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Effects of Teacher Professional Development on Implementation of Competency-Based Curriculum in Junior Schools in North Imenti Sub-County, Meru County

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ABSTRACT

Kenya is experiencing a gradual transition from a content-focused education (8-4-4) to a competency-based curriculum (2-6-3-3-3). However, teachers have insufficient pedagogical preparedness and lack comprehensive content knowledge for a competency-based curriculum. This research examined the effects of teacher professional development on implementing the competency-based Curriculum in junior secondary schools in North Imenti, Meru County. The study's objectives were to evaluate how enhancements in professional development, particularly in pedagogical skills, could facilitate the successful implementation of CBC. The literature review synthesizes existing studies on competency-based education, focusing on aligning teacher professional development with curriculum demands. The study used a descriptive survey design. The target population comprised 26 junior schools in North Imenti Sub-County, Meru County. The respondents were two sub-county education directors, 26 head teachers, and 70 junior school teachers. Through stratified sampling, the sample size was 31 Respondents, that is, eight head teachers, 21 teachers, and two sub-county directors of education. The data was collected using Questionnaires, interview schedules, and observation checklists. The findings indicated that most junior school teachers (95%) had undergone professional development in implementing a competency-based curriculum. The study concluded that Teacher Professional Development is essential for equipping teachers with the necessary skills and knowledge for the effective implementation of a Competency-Based Curriculum. The study recommended the development of continuous, competency-focused professional development initiatives that address these critical areas of instructional methodologies.

Keywords: Competency-based Curriculum, teachers' professional development, pedagogical skills.

INTRODUCTION

The implementation of the Competency-Based Curriculum in Kenya is occurring in stages, beginning with pre-primary and primary schools, which started in January 2018. Wambua, (2019) suggests that during the implementation of a curriculum, frequent evaluations should be conducted by collecting data to identify any challenges encountered and adjust the implementation strategies accordingly. The recorded experiences from other countries that have previously implemented a Competency-Based Curriculum reveal that the initial stages of CBC implementation are often met with numerous challenges.

Teachers are responsible for executing the Curriculum, so they play a significant role in enhancing and transforming students. Consequently, the quality of education depends heavily on the quality of the teacher. Thus, teachers must be highly skilled in applying teaching strategies that are crucial for effective student learning. For competency-based Curriculum to succeed, instructors must be sufficiently knowledgeable to engage their students in the learning process, as teachers are key players in curriculum implementation, (Sitienei, 2020). Since Teachers are responsible for implementing the Curriculum, they must possess sufficient expertise to execute it effectively. Providing teachers with professional development is essential for equipping them with the skills and knowledge needed to manage a new curriculum.

Professional development of teachers can significantly impact the implementation of the CBC. Molapo and Pillay, (2018) established that when teachers lack the necessary skills and knowledge and minimal or no training is provided, the Curriculum's effective rollout is obstructive. Waweru and Muasya, (2019) established that the number one critical challenge blocking the effective implementation of CBC is the lack of teacher training. Most teachers felt that the implementation of CBC was hurriedly done without first consulting teachers. Teachers are bared equipped with required core competencies for implementation of CBC. Despite the effort put forth by Ministry of Education and Teachers' Service Condition in Teacher Professional Development, the extent of teachers' proficiency is still unknown. To ascertain the extent of teachers' competence in the implementation of CBC, the findings of this research offer vital knowledge to the Ministry of Education on the effects of teacher professional development on the implementation of the competency-based Curriculum in junior schools.

Objectives

1. To determine the effect of teacher pedagogical skills on the implementation of a Competency-based Curriculum in Junior Schools in North Imenti Sub-County, Meru County.
2. To find out the effect of teacher content knowledge on the implementation of Competency-based Curriculum in Junior Schools in North Imenti Sub-County, Meru County.
3. To examine the effect of teachers' assessment on implementing the competency-based Curriculum in junior Curriculum North Imenti Sub-County, Meru County.

Theoretical literature

The study used curriculum implementation theory by (Gross, 1971). According to this theory, factors such as the teacher's competency help implement any education curriculum. Gross also established that teachers should be competent in knowledge and skills regarding what is being implemented since they are the leading implementers of the Curriculum in class. When teachers are not informed of curriculum changes, they cannot implement them effectively. They should be well-informed and educated on all the changes, knowledge, and skills needed to implement the education program.

