

## Selected Learner-Centered Strategies' Influence on Acquisition of Core Competencies among Grade Six Learners in Kiambu County, Kenya

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### Abstract

Despite the incorporation of some learner-centered assessment strategies (L.C.A. Ss) that is; peer assessment and collaboration as well as self-assessment and reflection in CBE in primary schools in Kenya, empirical evidence on their influence in promoting the acquisition of core competencies among learners remains scarce. The study sought to examine the extent to which peer assessment and collaboration influenced the acquisition of core competencies among grade six learners in Kiambu county Kenya and to evaluate the influence of self-assessment and reflection on acquisition of core competencies among grade six learners in Kiambu county Kenya. The study employed a descriptive research design. The study's target population comprised of 78 public primary schools in Kiambu County, specifically in Kiambaa, Kabete, and Kikuyu Sub-Counties. First, domain-specific assessment approach effectiveness corroborates that competency acquisition is not a constant process, but rather requires precise pedagogical correspondence - communication is most efficiently scaffolded by peer interaction ( $\beta=.34$ ), metacognitive reflection independently gains critical thinking ( $\beta=.41$ ), and digital portfolio curating develops technical expertise directly ( $\beta=.35$ ). Such specialization refutes one-size-fits-all approaches to assessment and fine-tunes social constructivist theory by revealing which specific interaction modalities activate different competency acquisition channels. Ministry of Education should establish competency-specific assessment policies aligned with CBE objectives. Kenya Institute of Curriculum Development (KICD) should establish Faculty development modules with a focus on the practical implementation of assessment techniques.

**Keywords:** *Peer assessment, collaboration, reflection, self-assessment, core competencies*

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### 1. Introduction

The education landscape is continually evolving, with a growing emphasis on learner-centered assessment approaches that aim to enhance the acquisition of essential skills and competencies. The curriculum is fundamental to developing and advancing knowledge in a country's human resources. Over the past few decades, there has been a paradigm shift in educational philosophy and practice from teacher-centered to learner-centered approaches (Shah & Kumar, 2020). As such, the learner-centered education emphasizes the importance of individual learners'

experiences, perspectives, backgrounds, talents, interests, capacities, and needs in the learning process (Oyelana et al., 2022).

In the Kenyan context, this global trend has influenced educational policies and practices, and KICD has been at the forefront of promoting learner-centered assessment approaches in the country's education system (KICD, 2017). Assessment plays an essentially crucial role in learning, not only as a means of evaluating learner progress but also as a tool for learning itself. In learner-centered education, assessment strategies move beyond traditional summative evaluations to include formative and authentic assessments that support and enhance learning (Driscoll & Wood, 2023). The learner-centered assessment strategies often include peer assessment, self-assessment, portfolio assessments, performance-based assessments, and project-based assessments (KICD, 2017). The shift towards learner-centered assessment in Kenya is evident in the curriculum's emphasis on continuous assessment tests (CATs) and formative evaluation (Munyao et al., 2023). However, implementing these strategies and their influence in fostering core competencies required further investigation, particularly in specific contexts like Kiambu County.

The focus on core competencies in education reflects a global recognition that traditional subject-based curricula may not adequately prepare learners for the complexities of the 21<sup>st</sup> century (Akala, 2021), and core competencies typically include skills such as critical thinking and problem solving, communication and collaboration, and digital literacy, among others (Kenya Institute of Curriculum Development, 2017). These competencies have been developed to foster and prepare learners for a dynamic world (KICD, 2017). The stress on these competencies contrasts with the previous 8-4-4 system, in which learners were perceived to only memorize and prepare for examinations (Muricho, 2023).

The Kenyan education system has undergone significant changes in recent years, as the introduction and promulgation of the CBE in 2017 marked a significant reform. Under the CBE, primary education spans six years, followed by three years of junior secondary, three years of senior secondary, and three years of tertiary education (2-6-3-3-3 system) (Ministry of Education, 2024). Grade Six represents a critical juncture in this new system, marking the transition from primary to junior school education. At this stage, learners are typically 11- 12 years old and are developing more complex cognitive abilities. Piaget's theory regarding cognitive development suggests that children at this age are entering the formal operational stage, characterized by hypothetical reasoning and abstract thinking (Hayat et al., 2024), and this made Grade Six an ideal point to assess the acquisition of core competencies, as learners were thought to be demonstrating more advanced skills in critical thinking, problem-solving, communication and collaboration.

