, despite the very good reputation attributed to the implementation of CBC, its content was found to be heavy for learners, thus contradicting findings that CBC is well designed in terms of timing its lessons (Ndiokubwayo & Habiwaremye, 2018). Consequently, if the content cannot be easily absorbed by learners, it is an indication that it may become much more difficult to lead students to think for themselves. Having to cover too much content implies that, teachers cannot cover all the scheduled lessons on time (Kizito, Hashituky, Rukundo, 2019). The issue of big amount of content planned to be covered in 40 minutes, especially when it is combined with excessive student-teacher ratio, can prevent teachers to apply methodologies that are required in the development of learners' thinking autonomy because one teacher cannot find time to follow up individual learners or make sure the content is assimilated during the allocated time.

In addition to these challenges other studies questioned the capacity of the teachers to use the current CBC strategies to innovate their teaching and learning experiences, to prepare Rwandan citizens to face the world of competition. It was revealed that individual teachers were not sufficiently prepared (Nsengimana, 2021). In this way, CBC potentials to develop learners' thinking autonomy are yet to be examined. The focus on practice that appears to neglect cognitive and moral processes under which a competence is built, is a gap that needs to be looked into to effectively achieve the development of innovation, problem solving skills and employability among learners.

Challenges to CBC implementation also include the lack of adequate monitoring and evaluation of the CBC, the lack of documentation, the scarcity of training budget, the low level of English proficiency and the resistance to change among teachers (Kizito et al., 2021). This can justify why it is difficult to easily determine whether CBC is being appropriately implemented. There is therefore the need to conjugate efforts in studying different aspects of CBC implementation.

Other challenging issues were shown by studies that recognized the relevance of adapting CBC to the Rwandan context in order to enable learners to develop knowledge, skills and values necessary for entrepreneurial thinking, reasoning based decisions and career employability (Julius et al., 2020). However, these studies focused on

the financial domain and could not tell whether the same strategies used in finance could apply in other academic domains. These studies illustrate how much difficult it is to address the problem of existing conditions for a successful CBC implementation.

Among other challenges identified, poor practice of English language, lack of adapted teaching and learning materials to Rwanda and incompetence of teachers were mentioned (Sibomana & Dushimumuremyi, 2018). However, the transition from conscious intellectual and moral engagement with the content to the practical application known as competence was not distinctly demonstrated. There appears to be a lack of a clear connection between theoretical concepts found in books and their practical implementation in the classroom.

Empirical solutions proposed to bridge the gap between theory and practice of CBC

Aligning CBC with UR-CE programs

In Tabaro's (2018) critical analysis of the components of the Competence-Based Curriculum (CBC), it was suggested to align and incorporate these components into the teacher training college (UR-CE). This institution's mandate is to produce secondary school teachers capable of effectively implementing CBC. The study primarily focused on proposing solutions for the successful implementation of CBC, though it did not assess challenges related to how schools facilitate students' independent thinking through CBC.

Enhancing Teacher-Student Ratios, Resources, and Training While the ideals of CBC may be commendable, several preconditions must be addressed for its successful implementation. These conditions may encompass resolving issues such as the teacher-student ratio, ensuring adequate teaching facilities and resources, implementing appropriate teacher training programs, among others. Numerous studies have highlighted the necessity to refine the strategies employed in training both secondary and primary school teachers in the use of CBC, underscoring the persistent challenges faced by teachers in implementing CBC (Ndihokubwayo et al., , 2019).

Mastery of English language As the Competence-Based Curriculum (CBC) aimed to shift teaching and learning practices from mere knowledge acquisition to practical application, studies conducted by Sibomana and Dushimumuremyi (2018) emphasized the opportunities and advantages associated with mastering the English language. Alternatively, autonomy in thinking within the Competence-Based Curriculum (CBC) can only be achieved through a language that the child comprehends. The original language of the curriculum is English, whereas the Rwandan implementing culture is predominantly characterized by the use of the Kinyarwanda language. This discrepancy prompted Ndabaga and Tabaro (2015) to underscore the necessity of incorporating the mother tongue into the curriculum, especially in lower primary levels, to facilitate students in developing understanding and competence. While their research did not explicitly articulate how a child's reasoning is intricately linked to the language they master, teaching in the mother tongue emerges as a crucial element in aiding students to appropriately enhance

their reasoning and cognitive capacities. This paper contributes to the discourse by analyzing teachers' experiences with CBC in facilitating students' acquisition of thinking autonomy.

