

Influence Of In-Service-Teacher Training On Effective Implementation Of Competence Based Curriculum In Public Primary School In Makadara Sub-County, Nairobi County, Kenya

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Abstract

The move towards a competence-based learning modality is crucial and key to ensuring learning institutions churn out all-rounded and skillful labor force. However, competence-based education is resource-intensive and countries that have had to implement it at the national education level have had to cater with the resource-demand including training and retraining of teachers. In low- and middle-income countries, achieving the optimum output from competence-based education is challenging due to limited resource availability and teachers may not be adequately trained to effectively implemented such as curriculum. In the recent past, Kenya replaced its 8-4-4 education system with the CBC model amidst a financially constrained economy and the war with corruption. Consequently, this study sought to investigate the influence of in-service teacher training on effective implementation of CBC in a resource-constrained population. A mixed method approach utilizing descriptive survey design was used to allow both qualitative research and quantitative research methods. Target population for the study comprised teachers, school head-teachers. Thirteen teachers and one school head teacher were sampled. The study found out that 76.9% of the sampled teachers had participated in CBC in-service training and termed it as very effective. It was found that 76.9% of the teachers had undergone CBC in-service training during the past year. Most of the teachers, who attended these sessions occasionally, rated them as either very effective (30.8%) or effective (38.5%) in enhancing their teaching skills. Half of the teachers considered the seminars and workshops to be relevant to the demands of the CBC curriculum, though only 53.8% of schools held them occasionally. Despite this, 58.3% of the teachers noted improvements in their teaching techniques as a result of the training. Additionally, 61.5% reported that they were now able to implement CBC more easily. However, challenges such as financial constraints, lack of time, and resistance to change hindered access to training. Inadequate laboratories and digital resources were also significant barriers to effectively implementing CBC.

Keywords: *In-service Teacher Training, Effective Implementation, Competency Based Curriculum, Primary school*

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I. Introduction

The 21st century has observed a tremendous change in the society not only in terms of industrial and technological development but also educational perspectives “(Alpaydın & Demirli, 2022). As a result, countries around the world have changed their national educational curriculum so that they churn out skilled and competent workforce for the 21st century (Hastedt & Care, 2022). For instant, Finland (Lähdemäki, 2019) and New Zealand (Eley & Berryman, 2018) have adopted competency-based education which instead of focusing solely on traditional academic subjects, schools focus more on impacting problem-solving skills and critical thinking skill, to the students. Additionally, Singapore’s education system commonly termed as “Teach Less, Learn More” adopts a competency-based framework whereby education emphasis is on mastery of key competencies and skills rather than rote memorization (Elems-Ikwegbu, 2023). Evidently, this has led to these countries churning out some of the world’s most skillful and holistic workforce that have not only impacted economic development in their countries but in other countries.

In Africa, several countries including Zambia, Rwanda and Tanzania have implemented competency-based education in both primary and secondary schools (Nsengimana et al., 2020). However, the success of this implementation has been challenged by inadequate resources needed to fully realize the effectiveness of CBC (Ruth & Ramadas, 2019). Initially, the national curriculum of Kenya was the 8-4-4 system but in 2017, it was overhauled because it was termed as being too much theoretical, thus the new competency-based curriculum was

instituted with emphasis on tackling problems, teamwork, communicating effectively, critical thinking and finding creative solutions (Mugambi, 2022).

Overhauling knowledge acquisition, curriculum requires availability and provision of adequate resources in terms of availability of sufficient and properly trained tutors. Notably, CBC is a resource-intensive curriculum whose effectiveness can only be realized when the above resources are available. Countries such as Singapore, Finland and New Zealand have dedicated sufficient resources for CBC implementation which has enabled them reap the benefits of the curriculum (Elems-Ikwegbu, 2023). Kenya is a developing country and is resource-strained; and available resources have to be shared with other sectors of the government (M' mboga Akala, 2021). These challenges have had stakeholders having much skepticism about the new curriculum and nothing seems to be done about it; at least publicly (Waihenya, 2021). Consequently, current study aimed to investigate the influence of in-service-teacher training on effective implementation of CBC in public primary school in Makadara Sub-County.