Learner-centered assessment strategies can potentially foster core competencies in several ways. First, by evaluating learners' abilities in real-world contexts, authentic assessments can promote problem-solving and critical thinking skills. In the Kenyan primary school context, project-based assessments aim to achieve this authenticity (KICD, 2017). Second, the continuous feedback and assessment can enhance metacognition and self-regulated learning, supporting the 'learning to learn' competency (Mujis & Bokhove, 2020), and the emphasis on continuous assessment tests in the learner-centered assessment aligns with this approach (Akala, 2021). Third, self-assessment strategies can develop communication, collaboration, and self-efficacy skills (KICD, 2017). While these are emphasized in the learner-centered assessment, their implementation and effectiveness in Kenyan classrooms require further study. Fourth, the performance-based assessment approach can foster creativity, imagination,

and practical skills (KICD, 2017), and the learner-centered assessment's focus on practical skills and creativity aligns with this assessment strategy. To address the gaps in the current understanding, this study focused on two key learner-centered assessment strategies: Peer assessment and collaboration, as well as self-assessment and reflection.

### **1.1 Problem Statement**

Despite the incorporation of learner-centered assessment strategies (L.C.A.Ss), that as peer assessment and collaboration as well as self-assessment and reflection in CBE in primary schools in Kenya, empirical evidence on their influence in promoting the acquisition of core competencies among learners remains scarce. The current scenario presents that even though the M.O.E. has prescribed the learner-centered assessment strategies, educators lack clear insight into what strategy best supports the acquisition of communication and collaboration, critical thinking, and digital literacy competencies in the CBE framework. The gap stems from a disconnect between the policy recommendations and practical realities in the classroom, where there is insufficient allocation of resources, inadequate teacher training programs, and absence of comprehensive monitoring and evaluation systems to track the effectiveness of LCASs. This problem directly affects public primary school grade six learners who might not get the 21st-century skills needed for effective transition into secondary school and future national progress. Teachers find it difficult to practice effective assessment procedures that facilitate competency acquisition, while policymakers do not get the research-informed direction needed to optimize assessment procedures.

### **1.2 Research Objectives**

- i. To examine the extent to which peer assessment and collaboration influence the acquisition of core competencies among grade six learners in Kiambu County, Kenya.
- ii. To evaluate the influence of self-assessment and reflection on the acquisition of core competencies among grade six learners in Kiambu, County Kenya.

### **1.3 Research Questions**

The following were the research questions.

- i. What is the influence of peer assessment and collaboration on the acquisition of core competencies among grade six learners in Kiambu County public schools?
- ii. How do self-assessment and reflection influence the acquisition of core competencies among grade six learners in Kiambu County public schools?

## **2. Literature Review**

### **2.1 Theoretical Review**

The theoretical framework underpinning this study was two-fold: Social constructivist theory and Skills acquisition theory. According to McKernan (2013), social constructivist theory conceptualizes motivation as socially negotiated by the learners in the classroom, and this perspective is a core tenet of the learner-centered approach (Wright, 2011), which was the basis of this study. Some studies suggest that a learner-centered strategy motivates learners to be eager to learn and equips them with effective learning strategies (Zaharias & Poulymenakou, 2006), and from the social constructivist perspective, through social interactions, learners can improve their affective, cognitive, and motivated behaviors (Kimario & Otieno, 2022). The study by Mvududu and Thiel-Burgess (2012) noted that from the social constructivist standpoint, teachers are expected to first consider the knowledge held by their learners and

permit learners to practice this knowledge. Therefore, the social constructivist theory was relevant to this study since it emphasized the creation of a social learning context in which learners participate actively in exciting activities that foster and facilitate the construction of knowledge, and the learner-centered. Assessment strategies that this study sought to examine helped provoke thoughtful engagement among learners, which social constructivist theory supports as effective critical thinking and problem-solving techniques. This theory revolved around classroom activities, such as cooperative learning or collaboration, peer reflection, and workshops, which encourage and facilitate knowledge and skills acquisition. The study by Kimario and Otieno (2022) and McKernan (2013) identified this as an important theory for understanding CBC teaching and learning.