Curriculum implementation theory highlights the main factors that influence curriculum implementation. These factors include organization structure, clarity of innovation, support from leadership, and capability of the implementers. For effective curriculum implementation, Gross emphasized that teachers should clearly understand its methods and goals. Teachers' professional programs, workshops, and training sessions help teachers understand competency based curriculum's (CBC) objectives and principles, enabling them to implement them effectively.

School leadership plays an essential role in supporting teachers when implementing new Curriculum. Gross emphasizes that administrative support is vital for the effective implementation of CBC. Therefore, professional development should involve leadership training, ensuring school leaders are ready to offer support and resources, and encouraging teachers as they implement new curricula. Gross also insists that professional development programs should train teachers on how they can work within their organizational structure for effective implementation of CBC.

LITERATURE REVIEW

Teacher pedagogical skills and implementation of Competency-based Curriculum

Shifting from a Knowledge-based curriculum to CBC requires a change in instruction; hence, teachers should undergo professional development to be well-prepared to implement CBC. Teachers play a pivotal role in executing a Competency-based curriculum; hence, they must possess the necessary skills, knowledge, and capabilities to establish an effective learning environment (Syomwene, 2017).

Teachers are crucial facilitators in facilitating students' opportunities to realize their potential (Zeiger, 2018).

Therefore, teachers need skills and knowledge to help them apply pedagogical approaches, prepare lesson plans and assessment materials, and select teaching and learning materials to help implement CBC in schools (Syomwene, 2017).

According to a study by Wanjiku (2022) on factors affecting CBC implementation in North Eastern primary schools in Kenya, only 32% of teachers had gone for CBC training on pedagogical skills. Moreover, studies by Okello (2022) in Kajiado indicated that only 11% of teachers had yet to undergo the competency based training. Teachers indicated that the training was advantageous because it gave them the essential competencies and skills to implement the CBC. Instructional methodologies represent a critical area requiring further training for teachers, given that the approaches to teaching the CBC fundamentally differ by being more focused on the learner, as opposed to the traditional, teacher-centered methods.

Teacher content knowledge and implementation of Competency-based Curriculum

Integrating technology into teaching and learning enables teachers and students to develop new tasks and ideas, facilitating a deeper acquisition of knowledge. Okello (2022) emphasized that in-service and pre-service teacher training programs have fallen short of adequately preparing educators with the necessary information communication technology (ICT) skills. This shortfall hinders their ability to utilize the technological tools essential for integrating technology into classroom instruction.

A study by Ondimu (2018) regarding the readiness of teachers to implement the CBC in primary schools in Nairobi revealed that 73% of the teachers had not received training on integrating ICT into classrooms. Hence, teachers need these ICT skills to implement CBC in schools easily. Another study conducted in Tanzania by Mwindaji (2015) cited Isaboke et al. (2021) established that only 24% of lesson plans prepared by teachers aligned with the CBC lesson plan guidelines. This indicates that during teachers' professional development, training on preparing a CBC lesson plan should be prioritized for the successful implementation of CBC. Similarly, a study by Okoth (2016) as referenced by Isaboke et al. (2021), looked into the proficiency of English teachers in crafting lesson plans. It was found that teachers were still employing lesson plans designed for content-based curricula, indicating that inadequate in-service training significantly affected the adoption of the new Curriculum. Furthermore, a Curriculum evaluated by KNUT (2019) into the preparedness of primary school teachers for implementing the new Curriculum revealed that 20% were adept at using CBC methodologies, and about 70% lacked professional development training geared towards enacting the new educational framework.

According to research by Molapo and Pillay (2018) in South Africa, the professional development of teachers can significantly impact the implementation of the CBC. The study suggested that when teachers are deficient in the necessary skills and knowledge and when minimal or no training is provided, it obstructs the effective rollout of the Curriculum. Another curriculum by Amber and Kim (2018) in Cameroon established that despite teachers undergoing professional development, implementing CBC was still a challenge in most cases due to a lack of resources and need to learn how to improvise those resources.

Teachers' assessment and implementation of Competency-Based Curriculum

According to a study conducted in Tanzania by Mwindaji, (2015), cited by Isaboke et al., (2021), that investigated whether teachers were following formative assessment as per the guideline of CBC, established that less than 50% of teachers conducted formative evaluation successfully. Also, the study established that only 20% of teachers involved learners in classroom activities and observed classroom sessions. This highlights the importance of training teachers to acquire the knowledge and skills needed to effectively conduct formative assessments using assessment rubrics.