Makadara Sub-County is primarily a cosmopolitan urban center characterized by a mix of residential, commercial, and industrial areas and a population largely falling within lower to middle social classes (Kinuthia, 2019). The sub-county hosts 27 public primary schools that are densely populated with students (Kenya life, n.d.). These students are largely from informal settlements present in the sub-county such as Mukuru slums (Pashayan and Ordu, 2023). Despite this dense population, there has never been much significant improvement in public primary set up in that infrastructural development and distribution of human resource thus the student-teacher ratio is high (Kisia, 2022). Moreover, other aspects of CBC such as contents to be delivered to students when they are home is a challenge due to the living standards of communities in Makadara; whereby much priority by parents is mainly earn a living (Omariba, 2022). This leaves some of the students to undertake homework on their own yet parents should be involved. Thus, these challenges in Makadara present a concern affecting effective roll out of CBC in public primary education centers. Therefore, current research chose Makadara because of these prevailing challenges.

II. Research Objective

To establish the influence of in-service-teacher training on effective implementation of CBC in public primary school in Makadara sub-county.

III. Research Question

How can in-service-teacher training influence the effective implementation of CBC in public primary school in Makadara sub-county?

IV. Statement Of The Problem

The 21st century has observed a tremendous change in the society not only in terms of industrial and technological development but also educational perspectives “(Alpaydın & Demirli, 2022). As a result, countries around the world have changed their national educational curriculum so that they churn \out skilled and competent workforce for the 21st century (Hastedt & Care, 2022). For instant, Finland (Lähdemäki, 2019) and New Zealand (Eley & Berryman, 2018) have adopted competency-based education which instead of focusing solely on traditional academic subjects, schools focus more on impacting problem-solving skills and critical thinking skill, to the students. Additionally, Singapore’s education system commonly termed as “Teach Less, Learn More” adopts a competency-based framework whereby education emphasis is on mastery of key competencies and skills rather than rote memorization (Elems-Ikwegbu, 2023). Evidently, this has led to these countries churning out some of the world’s most skillful and holistic workforce that have not only impacted economic development in their countries but in other countries.

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Overhauling knowledge acquisition, curriculum requires availability and provision of adequate resources in terms of availability of sufficient and properly trained tutors, presence of adequate educational resources, sufficient community engagement together with parental involvement (Muchira et al., 2023). Notably, CBC is a resource-intensive curriculum whose effectiveness can only be realized when the above resources are available. Countries such as Singapore, Finland and New Zealand have dedicated sufficient resources for CBC implementation which has enabled them reap the benefits of the curriculum (Elems-Ikwegbu, 2023). Kenya is a developing country and is resource-strained; and available resources have to be shared with other sectors of the

government (M'mboga Akala, 2021). As such, aspects of parental involvement and community engagement may be insufficient as these individual's primary focus on earning a daily living (Jane et al., 2020).

These challenges have had stakeholders having much skepticism about the new curriculum and nothing seems to be done about it; at least publicly (Waihenya, 2021). In this context, the study addressed these specific gaps utilizing a mixed method approach, simple random and purposive sampling and also gathering primary data.

This study aimed to assess determinants influencing effective implementation of CBC across public primary schools in Makadara sub-county, Nairobi area, Kenya. In the investigation process, it was found out that the stakeholders can as well include sponsors and owners to enhance the effectiveness of CBC implementation through collaboration with external partners to provide additional support and resources. This promotes stakeholder involvements. The study therefore recommended that, the stakeholders like community leaders should fully participate through PTA programmers, resource provision to effectively implement the CBC system.

V. Empirical Literature Review

Educators constitute a critical human resource element within the framework of any educational system. Among the pivotal components facilitating the effective execution of the curriculum, teacher training stands as a central factor. Key individuals designated as master trainers, within the context of the "Competency-Based Curriculum, have been recognized, including entities such as the Education Ministry, Teacher Service Commission, Kenya Institute of Special Education (KISE), Kenya National Examination Council, Centre for Mathematics, Science, and Technology Education in Africa (CEMASTEIA), and the Kenya Education Management Institute (KEMI) (Ministry of Education - Kenya, 2022). Additionally, a cadre of CBC champion teachers has been identified and engaged in the role of instructing fellow educators.

Training serves as a function in the execution of the Competency-Based Curriculum through ensuring that educators are well-versed in its principles and "components. Equipping them with a comprehensive understanding of the CBC and its long-term advantages enables them to wholeheartedly embrace it and actively contribute to a deeper comprehension, thereby evolving into advocates for this educational shift. Therefore, training acts as an essential instrument in facilitating the comprehension of a novel educational concept, ultimately demystifying it for all stakeholders, as emphasized by Burke (2005).