The second key theory was the skills acquisition theory. The relevance of this theory was that the “learning of a wide variety of skills shows a remarkable similarity in development from the initial representation of knowledge through initial changes in behavior to eventual fluent, spontaneous, and highly skilled behavior” (DeKeyser, 2007). This theory, primarily developed by Anderson (1982), provided a framework for understanding how learners progress from novice to expert in acquiring complex cognitive skills, as it posits three stages of skill acquisition: cognitive, associative, and autonomous (Anderson, 1982). In the context of this study, these stages applied to the acquisition of core competencies such as critical thinking, problem-solving, and communication skills, as the cognitive stage involves the initial acquisition of declarative knowledge about a skill. In learner-centered assessment, this involves students understanding the criteria for effective communication or the steps in problem-solving (DeKeyser et al., 2007). The associative stage sees learners beginning to proceduralize this knowledge, making fewer errors and becoming more fluid in their skill application, whereas the autonomous stage is characterized by rapid, automatic performance of the skill with little conscious effort (Schunk, 2012). The learner-centered assessment strategies align well with this theoretical framework, as the performance-based assessments can support the transition from the cognitive to the associative stage by providing opportunities for learners to apply their knowledge in practical contexts. By framing the acquisition of core competencies within the skills acquisition theory, this study provides insights into how learner-centered assessment strategies support the progressive acquisition of these crucial skills among grade 6 learners in Kiambu County public schools.

## **2.2 Review of Related Literature**

Peer assessment and collaboration are strategies outlined in the learner-centered curriculum that effectively influence the core competencies among learners in the CBC program. This can be defined as an assessment where learners provide constructive feedback about each other’s work. CBC acknowledges peer feedback as a core component of peer assessment. However, as Strijbos, Narciss, and Dünnebier (2010) have stated, aspects of peer feedback are hardly investigated. Within English as a Second Language field, Lockhart and Ng (1995) provided four key feedback stances: collaborative (peer interested in negotiating the textual intended meaning), probing (interested in understanding the author’s implied meaning of the text), interpretive (focused on a personalized textual evaluation), and authoritative (peer interested in the textual errors and problems). These stances were further condensed by Van den Berg (2003) into two: informative (collaborative and probing) and evaluative (interpretive and authoritative) in the context of essays.

While peer feedback is essential, Brown, Irving, Peterson, and Hirschfeld (2009) noted that most students frequently view assessment as a preserve of the teachers. How peers perceive

each other's ability may influence peer ratings, the acceptance or rejection of peer feedback, and application in subsequent performance. Narciss (2008) and Shute (2008) identify feedback form, content, and function as key facets of peer feedback. These facets may generate differentiated effects on the perception of feedback and performance.

Strijbos, Narciss, and Dünnebier (2010) conducted an experimental investigation involving 89 graduate students. In the experimental cohort, graduate students received either Elaborated Specific (ESF) or Concise General (CGF) feedback from peers categorized as low or high in competence. Strijbos and colleagues observed that ESF provided by highly competent peers was deemed more suitable but yielded more adverse effects. The results indicated that groups with highly competent peers were surpassed during the post-test by those with low-competence peers. Moreover, the study failed to establish any correlation between feedback perceptions and performance. A pivotal aspect of formative peer assessment is its dependence on peer feedback.

However, studies such as Narciss (2008) and Shute (2008) revealed that feedback does not automatically yield positive outcomes. This is anchored in the fact that learners do not have expertise in any particular subject, making peer feedback prone to variations. Different learners gave input based on their understanding of the subject area being assessed.

Furthermore, students doubt their knowledge and that of their peers in a particular subject area. They also doubt their skills in peer assessment (Strijbos, Narciss, & Dünnebier, 2010). These studies are limited in context; they do not focus on CBC in particular but on general and graduate-level peer assessment. Also, the reviewed studies do not focus on core competencies promoted in the CBC program. Nevertheless, Strijbos, Narciss, and Dünnebier (2010) provide valuable insights about peer feedback as a form of peer assessment and underscore the ongoing divergent discourses on peer feedback's influence on learner performance.