According to Ondimu (2018), in an investigation into the preparedness of teachers to implement a competency-based curriculum in private schools, established that 70% of teachers faced difficulties in utilizing assessment rubrics. The researcher also found out that most teachers had not gone for training, and 65.2% had yet to attend a single in-service training to implement a competency-based curriculum. This indicated that teachers needed more training to implement CBC effectively. However, the research reviewed was limited to

examining the capabilities of pre-primary and primary school teachers in conducting formative assessments according to CBC rubrics. Consequently, this study aims to fill the existing gap by exploring how teachers' professional development impacts the implementation of the CBC in junior schools within North Imenti, Meru County.

METHODOLOGY

The study used a mixed methods research design. Both quantitative and qualitative data helped the study gain a complete understanding of the study problem, as qualitative data provided depth and quantitative data gave breadth. Mixed methods were also used since they could capture different experiences and perspectives, hence obtaining more representative and inclusive findings. According Porcino and Verhoef (2010), mixed methods research design help researchers to leverage the strength of this method, as qualitative data provide depth while quantitative data offer breadth.

The target population comprised 26 junior schools in North Imenti Sub-County, Meru County. The study population was two sub-county education directors, 26 head teachers, and 70 junior school teachers. Through stratified sampling, the total sample size was 31 Respondents, that is, eight head teachers, 21 teachers, and two sub-county directors of education. The data was collected using questionnaires, interview schedules, and observation checklists. Descriptive statistics was used to analyze quantitative data, while qualitative data was coded, analyzed, and summarized into pie charts, bar graphs, and frequency tables.

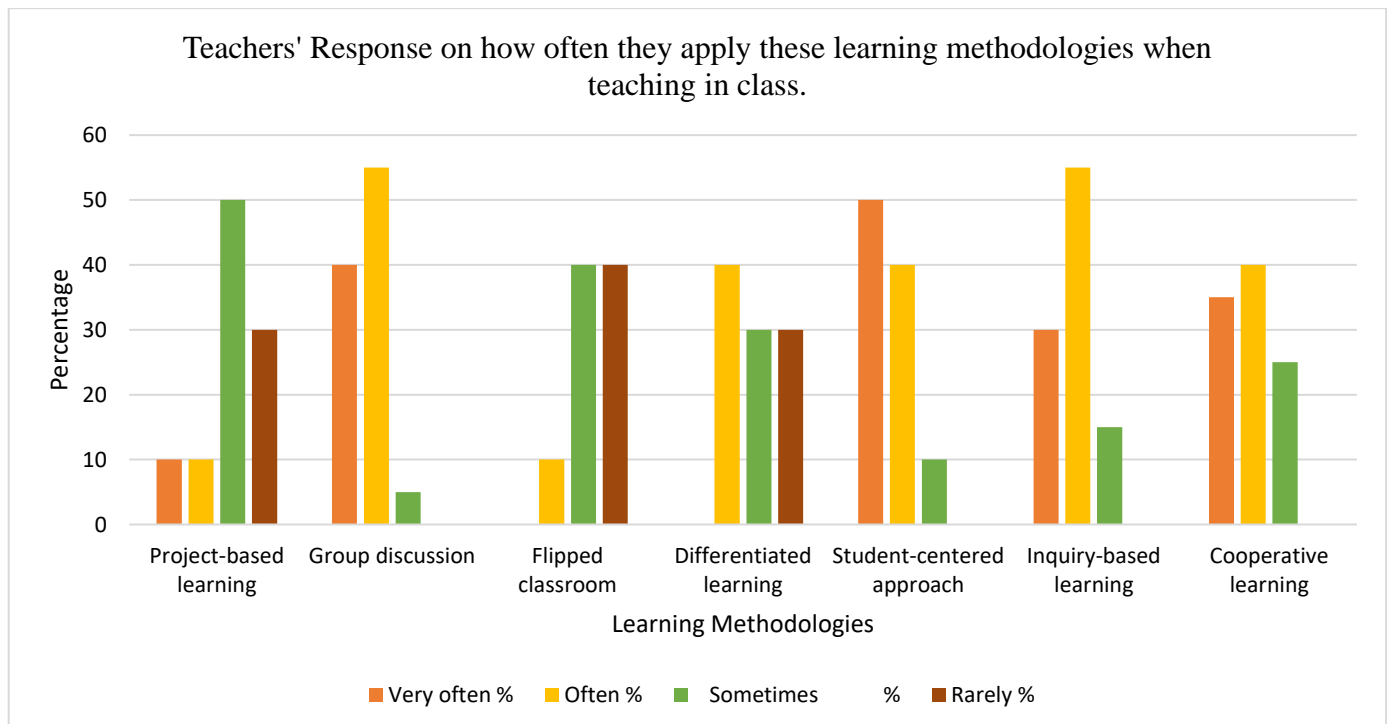
RESULTS, DISCUSSIONS, AND INTERPRETATION