Community of practice

Furthermore, Rwandans and other researchers made efforts to address these challenges, proposing the utilization of Community of Practice (CoP) by teachers, as highlighted in Nsengimana et al.'s work in 2023. These authors specifically focused on teachers' perceptions and understanding of the innovations introduced by CBC, viewing it as an opportunity to enhance its success.

Implementing specific subjects

Similarly, other studies concentrated on the implementation of specific subjects, such as physics or mathematics, and were unable to extrapolate their findings to encompass the fundamental strategies of the Competence-Based Curriculum (CBC) in empowering students to engage in self-directed learning across various subjects implementing specific subjects (Ndhokubwayo et al, 2021).

In comparison, the success of the Competence-Based Curriculum (CBC) has been linked to practical subjects and domains, emphasizing that students gain problem-solving skills upon completing their education. For instance, Technical and Vocational Education and Training (TVET) has been recognized as a crucial domain in which the implementation of CBC fosters creativity, practical learning, innovation, and employability. However, this potential could be fully realized only if TVET is further decentralized, thereby opening up opportunities for students (Halsema, 2017).

Most studies reviewed regarding the Rwandan Competence-Based Curriculum (CBC) revealed variations in the problems studied, conceptual frameworks employed, methodologies utilized, the specific goals targeted and the solutions proposed. While acknowledging challenges in CBC implementation, most studies concur that existing opportunities to address these challenges should be recognized and effectively utilized. However, it is noteworthy that none of the studies incorporated Aristotle's concept of Aitia, nor did they analyze how teachers, through CBC, specifically facilitate students' development of thinking autonomy. Additionally, a predominant number of these studies adopted quantitative designs and positivist paradigms, often concentrating on specific subject domains such as physics, finance, language, or focusing on tertiary education levels and practical programs like TVET or healthcare.

Furthermore, while these studies readily acknowledge the shift in Competence-Based Curriculum (CBC) implementation from intellectual content to its practical application, leading to enhanced professionalization and employability, this acknowledgment often lacks a nuanced understanding. The transition between theory and practice, their connection, and interrelatedness appear to be contingent on multiple factors that previous studies have not sufficiently reflected upon, analyzed, or demonstrated. This paper aims to address this fundamental gap found in reviewed studies, which primarily stems from an unrecognized separation between knowledge (theory) and

competence (practice). These aspects are often treated as contrasting or opposing, overlooking the inherent intertwining, interrelation, and interdependence. In reality, practice begins with a mental plan, evolves into action, and can subsequently be reflected upon and re-planned (Mulder, et al., , 2007). That is why it appears crucial to shift the trajectory of research and embark on an original study from a fresh perspective, exploring the essence of cultivating learners' thinking autonomy and how it can ensure that students evolve into proficient problem solvers.

Thinking autonomy and practical contribution

Although Rwandan studies on the implementation of the Competence-Based Curriculum (CBC) did not adequately address the aspect of thinking autonomy, certain non-Rwandan studies have made valuable contributions by exploring thinking autonomy or closely related concepts. However, these studies did not establish a direct connection to CBC. For instance, Sudirtha et al. (2022) elaborated on the advantages of self-assessment in a blended learning mode, emphasizing its role in fostering learners' creative thinking and autonomy. Similarly, Widodo et al. (2021) discovered that flipped learning strategies have the potential to enhance students' engagement, critical thinking, and autonomy..

Additional studies highlight the contribution of Learning Management Systems to the development of students' creative thinking capacities in elementary schools. These studies identify reflective thinking as having a positive impact on cognitive flexibility, leading to an increase in learners' autonomy (Orakcı, 2021).