The significance of teacher training cannot be overstated in the realm of implementing the Competency-Based Curriculum. In a case study conducted by Kabombwe and Mulenga, (2019), their research in Lusaka, the capital of Zambia revealed that 67% of history educators exhibited a deficiency in comprehension concerning the Competency-Based Curriculum (CBC) or the concept of outcome-based learning. Furthermore, the investigation unearthed that the educational practices within selected historical secondary schools suffered from a lack of adequate utilization of CBC or outcome-based strategies. This insufficiency was primarily attributable to a dearth of knowledge and experience among historical teachers in employing competence-based methodologies. Here in Kenya, Momanyi and Rop (2019) conducted a study assessing teacher readiness for the implementation of competency-based education. They found that educators were inadequately trained and had poor comprehension of CBC implementation and how assessment was to be done.

In a same vein, "Ondimu (2018) investigated the preparedness of educators to apply CBC in Dagoretti North Subcounty of Nairobi County's public and private schools. His findings made clear the necessity of more professional development training for teachers so as to increase their comprehension of the new curricular model and their topic knowledge and ICT proficiency. A study regarding school aspects impacting the integration of CBC within public preschools in Garissa Subcounty of Garissa County, Kenya, was carried out by Abdullahi (2019). The conclusions were that a sizable portion of teachers lacked proper CBC training, especially with regard to ICT. "

Lastly, Waweru (2018) conducted research regarding the implementation of CBC in Nyandarua North Sub- County. His study identified the necessity for supporting teachers in incorporating creativity and imagination into their instructional practices. Additionally, Waweru observed a lack of instructional materials, especially for newly introduced subjects, which could aid teachers in their instruction. Overall, these studies have been done post-implementation of the initial phases of CBC and all echo the challenge of inadequacy of teacher-capacitation. Consequently, poorly trained teachers insufficiently and directly affect the quality of education learners are receiving. This in turn, on a general perspective, reflects upon a population's education level thus risking having poorly knowledgeable youths once they finish school.

VI. Research Methodology

To investigate the influence of in-service-teacher training on effective implementation of CBC in public primary school, a mixed method approach was employed based on Schoonenboom & Johnson (2017) and utilized a descriptive survey design (Aguino, 2018). This allowed collection of a comprehensive quantitative and qualitative data from participants. The study was conducted in selected public primary schools situated within Makadara Sub-County, Nairobi County. The sub county is situated in the eastern part of Nairobi County (Latitude:

-1 17' 00" and Longitude: 36 53' 00") where it is bordered by Starehe regional subdivision to the west, Kamukunji Sub-County to the north, and Embakasi East subdivision to the east (NGCDF, 2015).

Target population for this study comprised 452 public primary school teachers and head teachers in the 27 public primary schools present in the sub county. In this study, 13 teachers were selected through a simple random sampling technique from the pool of 452 teachers while one head teacher was purposively sampled from a pool of 27 school head teachers. Simple random sampling minimized selection bias of study participants ensuring validity purposive sampling. Was utilized as it allowed researcher to focus on specific individuals who could provide rich and detail insights for the phenomena (Campbell et al., 2020).

VII. Research Findings And Discussions

Demographic Characteristics of Public Primary School Teachers

Demographic profile of study participants shows that most of the teachers were females (69.2%), and aged between 36 to 45 years of age (46.2%). Additionally, the majority of teachers had attained diploma (54.5%) has their highest level of education and had a teaching experience between 11 to 15 years (38.5%). Further, nearly a quarter of the respondents (23.1%) had been teaching for more than 20 years. Notably, none of the sampled teachers had attained a masters' degree. Notably, the majority were females, aged 36 to 45 years, with significant teaching experience, and holding diplomas as their highest educational qualification. The demographic characteristics of the study participants are presented in **table 1** below

Table 1: Demographic features of Respondents (Teachers) in Public Primary Schools in Makadara Sub-County