Based on the study objectives, the results of the study were presented in figures and charts.

Pedagogical skills and implementation of CBC

The first objective was to establish how pedagogical skills affect implementation of Competency-based Curriculum in public junior schools in North Imenti, Meru County. The first question sought to establish how often teachers apply these learning methodologies when teaching in class. Findings are illustrated in Figure 1

Figure 1: Teacher Response on how often they apply these learning methodologies when teaching in class.



Source: field data 2024

Figure 1 indicates that most of the teachers prefer to use group discussion (55% often and 40% very often), student-centered approach (40% often and 50% very often), and cooperative learning (40% often and 35% very often). This percentage of teachers suggests that they integrate these learning methodologies in class. Teachers mainly apply these approaches due to their effectiveness in improving learners' engagement and learning outcomes. On the contrary, learning methodologies such as project-based learning, flipped classrooms, and differentiated learning are the less frequently applied approaches. These methodologies are unfamiliar to teachers or challenging to apply in class. These findings agree with a study by Cherotich (2023) on the influence of teachers' preparedness on implementing CBC. This data implies that, even though teachers understand the potential benefit of these approaches, they might need to improve on regular use. Thus, more professional development training and support are needed to help teachers integrate these methodologies in class.

Content Knowledge and implementation of competency Based Curriculum

The second objective sought to establish how teachers' content knowledge affects the implementation of CBC in public junior schools in North Imenti, Meru County. The first question sought to establish the type of training, frequency, number of teachers who attended the training, and areas covered during the training. Findings are presented in Table 1.

Table 1: Type of training, frequency, number of teachers who attended the training, and areas covered during the training

Type of training	Areas of training	Training frequency	Number of teacher participants
Digital literacy	integrating ICT in class	1	4
Problem-solving and critical thinking	pertinent contemporary issues (PCI)	1	5
Pedagogical skills	-Assessment techniques -Preparing professional documents -teaching methodologies	2	10
Creativity and imagination	Developing creativity skills	1	1

N=20

Source: Field data, 2024

Table 1 shows that only one session was conducted on digital literacy, which was attended by 4 teachers, and the areas covered during that training was how to integrate ICT in class. According to Adannur (2024), ICT integration is vital for implementing CBC as it enhances learners' grasp and understanding of complex concepts. A limited number of training and few teachers attending this training could hinder teachers from creating engaging and interactive lessons to enhance the modern learning environment.

It was notable that a new CBC concept not familiar with many teachers on problem-solving and critical thinking was only attended by 5 teachers. The area covered during that training was pertinent contemporary issues. One of the core competencies of CBC is problem-solving and critical thinking, as it emphasizes enhancing learners' analytical skills (Contributors, 2020). The number of training sessions suggests that teachers cannot help learners be critical thinkers and develop innovative ideas. Hence, more training is needed for consistent application in class.

Half of the teachers attended two sessions on pedagogical skills, and the areas covered during that training were teaching methodologies, assessment techniques, and preparing professional documents. Intensive