Similarly, Orakci and Durnali (2023) focused on learners' thinking autonomy and established a robust correlation between teachers' self-efficacy, metacognitive strategies, and autonomy support in fostering students' creative thinking. In a related study, Tunceli et al. (2022) concluded that student teachers' self-regulation skills played a pivotal role in developing students' critical thinking and learning autonomy. Reflective thinking practices also played a significant role within a collaborative learning environment in promoting students' autonomy. Despite the efforts made, the concept of thinking autonomy was not distinctly associated with the Competence-Based Curriculum (CBC) nor adequately delineated to guide teachers on specific strategies for aligning their school curriculum policy and cultural beliefs with the cultivation of students' thinking autonomy (Şener & Mede, 2022). The mentioned studies emphasized alternative approaches beyond teachers' utilization of CBC in fostering students' ability to think and reason independently.

Nevertheless, attempts have been made to illustrate that the application of higher-order thinking skills in the classroom, as described in Bloom's taxonomy, enables students to engage in logical knowledge construction, ultimately leading to autonomy and responsibility (Teimourtash & YazdaniMoghaddam, 2017). However, none of the aforementioned research endeavors have interconnected thinking autonomy, the Competence-Based Curriculum (CBC), and Aristotle's concept of Aitia. This unique combination has been introduced by this article. To my knowledge, previous studies on CBC did not incorporate Aristotle's concept of Aitia, and conversely, those focusing on Aristotle's concept of Aitia did not integrate it with CBC or thinking autonomy— a concept not thoroughly addressed in detail.

Aitia (singular: aition) is a term used in Aristotle's philosophy to denote causes or explanations for events or phenomena. Aristotle developed a comprehensive theory of causality, and the concept of aitia is pivotal to understanding his ideas about why things happen or why they exist. He identified four main types of causes (aitiai) contributing to explaining an event or phenomenon (Wiryomartono, 2022):

Material Cause (Hyle Aitia): This cause refers to the physical substance or material from which something is made, answering the question, "What is it made of?" For instance, the material cause of a wooden table is the wood used in its construction. In this study, the material cause corresponds to the content of the Competence-Based Curriculum (CBC).

Formal Cause (Eidos Aitia): The formal cause pertains to the essential nature or form of a thing, answering the question, "What is its nature or essence?" In this study, the formal cause is embedded in the western philosophy of freedom and thinking autonomy within democratic classrooms, shaping the identity of the CBC.

Efficient Cause (Arche Aitia): The efficient cause deals with the agent or process responsible for bringing something into existence or causing an event, answering the question, "What is responsible for making it happen?" In this study, the efficient cause encompasses all educational stakeholders involved in the design, development, implementation, monitoring, and evaluation of the CBC, including policy makers and teachers in the classroom.

Final Cause (Telos Aitia): The final cause is concerned with the purpose, end, or goal for which something exists or an event occurs, answering the question, "What is its purpose or what does it aim to achieve?" In this study, the final cause revolves around the idea that every component of the curriculum aims to empower the learner to think independently and solve problems.

In an effort to comprehend and scrutinize CBC implementation, the concept of Aitia was employed. Aristotle extensively discusses causation and its explanation in "Metaphysics" (Books V and VI). Additionally, in "Physics" (Book II), Aristotle explores causation and the nature of change. While primarily focused on ethics, "Nicomachean Ethics" (Books I and II) touches on causation and the concept of "aitia" when discussing human actions and their causes. Aristotle also delves into the causes and principles of change and transformation in the natural world in the section "On Generation and Corruption."

Research Methodology

Study design

This study employed a descriptive survey design, a research approach that involves observing, describing, explaining, and making sense of collected data (Sahin & Mete, 2021). This design aligns with the qualitative interpretive paradigm, which emphasizes understanding and interpreting the meanings individuals attribute to their experiences within the social world.

The qualitative interpretive paradigm, also known as the interpretive or hermeneutic paradigm, contrasts with the quantitative paradigm which focuses on numerical data and statistical analysis. It recognizes the subjective nature of human experiences, seeking to understand the perspectives, beliefs, and meanings individuals assign to their lives. Context holds significance in this paradigm, with researchers exploring social, cultural, historical, and situational factors influencing human behavior.