Ibarra-Sáiz, Rodríguez-Gómez, and Boud (2020) provide more current evidence by emphasizing feedback's role in acquiring student competence. In their study, Ibarra-Sáiz and his team of researchers analysed four years of data. This was from undergraduate classes in project management to show the causal link between peer assessment variables, such as peer feedback, and students' acquisition of competencies. In their conclusion, Ibarra-Sáiz, Rodríguez-Gómez, and Boud (2020) stated that feedback is one of the key aspects that, if improved, can significantly improve the acquisition of students' competencies. This echoes Hounsell's (2007) argument that feedback is closely linked with student learning and performance. That is, feedback potentially improves students' knowledge in three ways: speeds up learning, optimises the quality of what students have learned, and raises individual or group achievement (Hounsell, 2007).

Kaderavek et al. (2004) provided a study highlighting the value of self-assessment in acquiring competence. In the survey, elementary children took the Test of Narrative Language. Learners were required to self-assess how well they created stories based on five pictures, rating one for "unfortunate face" to five that denoted "delighted face". The outcome showed that those students who were good narrators and older were more accurate in assessing themselves. However, males were found to be more inclined to overestimate their ability. These points also align with what Tejeiro et al. (2012) established as key issues in self-assessment: consistency and accuracy.

Ratminingsih, Marhaeni, and Vigayanti (2018) explored the influence of self-assessment on the writing competence and independence of junior secondary school students in Indonesia. The study focused on how self-assessment concerning writing competence and independence



influenced students' English language learning. A controlled experiment was conducted, with one group of students undergoing self-assessment tests and another undergoing traditional teacher assessment. Following tests for normality and homogeneity, the findings indicated a favourable effect of self-assessment on student independence and writing competence (Ratminingsih et al., 2018). In this case, independence refers to the quality of students working with less structured reading material and less teacher support.

In Iran, Birjandi and Siyyari (2011) undertook research to explore how self and peer-assessment influence the writing skills of EFL learners. Their findings revealed that self-assessment positively influenced the development of writing skills among Iranian EFL students. Similarly, Panadero et al. (2012) conducted a comparative study on the effectiveness of rubrics and script strategies in self-assessment, focusing on their influence on self-regulated learning and self-efficacy. The results indicated that scripts were more effective than rubrics in enhancing self-regulated learning. In a Thailand study, it was demonstrated that self-assessment and reflection have a significant effect on communication competence among EFL students. Specifically, the study revealed that self-assessment was helpful for most EFL students who had different styles in revising their writing and helped them to identify areas of their writing strengths and weaknesses, hence it supports self-improvement (Thongpai & Deerajviset, 2017).

In his study, Moore (2020) opined that incorporating self-assessment into homework allows learners to enhance their research and future practice. Hence, these studies support the idea that enhancing learner self-assessment contributes to their knowledge of themselves and their learning in a profound way not achievable through other approaches to assessment (Bourke, 2016). Thus, self-assessment is described in some research as a helpful practice that can help learners not only be accountable for the learning process but also for incorporating the standards for achievement. Studies have examined the influence of self-assessment strategies on the acquisition of core competencies.

A knowledge gap exists since Chung et al. (2021) used grade-six data from the United States and focused on other aspects beyond self-assessment. Oloo (2021) uses data from Kenya. Still, based on the experience of Form Three learners, most studies like Chung et al. (2021) reviewed did not connect self-assessment with any particular core competence, and Ratminingsih, Marhaeni, and Vigayanti (2018), Birjandi and Siyyari (2011) looked at self-assessment influence on writing skills competence alone. The current study bridges this gap by focusing on self-assessment and its influence on core competencies such as problem-solving, communication, collaboration, digital literacy, and critical thinking.