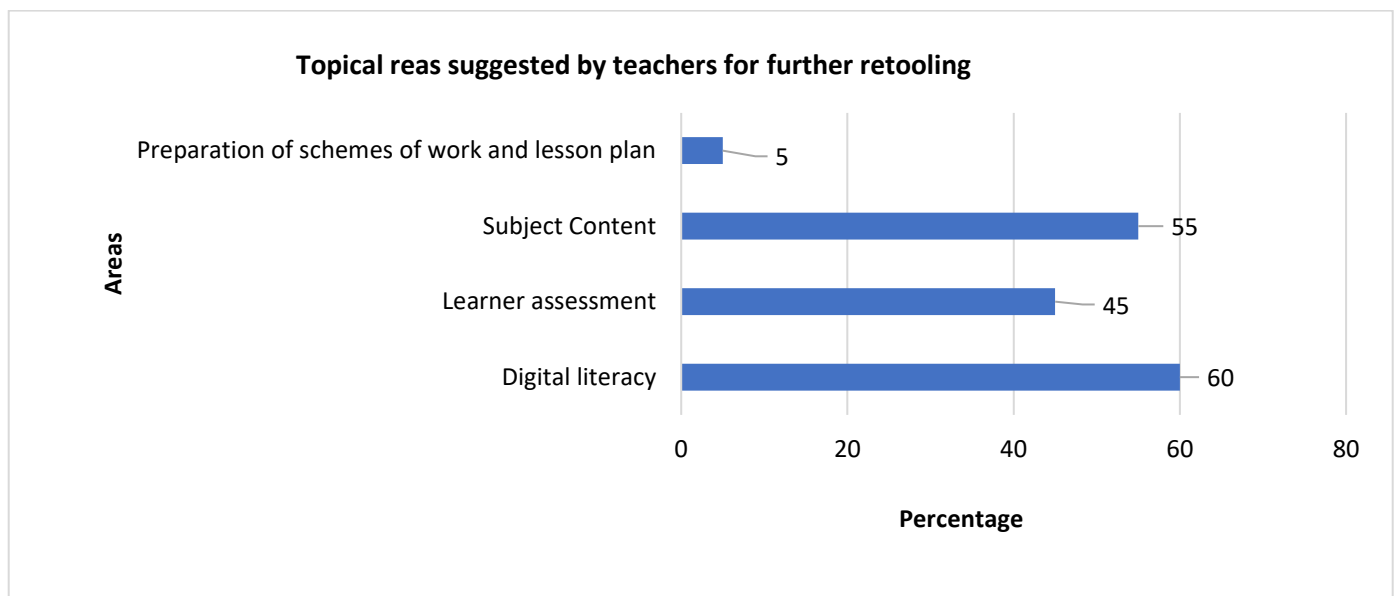
pedagogical skills training is vital for the effective implementation of CBC, as it equips teachers with knowledge and skills on various instructional methods to meet every learner's learning style and needs (Nombo, 2018). These findings indicate that most teachers can prepare professional documents, assess learners, and apply current teaching methodologies. However, more training sessions should be scheduled so that more teachers can attend and extend their knowledge and skills in these areas.

Only a teacher had attended one training session on creativity and imagination training, and the area covered during this session was developing creativity skills. Creativity and imagination are some of the core competencies of CBC that aim to enhance innovative thinking. Teachers with these skills could create engaging, thought-provoking lessons that inspire learners (Ongesa et al., 2023). This minimal teacher attendance suggests a significant gap as they might be unable to involve students in creativity to explore concepts deeply, thus limiting learners' analysis and synthesis of information.

Areas where teachers need more training

The study sought to establish the areas where teachers think more training should be done. Their opinions are illustrated in Figure 2.

Figure 2: Teacher response on areas where they think more training should be done



Source: Field data 2024

Figure 2 indicates that most junior school teachers (60%) think more training should be done on digital literacy. This number of teachers indicates they need more preparation to integrate digital tools. Digital literacy is essential, as CBC insists on innovative teaching methods that incorporate technology in class to improve the learning experience and student engagement and support diverse learning styles. Another 45% of teachers need more training in learner assessment. These numbers suggest that teachers need to be trained in problem-solving, critical thinking, creativity, and imagination, reflecting learners' skills and understanding, to implement CBC effectively.