In this qualitative study aiming for detailed descriptions of phenomena, data collection involved in-depth interviews, participant observations, and the analysis of textual or visual materials, capturing the depth and complexity of teachers' experiences (Khatri, 2020).

Population and sampling procedures

TTCs were deliberately selected based on their professional characteristics and the mandate to train teachers for the implementation of the Competence-Based Curriculum (CBC). The total population of this study comprised 16 Rwandan TTCs. However, only four TTCs (TTC Mbuga, Kirambo, Gacuba II, Nyamata) were both randomly and purposefully chosen to participate in the research due to their shared characteristics in terms of curriculum and classroom culture.

The rationale behind selecting TTCs was their responsibility for producing teachers for primary schools, where the implementation of CBC is predominantly expected to commence from a student's perspective. The research employed an open interview format conducted individually with 24 teachers, and their classroom lessons were observed twice using a 25-item checklist inspired by Paulo Freire's pedagogy of the oppressed (Gomes, 2022). Subsequently, a focus group discussion involving all 24 teachers and 4 separate focused group discussion with 24 class representatives was conducted consisting of 6 class representatives by TTC.

The observation checklist served to validate data obtained from the interviews and FGD through the researcher's direct observation. The interview method was preferred due to its unique advantages and opportunities not fully achievable through other research methods. The in-depth interview allowed flexibility, enabling the adaptation of questions and follow-up inquiries based on the teachers' responses. This adaptability facilitated a thorough exploration of relevant aspects, leading to comprehensive data collection (Patel & Patel, 2019). Additionally, it provided an opportunity for clarification and probing, enabling the study to seek further insights into specific teachers' experiences with CBC application. Furthermore, the interview method allowed for capturing the context surrounding participants' experiences, attitudes, and behaviors in dealing with CBC. **Data analysis and interpretation procedures**

The data analysis process in this study employed a combination of thematic analysis, content analysis, and narrative analysis. The primary emphasis was on identifying patterns, themes, and connections within the data to derive meaningful interpretations. An essential aspect of accurate data interpretation was the consideration of the broader context, and each individual teacher's unique perspective was taken into account, capturing diverse viewpoints and insights. This inclusive approach contributed to a more comprehensive understanding of CBC implementation, enabling

the exploration of complex and multifaceted themes. Notably, unexpected themes and insights emerged, leading to novel discoveries and the potential generation of new research questions. Despite the deliberate choice of a small sample size for this research, it provided depth and insight beyond what other data collection methods might offer. The study adopted an inductive approach, allowing theories or themes to emerge from the data rather than imposing preconceived notions. Significant statements were grouped together to form themes, by clustering statements with similar meanings, interpreting them qualitatively. Openness to discovering unexpected patterns and insights persisted throughout the entire data collection and analysis process.

The Aristotelian research paradigm of the four causes (material, formal, efficient, and final) was also utilized to analyze and comprehend the nature of the classroom experience during CBC implementation. Additionally, the cultural dimension of the learning model allowed the study to conceptualize findings in terms of power relationships between teachers and learners, social and cultural beliefs about time, and knowledge construction.

The data analysis frameworks included the Cultural Dimension of Learning Framework (CDLF) (Parrish & Linder-VanBerscht, 2010). This model facilitated a comparison between Western philosophy, from which CBC originates, and the Rwandan communitarian paradigm in terms of binary oppositions such as equality and authority, individualism and collectivism, challenge and nurture. It was also instrumental in comparing epistemological beliefs of both sides, including uncertainty acceptance vs. stability seeking, being reasonable and logical argumentation, complex systems (holism) and causality (Analysis), and event time and clock time.

Ethical clearance

Before commencing data collection, a data collection permit was secured together with a research ethical approval from the University of Rwanda's Research and Innovation Unit. All participants freely and voluntarily filled out participant consent forms, providing their signatures as an indication of their agreement to participate in the study.