Demographic characteristic		Frequency (n)	Percentage (%)	Valid percent (%)
Gender	Male	4	30.8	30.8
	Female	9	69.2	69.2
Age (years)	18-25	1	7.7	7.7
	26-35	4	30.8	30.8
	36-45	6	46.2	46.2
	46-55	2	15.4	15.4
Teaching experience	0-5 yrs.	1	7.7	7.7
	6-10 yrs.	2	15.4	15.4
	11-15 yrs.	5	38.5	38.5
	16-20 yrs.	2	15.4	15.4
	21 yrs. and above	3	23.1	23.1
Highest level of education	Diploma	6	46.2	54.5
	Bachelor's Degree	5	38.5	45.5
	Master's Degree	0	0	0
	Blanks	2	15.4	

Source: Researcher, 2024

Influence of In-Service-Teacher Training on Effective Implementation of CBC in Public Primary School in Makadara Sub-County

This study aimed to establish the influence of in-service-teacher training on effective implementation of CBC in public primary school in Makadara sub-county. Data shown in **table 2** was collected using questionnaires and interviews. Feedback is outlined in Table 2. Evidently, the results show that every sampled teacher had attended a continuous training for CBC since inception of the curriculum and that 76.9% of them had attended the training within the past year. Further, and in terms of attendance frequency, majority of sampled teachers stated that they occasionally attend in-service training programs.

However, 38.5% agreed that in-service training programs were effective in improving their teaching skills with an additionally 30.8% indicating that such programs were very effective for skill improvement. Often than not, these training programs are carried out in form of seminars and workshops. Remarkably, slightly behold half (53.8%) among the selected teachers indicated that their schools sometimes do conduct seminars and workshops. However, 15.4% indicated that their schools never conduct seminars and workshops with a similar percent indicating that it is done either quarterly or annually.

Overall, majority of teachers (61.5%) indicated that such in-service trainings have significantly improved their ability to implement CBC. An additional 38.5% also agreed that the training have improve their ability to implement CBC. Lastly, the larger portion of the sampled teachers came into agreement that in-service training has improved their teaching methods for CBC (58.3%) and that workshops conducted are relevant to the CBC curriculum needs (50%). An equal percentage of said teachers strongly agreed (33.3%) and (33.3%) agreed respectfully that there is adequate follow-up after training sessions to ensure implementation.

Table 2 Responses of Teachers on In-Service Training and How It Has Influenced Effective CBC Implementation

Strongly Agree (SA); Agree (A); Neutral (N); Disagree (D); Strongly Disagree (SD)

Variable	Yes	Frequency	Percentage		
Have you attended any professional development training for CBC since its inception?	Yes	13	100		
	No	0	0		
Have you attended any professional development for CBC on the past year?	Yes	10	76.9		
	No	3	23.1		
How often do you attend in-service training programs	Never	0	0		
	Rarely	1	7.7		
	Occasionally	12	92.3		
	Frequently	0	0		
Rate the effectiveness of in-service training programs in improving your teaching skills	Very ineffective	2	15.4		
	Ineffective	1	7.7		
	Neutral	1	7.7		
	Effective	5	38.5		
	Very effective	4	30.8		
How often are seminars and workshops conducted in your school?	Monthly	0	0		
	Quarterly	2	15.4		
	Annually	2	15.4		
	Sometimes	7	53.8		
	Never	2	15.4		
How has in-service training impacted your ability to implement the Competence-Based Curriculum (CBC)?	Significantly improved	8	61.5		
	Improved	5	38.5		
	No impact	0	0		
	Deteriorated	0	0		
	Significantly deteriorated	0	0		
	SA	A	N	D	SD
In-service training has improved my teaching methods for CBC.	7 (58.3)	4 (33.3)	1 (8.3)	0	0
The workshops conducted are relevant to the CBC curriculum needs.	6 (50.0)	5 (41.7)	1 (8.3)	0	0
There is adequate follow-up after training sessions to ensure implementation.	4 (33.3)	4 (33.3)	1 (8.3)	3(25.0)	0

Source: Researcher, 2024

Further, when the sampled school head was interviewed concerning teacher training; two main themes from her responses were obtained: in-service teacher training and implementation of CBC. Under the theme of in-service training, availability of training programs, perception of training effectiveness, and challenges in accessing training were identified as key subthemes. The interviewee emphasized the different types of Professional development training sessions. available for teachers, such as online classes, workshops, and seminars. These programs seek to enhance educators with crucial abilities so as to implement the CBC effectively. This was endorsed by one of interviewees who declared the following,

"One of the in-service training programme that has been put in place is the online classes, whereby links are sent, and teachers join training through digital tools. We also have workshops where teachers attend. We also have seminars, which are called from time to time."