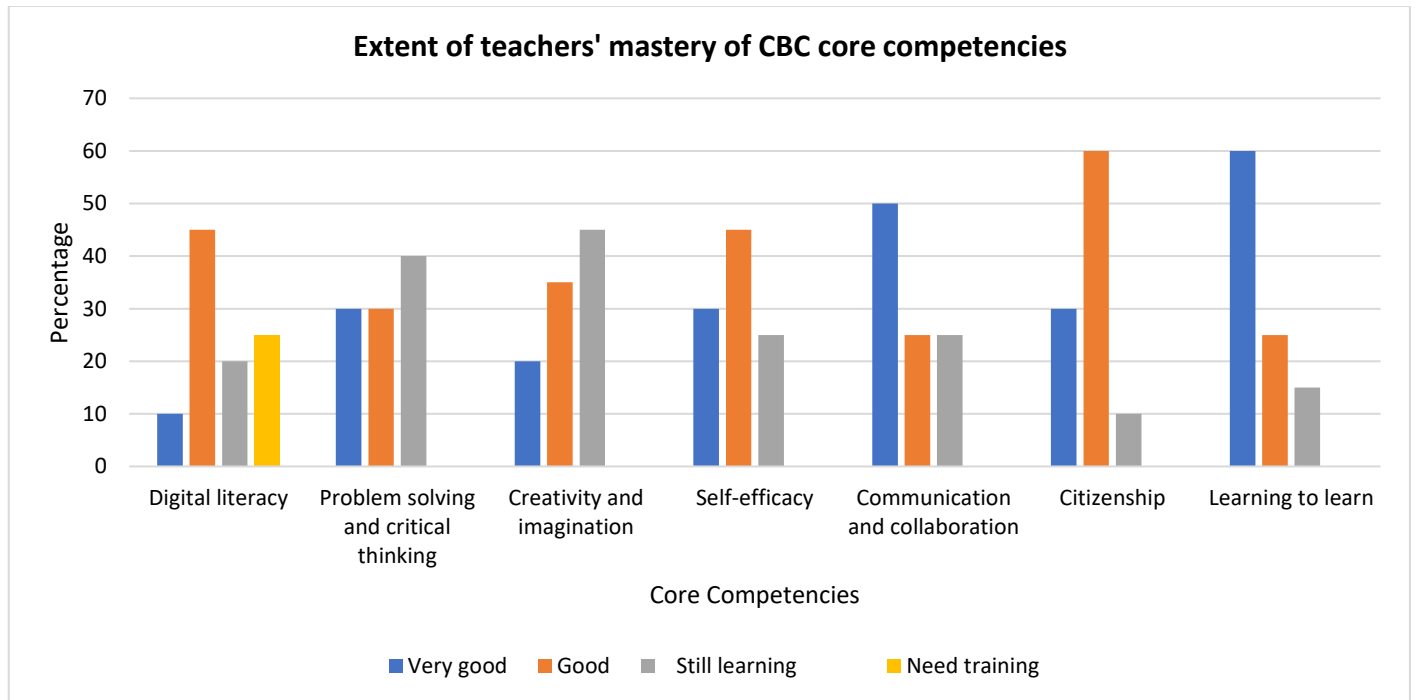
More than half of teachers (55%) need training on subject content. This number of teachers indicates that they have not mastered the subject matter they are supposed to teach in alignment with CBC. However, mastery of subject matter is crucial for effective teaching and delivering comprehensive and accurate information to learners. 5% of teachers need training in preparing schemes of work and lesson plans. The small percentage indicates that most teachers have developed sufficient skills to organize and plan their teaching activities. This is in alignment with research done by Ondimu (2018) on teacher preparedness in the implementation of CBC, who found that 73% of teachers insisted that more training should be done on digital literacy and 23% on core competencies of CBC. This concurs with KICD (2018) observations that revealed that only 39% had gone for

ICT training. However, teachers should be well trained in digital literacy and ICT since they are core competencies in implementing CBC. This concurs with the responses from the Head teachers, who insisted more training should be done on digital literacy, problem-solving, creativity, and imagination.

The extent to which teachers have mastered the core CBC competencies after Retooling

The study sought to establish the extent to which teachers have mastered the core competencies of CBC after retooling. Their opinions are illustrated in Figure 3.

Figure 3: Teachers’ Response on the extent to which they have mastered the core competencies of CBC after retooling