Results, analysis and discussion

Hierarchy in Classroom Relationship

The data reveals a consistent theme of a top-down relationship between teachers and learners, emphasizing knowledge transmission over construction. The teachers express pressure from school authorities to strictly adhere to the curriculum, limiting students' autonomy in knowledge construction. This was confirmed by Teacher X1: *“The curriculum is not set in a way to respect learners' view. it does not inspire teachers to respect learners' views and capacitate students to think for themselves because there is pressure from school authorities to implement the planned content. The HT pushes me to obey without refusing.”* This hierarchical dynamic is confirmed by observations indicating that knowledge transmission takes precedence. Unfortunately, this contradicts the intended shift of the Competence-Based Curriculum (CBC) towards problem-solving activities. The hierarchical classroom relationship identified in the data implies a systemic challenge in realizing the principles of CBC. The pressure on teachers to

conform to a top-down approach restricts the autonomy of both educators and students in the learning process. This finding aligns with existing literature on the difficulties of implementing CBC, emphasizing the need for a more nuanced approach. The observed hierarchy in the classroom relationship deviates from the CBC's underlying philosophy, which aims to foster thinking autonomy and a shift from traditional knowledge transmission. This discrepancy highlights the importance of addressing institutional pressures that hinder the realization of CBC objectives. The literature on CBC implementation challenges, as reflected in Nsengimana et al. (2021), further supports the identified issues, emphasizing the need for pedagogical reforms. He emphasizes the struggle to transition from theoretical content transmission to problem-solving activities, corroborating the observed top-down approach. This discrepancy signifies a crucial gap between theory and practice, underscoring the need for a more integrated framework. The identified hierarchy in the classroom relationship calls for interventions that empower teachers to embrace a more student-centered approach. Professional development programs can address institutional pressures, fostering a culture where teachers feel supported in promoting critical thinking. Additionally, aligning curriculum expectations with the CBC's philosophy and addressing hierarchical pressures in teacher-student dynamics are crucial steps to enhance thinking autonomy in the learning environment.

Limited Learner Participation

Both observation data and teacher interviews consistently highlight minimal learner involvement in curriculum content creation, indicating a passive expectation for teachers to provide essential content. Teachers express frustration with students' lack of openness and reluctance to discuss topics, attributing it to the expectation that teachers will provide all necessary information. Teacher X22 says: *“Students are not open minded. They don't discuss the topic you give them because they expect you to provide them with the most important content. This requires teacher's openness...Most teachers are not open, they are not interested in that.”* This finding suggests a limited engagement of students in constructing knowledge. It points to a significant challenge in realizing the goals of CBC, which emphasizes active student involvement in knowledge construction. The passivity observed among students reflects a gap between the intended autonomy and the prevailing teacher-centric approach in the classroom. The lack of learner participation poses a considerable obstacle to the CBC's objective of developing thinking autonomy. The data underscores the importance of fostering a more interactive and participatory learning environment. The literature, as outlined by Shaw (2013), reinforces the significance of student engagement in competency-based education, emphasizing the need for a paradigm shift. Shaw's (2013) insights into the importance of community-led thinking autonomy in the Rwandan context resonate with the observed limited learner participation. The discrepancy between Western individual reasoning and the Rwandan emphasis on community-led thinking autonomy adds depth to the understanding of the challenges in implementing CBC. To address limited learner participation, interventions should focus on fostering an open and interactive classroom culture. Teacher training programs can equip educators with strategies to encourage active student involvement, promoting a shift from a passive learning environment. Additionally, creating opportunities

for students to contribute to curriculum content creation can empower them to take ownership of their learning, aligning with the goals of CBC.

Cultural Impact

The interview data highlights the influence of cultural values, particularly respect for authority and hierarchy, on the effectiveness of thinking autonomy. Teachers note that students rarely challenge them, viewing teachers as the ultimate source of knowledge. Teacher X15: *“Teachers think they are omni scientists. They are the source of any knowledge or skills, competence. They are motivated by selfishness, boosting, search for respect; authoritative mentality...”* This cultural dynamic is further confirmed by the observation data, which indicates that learners tend to conform to established norms, suppressing their creative potentials. The cultural impact suggests that traditional beliefs and values play a significant role in shaping the learning environment. The reverence for authority may contribute to a reluctance among students to challenge established norms, hindering the development of thinking autonomy. The influence of cultural values on thinking autonomy underscores the importance of considering the socio-cultural context in educational practices. The findings align with existing literature (Ndiokubwayo et al., 2019), highlighting the need for culturally sensitive approaches in curriculum design and implementation. The observed reverence for authority aligns with the cultural values identified in the literature, emphasizing the role of cultural context in shaping students' attitudes towards learning and autonomy. To address the cultural impact on thinking autonomy, educational interventions should integrate cultural sensitivity into curriculum design and teaching approaches. Promoting a more inclusive and participatory learning environment that respects cultural values can foster autonomy while acknowledging the importance of community-led thinking autonomy, as highlighted in the literature. Teacher training programs can provide educators with the tools to navigate the intersection of cultural values and educational goals, fostering an environment that aligns with both.