The interviewee perceived the training programs as effective, helping teachers to change from the older 8-4-4 system and embrace the CBC educational model. This positive perception had contributed to a better attitude among teachers toward the new curriculum. This was echoed by an interviewee who conveyed that,

"The perception is positive because when this program was kick-started, there was a lot of negativities from teachers... Through these programs, teachers have developed even a positive attitude, and they have learned and are able to use the acquired knowledge in implementing the curriculum."

Teachers face several challenges in accessing in-service training opportunities, including resistance to change, lack of finances, and time constraints. These challenges hinder the full transition to and adoption of the CBC. Infact the sampled head teacher through the interview supported that by acknowledging this;

"There are teachers who have taught the 8-4-4 curriculum... they have not been able to fully adjust from 8-4-4 to the CBC curriculum... Another challenge is lack of finances. Teachers would really wish to equip themselves, but sometimes they don't have the funds to do so."

Secondly, the theme of CBC implementation also emerged from the interviewee responses with key subthemes being key aspects of CBC in training, learner-centered approach and resource challenges. as stipulated by the sampled school head. The training programs covered several key aspects of the CBC, including communication, collaboration, digital literacy, and self-efficacy. These aspects are crucial for the effective implementation of the CBC in the classroom. This was supported by one the interviewee who had the following to say;

"We have aspects like communication and collaboration, the use of digital tools, that is digital literacy, self-efficacy, and several others... They have really been effective in the implementation."

Additionally, the CBC emphasizes a learner-centered approach, encouraging students to think critically and creatively. The interviewee highlights that students learn from each other and sometimes even teach the teachers. This was supported by the interviewee who had the following to say;

"CBC mostly is not teacher-centered. It is learner-centered. So, they learn from each other... Sometimes even us as teachers, we learn from the learners themselves because these minds are still growing, and they think outside the box."

However, the interviewee also noted that there was a lack of resources necessary for the effective implementation of the CBC, such as digital tools, books, and laboratories. These resource limitations hinder the ability of schools to fully realize the CBC's goals.

"Resources are available, but inadequate... There are very many resources that we need in the implementation of the CBC curriculum... Digital tools, are not available in the school. They're very limited... We don't have a laboratory at the moment."

VIII. Discussion

Current study aimed to establish the influence of in-service-teacher development on effective implementation of CBC in public primary school in Makadara sub-county. Data on demographic characteristics and influence of in-service-teacher was collected using questionnaires and interviews. Correspondingly, the demographic profile was found to be consistent with the Kenyan education sector; where female teachers often outnumber their male counterparts, particularly in primary schools, as indicated in the report by Kenya Research Institute for Public Policy Analysis (2024). Such dominance of diploma holders among the teachers is also notable, reflecting the historical emphasis on diploma qualifications in teacher training colleges across the country (Nyankanga et al., 2013). In the current contemporary times, this is changing though at a very slow pace.

The absence of teachers with a master's degree might raise concerns about the depth of expertise available for implementing a complex curriculum like CBC, which demands advanced pedagogical skills. This is particularly critical considering that other studies, such as those Porcenaluk et al. (2023), Stress the necessity of lifelong professional development for teaching staff in effectively delivering new curricula. The study's findings regarding teachers' age and experience are also noteworthy. The fact that most teachers are in the mid-career stage (11 to 15 years of experience) suggests a workforce that is experienced but perhaps also at risk of stagnation if not provided with ongoing professional development opportunities. Comparatively, in regions where educational reforms have been more successful, as reported by Ngeno (2023), there is a substantial correlation between the continuous upskilling of instructors and the successful implementation of new curricula

Overall, the findings on influence of in-service teacher training on the effective implementation of the CBC reveals a generally positive impact, but also expose several challenges that need to be addressed for the successful adoption of the new curriculum. The study shows that all the sampled teachers had attended in-service training since the inception of CBC, with the majority having participated in such training within the past year.

This is encouraging, as it suggests a strong commitment to teacher development, which is crucial for the successful implementation of any educational reform. However, the study also found that while most teachers occasionally attend these programs, none of them reported frequent attendance. This raises concerns about the continuity and consistency of professional development, which are essential for keeping teachers up-to-date with evolving pedagogical strategies. Studies by Ventista & Brown (2023) and Nkundabakura et al. (2024) support the importance of ongoing training, indicating that frequent and sustained professional development is more effective in fostering meaningful changes in teaching practices. The occasional nature of attendance reported in this study may limit the long-term impact of the training on the teachers' ability to implement CBC effectively.