Source: field data 2024

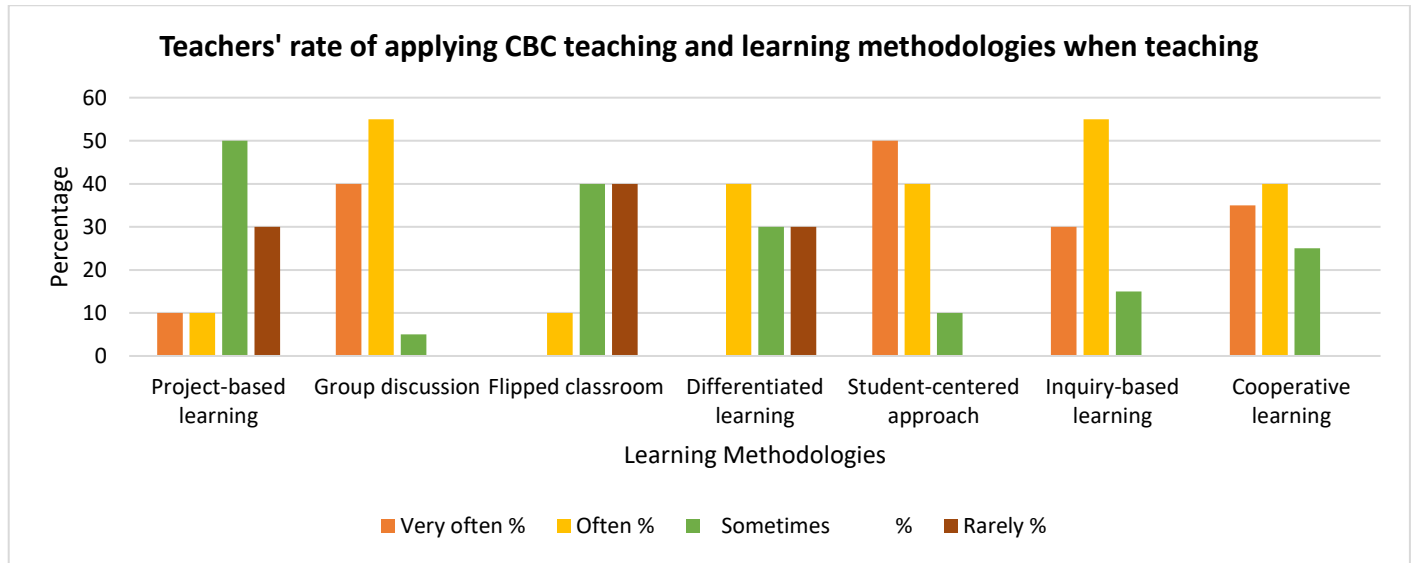
From Figure 3, a significant number of teachers are still learning (20%), and (25%) need training in digital literacy. These data align with data from Figure 2, suggesting more training should be done in digital literacy for practical usage of digital tools in class. Less than half of teachers (45%) are still learning problem-solving and critical thinking. Thus, more training should focus on this competency as it enhances analytical and independent thinking in learners, which is a crucial goal of CBC. Also, 45% of teachers are still learning about creativity and imagination, indicating previous training might have yet to cover this competency. However, it is a vital area in CBC as it encourages creative thinking and innovation among the learners.

A significant number of teachers, 30% and 45%, are perfect in self-efficacy, respectively, indicating that most teachers feel confident in their ability and can deliver content effectively in class. More than half of teachers have mastered communication and collaboration; hence, they could enhance student collaborative learning and effective communication with colleagues. More than half of teachers have mastered citizenship. As a core competency of CBC, they will be more informed and responsible when handling school matters. These findings agree with a study by Nambua (2018) in Tanzania. The majority of teachers, 60%, have mastered learning-to-learn competency. This competency is crucial as it enhances lifelong learning habits in learners and teachers.

Frequency of teachers applying learning methodologies in class

The study sought to establish how often teachers apply learning methodologies when teaching in class. The findings are presented in Figure 4.

Figure 4: Teachers’ Response on how often they apply these learning methodologies when teaching in class