Time Constraints and the Need for Comprehensive Content Coverage

Both interview and observation data point to challenges related to time constraints and the pressure to cover the entire curriculum. Teachers express the urgency to finish the planned content, often prioritizing completion over allowing learners to reach autonomy. Teacher X12: *“...The Head teacher comes and say: I want you to cover this. Instead of letting learners reach autonomy, you have to finish teaching the content to satisfy your boss and the public's expectations”*. The observation data indicates that the implementation of CBC is perceived as a form of cultural invasion, imposing Western ideas without considering local values and potentials. The identified time constraints and emphasis on comprehensive content coverage reflect a tension between fulfilling curriculum requirements and fostering thinking autonomy. The urgency to cover material may limit opportunities for interactive and exploratory learning experiences, hindering the development of critical thinking skills. The data on time constraints highlights a systemic challenge in balancing the demands of the curriculum with the goals of CBC. The data supports Şener and Mede's (2022) assertion that the notion of thinking autonomy is not clearly linked to CBC, and there is a lack of articulation to

inform teachers on specific strategies that reconcile curriculum policy with cultural beliefs. The observed perception of CBC as a form of cultural invasion adds depth to the literature's exploration of cultural considerations in curriculum implementation. Addressing time constraints and the pressure for comprehensive content coverage necessitates a reevaluation of curriculum design and implementation. Interventions should focus on providing teachers with the flexibility to adapt the curriculum to local contexts while maintaining alignment with educational objectives. Emphasizing the importance of critical thinking skills over content coverage in teacher training programs can help shift the emphasis towards a more learner-centered approach. Additionally, fostering a dialogue between educational policymakers, teachers, and local communities can contribute to a curriculum that respects cultural values while promoting thinking autonomy.

Suppression of Novelty

The observation data suggests that learners may be hesitant to express ideas that contradict established norms, leading to the suppression of their creative potentials. The interview data from teachers indicates a fear that students' ideas might threaten their reputation, creating a reluctance to encourage student creativity. Teacher X15: *"... I think they fear that students can generate things that threaten their reputation or put them in danger."* The identified suppression of novelty points to a potential barrier to fostering thinking autonomy. The reluctance to express unconventional ideas may hinder the development of critical thinking skills and limit the exploration of diverse perspectives, contradicting the goals of CBC. The data highlights a need to create an environment that encourages innovative thinking and embraces diverse viewpoints. The observed fear among teachers underscores the importance of cultivating a culture that values creativity and respects students' intellectual contributions. The data resonates with Teimourtash and Yazdani Moghaddam's (2017) exploration of the importance of adopting a culture of classroom application of higher-order thinking skills and the need for a supportive environment that fosters student autonomy and responsibility. To address the suppression of novelty, interventions should focus on creating a classroom culture that values and encourages diverse perspectives. Teacher training programs can equip educators with strategies to foster an open and inclusive environment, emphasizing the importance of student contributions to knowledge construction. Additionally, promoting a culture of risk-taking and embracing the potential for unconventional ideas can contribute to a more dynamic and creative learning atmosphere, aligning with the objectives of CBC.