The findings also highlighted that a significant proportion of teachers found the in-service training to be either effective or very effective in improving their teaching skills, with 61.5% stating that these programs had significantly improved their ability to implement CBC. This positive assessment aligns with findings from other studies, such as one by Isaboke et al. (2021), which reported that in-service training significantly enhances teachers' competence in delivering CBC. However, it is noteworthy that a small percentage of teachers found the training to be ineffective or very ineffective. This discrepancy could be due to variations in the quality and relevance of the training programs attended, an issue also highlighted by Akala (2021), who found that the effectiveness of in-service training programs in Kenya is often compromised by inadequate content alignment with the curriculum's demands.

The study further reports that the majority of schools conduct seminars and workshops only occasionally, with some teachers indicating that their schools never conduct such programs or do so infrequently (quarterly or annually). This sporadic organization of professional development activities could weaken the potential benefits of the training. Research by Geletu (2023) has shown that regular, school-based professional development activities, such as peer coaching and collaborative planning, are critical for the continuous reinforcement of new

teaching strategies introduced during formal training sessions. The infrequency of these activities in schools may therefore impede the full realization of CBC's objectives.

Qualitative results illustrated availability of various types of in-service training, such as online classes, workshops, and seminars. This variety is commendable and aligns with best practices in professional development, which advocate for diverse and flexible training modalities to accommodate different learning preferences among teachers. However, several challenges in accessing these training opportunities, including resistance to change, lack of finances, and time constraints were also noted. These barriers are consistent and strongly supports the findings of Opondo et al. (2023), which identified similar obstacles in the implementation of CBC in other Kenyan regions. The resistance to change, particularly among teachers accustomed to the 8-4-4 system, highlights the need for more targeted interventions to address mindset shifts. Additionally, the lack of financial resources is a significant barrier that can undermine the sustainability of in-service training programs, as echoed Zickafoose et al. (2024), who argue that financial constraints are a pervasive issue in the education system of Sub-Saharan countries, limiting access to quality professional development.

It was also evident from the interview that the training programs cover crucial aspects of CBC, such as communication, collaboration, digital literacy, and self-efficacy; the implementation is hampered by inadequate resources, such as digital tools, books, and laboratories. This lack of resources is a significant impediment to the effective implementation of CBC; therefore, this concurs with Opondo et al. (2023) findings who found that resource limitations are one of the primary challenges facing CBC implementation in Kenya. The emphasis on a learner-centered approach in CBC requires adequate resources to facilitate hands-on learning and critical thinking, which are difficult to achieve without proper tools and materials.

IX. Conclusion

In conclusion, the study established that 76.9% of the sampled teachers had participated in CBC in-service training within the previous year. The majority of teachers, who attended these sessions occasionally, reported that they were either very effective (30.8%) or effective (38.5%) in helping them improve as teachers. Half of the teachers deemed the seminars and workshops relevant to the requirements of CBC though only 53.8% of schools occasionally conducted them. Nonetheless, 58.3% of the teachers reported improved teaching techniques as a result of such trainings. Furthermore, 61.5% of the teachers said they could now apply CBC with much more ease. Notably financial limits, time constraints, and aversion to change were challenges to training access; with inadequate labs and digital tools being among other resources that impeded the successful deployment of CBC.

Therefore, in regard to the influence of in-service teacher training on effective implementation of CBC is a critical determinant in Makadara Sub-County: - while the training programs have had a generally positive impact on teachers' ability to implement the curriculum, the occasional nature of attendance, challenges in accessing training, and resource limitations pose significant barriers. The findings suggest that for CBC to be fully realized, there needs to be a more consistent and supportive approach to professional development, with adequate resources and efforts to address the financial and logistical challenges faced by teachers.

X. Recommendations

This study recommends that Schools needs to strategize in light of increasing the frequency and accessibility of CBC in-service training sessions to ensure all teachers receive adequate and consistent training. This could include online workshops and seminars to overcome time constraints. Furthermore, government and education stakeholders should allocate more funds to ensure that all teachers can attend these training sessions without financial strain. Additionally, investing in modern labs and digital tools would further support the training process and the effective application of CBC.

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