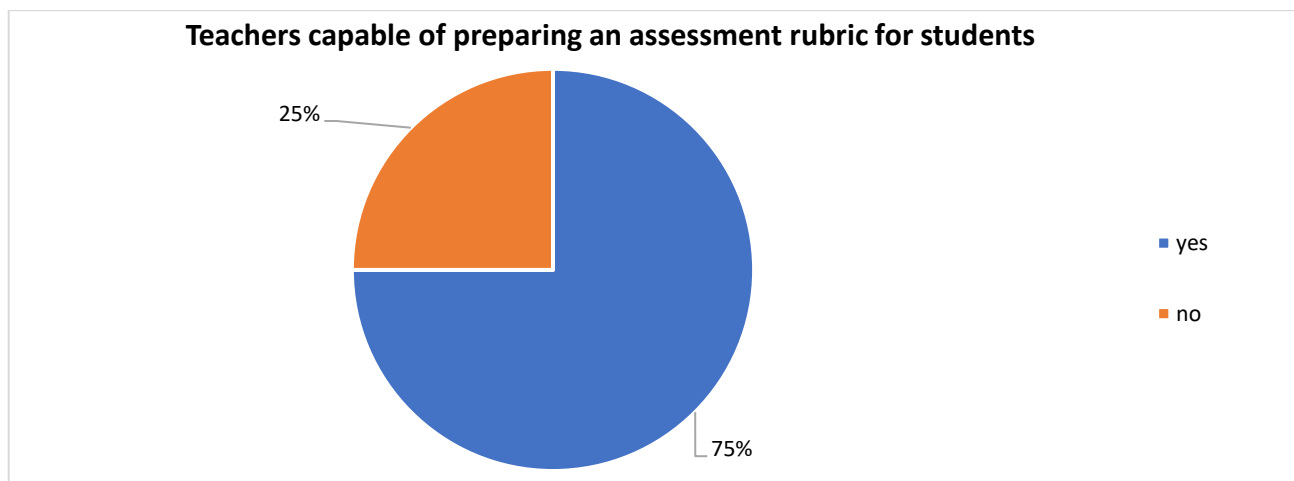
Source: field data 2024

Figure 4 indicates that most of the teachers prefer to use group discussion (55% often and 40% very often), student-centered approach (40% often and 50% very often), and cooperative learning (40% often and 35% very often). This percentage of teachers suggests that they integrate these learning methodologies in class. Teachers mainly apply these approaches due to their effectiveness in improving learners' engagement and learning outcomes. On the contrary, learning methodologies such as project-based learning, flipped classrooms, and differentiated learning are the less frequently applied approaches. These methodologies are unfamiliar to teachers or challenging to apply in class. These findings agree with a study by Cherotich (2023) on the influence of teachers' preparedness on implementing CBC. This data implies that, even though teachers understand the potential benefit of these approaches, they might need to improve on regular use. Thus, more professional development training and support are needed to help teachers integrate these methodologies in class.

Assessment and implementation of CBC

The third objective sought to determine how teachers’ assessment affects the implementation of CBC in Junior Schools in North Imenti, Meru County. The first question sought to establish whether teachers could prepare student assessment rubrics. The findings are presented in Figure 5

Figure 5: Teacher response on whether they can prepare assessment rubric for students.



Source: field data 2024.

According to Figure 5, 75% of teachers could prepare assessment rubrics for students, while 25% could not. This implies that most junior school teachers are competent in preparing and designing student assessment rubrics. This differs from a study done by Isaboke et al.(2021) on teachers following formative assessment as per the guidelines of CBC. They found that less than 50% of teachers were the only ones who could conduct formative evaluations successfully. Also, research done by Ondimu (2018) established that only 30% of teachers could prepare assessment rubrics. This indicates that there has been an improvement in training teachers on how to prepare and utilize assessment rubrics.

CONCLUSION

According to the findings of this research, it was concluded that majority of junior school teachers had undergone professional training and were ready to implement a Competency-Based Curriculum in class. From the study's findings, the areas that need more training include digital literacy, learners' assessment, and subject content. The core competencies that teachers have mastered include problem-solving and critical thinking, creativity and imagination, and self-efficacy. The study also concluded that teachers were able to prepare assessment rubrics. This indicated that there has been an improvement in training teachers on how to prepare and utilize assessment rubrics.

On learning methodologies, the study concluded that teachers preferred to use group discussion, student-centered approach, and cooperative learning when teaching. Project-based learning flipped classroom, and differentiated learning were the least applied methodologies. This indicates that more professional training and support are needed to help teachers integrate these methodologies into their classes.

RECOMMENDATIONS FROM THE STUDY

Drawing from the study's findings, the following recommendation was proposed.

1. Teachers retooling on digital literacy should be a continuous process to prepare teachers on new eventualities that are triggered by emerging issues to effectively implement a competency-based curriculum in junior schools.
2. The research also recommends that teachers be trained more extensively on respective basic education subject content so as to implement CBC effectively in junior schools.
3. To enhance the implementation of CBC in junior schools, the Ministry of Education should organize more in-service training for teachers to equip them with the 21st century pedagogical knowledge and skills needed for effective implementation of CBC.

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