Ownership of Learning Object

The interview data reveals that teachers feel restricted by the curriculum and external authorities, hindering learners' autonomy in constructing knowledge. Teachers express difficulty in deviating from the prescribed curriculum topics and contents, contributing to challenges in respecting students' views. The observation data notes that the curriculum is perceived as the only source of knowledge, limiting learners' input. Teacher X3: *"It is very difficult to move away from the curriculum topics and contents. This generates the problem of giving respect to students' opinion especially if they talk about issues that were not planned by the curriculum, the authorities or the teachers. It is therefore very hard to*

respect students' views. The teacher is the one who is responsible for teaching and must finish his program". The identified lack of ownership of the learning object suggests a limitation in students' autonomy and participation in the learning process. The curriculum's rigidity and the perceived restriction on deviating from it may hinder the development of critical thinking skills and limit opportunities for students to contribute meaningfully to their own learning. The data highlights a critical need to reevaluate the role of the curriculum and empower teachers to adapt it to better suit the needs and interests of the students. The findings support Teimourtash and Yazdani Moghaddam's (2017) exploration of the challenges posed by rigid curricula on the development of higher-order thinking skills. The identified difficulty in respecting students' views due to curriculum constraints adds depth to the literature's discussion on the need for flexibility in educational approaches. Addressing the lack of ownership of the learning object requires a two-fold approach. Firstly, teacher training programs should emphasize the importance of flexibility in curriculum implementation, encouraging educators to adapt content to students' needs and interests. Secondly, there is a need for a broader dialogue involving educational policymakers, teachers, and curriculum developers to explore strategies for balancing curriculum requirements with the promotion of thinking autonomy. Creating space for teachers to collaborate in designing curriculum content can contribute to a more dynamic and student-centred learning experience.

Cultural Invasion

The observation data indicates that the implementation of CBC is perceived as a form of cultural invasion, imposing Western ideas without considering local values and potentials. This perception is confirmed by literature, where the notion of thinking autonomy is not clearly linked to CBC, and strategies for adapting the curriculum to local cultural beliefs are insufficiently articulated (Şener & Mede, 2022). The identified perception of cultural invasion suggests a significant challenge in reconciling global educational frameworks with local cultural values. This may create resistance and hinder the effective implementation of CBC, impacting the development of thinking autonomy. The data underscores the importance of cultural sensitivity in educational reforms and curriculum implementation. It raises questions about the appropriateness of global educational models in diverse cultural contexts. The findings align with Şener and Mede's (2022) exploration of the challenges associated with cultural invasion in the implementation of CBC. The observed resistance and the perception of imposing Western ideas resonate with the literature's emphasis on the importance of adapting educational strategies to align with local cultural beliefs. Addressing the perception of cultural invasion requires a reevaluation of curriculum design and implementation strategies. Educational policymakers should collaborate with local communities to ensure that global frameworks are adapted to respect and integrate cultural values. Teacher training programs can play a crucial role in sensitizing educators to the importance of cultural context in teaching and promoting thinking autonomy. Moreover, fostering a dialogue between global educational frameworks and local cultural nuances is essential for creating an inclusive and effective educational environment.

Integration of the Aristotelian Concept of Aitia and Sustainable Education

The data reveals challenges in realizing thinking autonomy within the Competence-Based Curriculum (CBC) framework. Hierarchy in the classroom relationship, limited learner participation, cultural impact, time constraints, suppression of novelty, and a lack of ownership of the learning object contribute to a complex educational landscape. Applying the Aristotelian concept of Aitia, these challenges can be seen as contributing factors or causes influencing the limited development of thinking autonomy. The hierarchical structure, influenced by cultural values and time constraints, acts as an aitia that restricts the dynamic interaction required for effective knowledge construction. In the Aristotelian sense, understanding the aitia behind these challenges is essential for addressing them. The hierarchical classroom relationship and cultural impact can be viewed as fundamental causes inhibiting thinking autonomy. The time constraints and emphasis on comprehensive content coverage may be considered contributing factors perpetuating the existing structure. Aitia, as explained by Aristotle, refers to the causes or explanatory factors behind a phenomenon. In this context, the identified challenges in realizing thinking autonomy are not isolated incidents but interconnected causes influencing each other. The hierarchical structure, cultural values, and time constraints can be seen as intrinsic aitia shaping the educational landscape. Sustainable education, in the context of CBC, necessitates a holistic and adaptable approach that respects cultural values and promotes thinking autonomy. A sustainable educational model must address the identified aitia, fostering an inclusive and participatory learning environment that aligns with both local cultures and global educational goals. Interventions should focus on addressing the fundamental causes identified in the data. This includes promoting cultural sensitivity in curriculum design, providing flexibility within the curriculum to adapt to local contexts, and empowering teachers to facilitate interactive and participatory learning experiences. In this way, the educational system can evolve sustainably by considering the root causes, fostering thinking autonomy, and aligning with the principles of CBC within diverse cultural contexts.

Conclusion and Recommendations

In conclusion, the study has shed light on significant challenges within the implementation of the Competence-Based Curriculum (CBC), particularly in fostering thinking autonomy in the classroom. The findings highlight a hierarchical relationship between teachers and learners, limited learner participation, cultural influences, time constraints, suppression of novelty, and a lack of ownership of the learning object as barriers to achieving the intended objectives of CBC.

The contribution of this study to existing literature lies in its comprehensive examination of interconnected challenges through the lens of the Aristotelian concept of Aitia. By identifying these challenges as intrinsic causes shaping the educational landscape, the study provides a nuanced understanding of the factors inhibiting thinking autonomy within the CBC framework.

However, it is crucial to acknowledge the limitations of the study. The research is context-specific and may not be entirely generalizable to other educational settings. Additionally, the qualitative nature of the study may limit the breadth of quantitative data that could provide more extensive insights.

Moving forward, future research should explore the effectiveness of interventions aimed at addressing the identified challenges. This includes initiatives such as teacher training programs, curriculum adaptations, and strategies for fostering an inclusive and participatory learning environment. Moreover, longitudinal studies can provide insights into the sustained impact of these interventions over time.

Based on the findings of the study, the following recommendations are proposed to address the identified challenges and enhance the implementation of the Competence-Based Curriculum (CBC) while fostering thinking autonomy:

Teacher Training Programs: Develop and implement comprehensive teacher training programs that focus on empowering educators to embrace a student-centered approach. Include modules that address the hierarchical pressures experienced by teachers, providing strategies for navigating institutional expectations while fostering critical thinking skills in students.

Cultural Sensitivity in Curriculum Design: Collaborate with educational policymakers, teachers, and local communities to integrate cultural sensitivity into curriculum design and implementation. Create space for teachers to contribute to the design of curriculum content, ensuring that it aligns with both global educational goals and local cultural values.

Interactive and Participatory Learning Environments: Foster a more interactive and participatory classroom culture by implementing strategies to encourage active student involvement. Provide teachers with tools and techniques to create an open and inclusive environment that values diverse perspectives and encourages student contributions to knowledge construction.

Flexibility in Curriculum Implementation: Encourage flexibility in curriculum implementation to allow teachers the autonomy to adapt content to local contexts and students' needs and interests. Emphasize the importance of critical thinking skills over comprehensive content coverage in teacher training programs.

Longitudinal Studies: Conduct longitudinal studies to assess the sustained impact of interventions aimed at addressing the identified challenges. Track changes in the classroom dynamic, teacher-student relationships, and student engagement over an extended period to evaluate the effectiveness of implemented strategies. **Community Engagement:** Foster a dialogue between educational policymakers, teachers, and local communities to ensure that global educational frameworks are adapted to respect and integrate cultural values. Involve local communities in the decision-making process regarding curriculum design and implementation, promoting a sense of ownership and

cultural inclusivity. Encourage a Culture of Creativity: Implement initiatives that promote a culture of creativity in the classroom, encouraging students to express novel ideas without fear of judgment. Provide support and recognition for teachers who actively create an environment that values and encourages diverse perspectives.

Alignment with CBC Philosophy: Align curriculum expectations with the underlying philosophy of the Competence-Based Curriculum, emphasizing problem-solving activities over traditional knowledge transmission. Regularly review and update curriculum guidelines to ensure that they reflect the principles of CBC and support the development of thinking autonomy.

By implementing these recommendations, educational stakeholders can work towards creating a more inclusive, culturally sensitive, and sustainable educational environment that aligns with the goals of CBC and fosters thinking autonomy among students.

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