### **3. Methodology**

The study employed a descriptive research design. The study's target population comprised 78 public primary schools in Kiambu County, specifically in Kiambaa, Kabete, and Kikuyu Sub-Counties. According to the respective sub-counties' Teachers Service Commission database, this research's target population (N) comprised 468 Grade Six subject teachers from the three sub-counties. The selection of the sub-counties was based on purposive sampling. Schools were selected using stratified sampling according to Sub-counties. The total sample size was 80 subject teachers. In each of these schools, one senior teacher was interviewed, forming a sample size of 10 interviewees. Therefore, the sample population was 90 teachers. Primary data was collected using three instruments, which included a questionnaire, an interview guide, and an observation guide. The study employed a descriptive method approach, integrating both

quantitative and qualitative data analysis techniques. Regression analysis was used to determine the influence of the independent variables on dependent variable.

4. Results and Discussion

4.1 Descriptive Statistics

4.1.1 Peer Assessment and Collaboration and Acquisition of Core Competencies

The initial task of the study was to examine the extent to which peer assessment and collaboration influence the acquisition of core competencies among grade six learners in Kiambu County, Kenya.

Teachers were asked to indicate how often learners engaged in peer feedback sessions. The findings are shown in Figures 1, 2, and 3.

Figure 1: Frequency of Learners’ Engagement in Peer Feedback Sessions

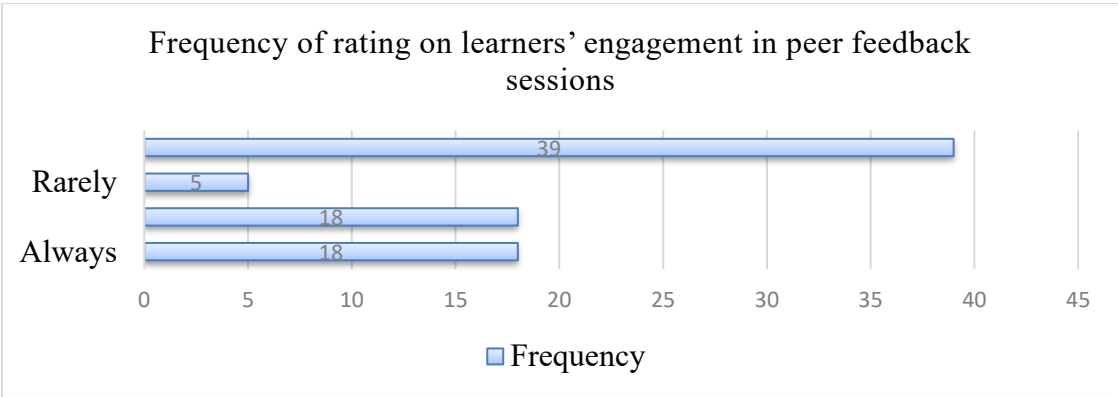
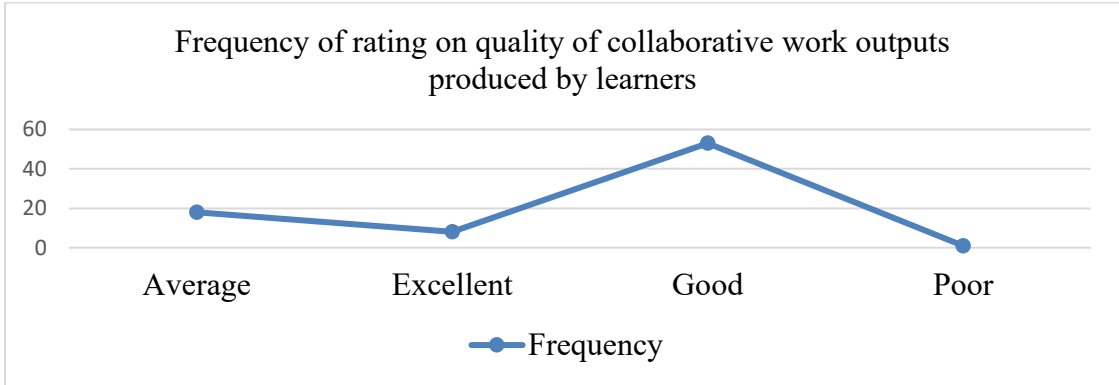
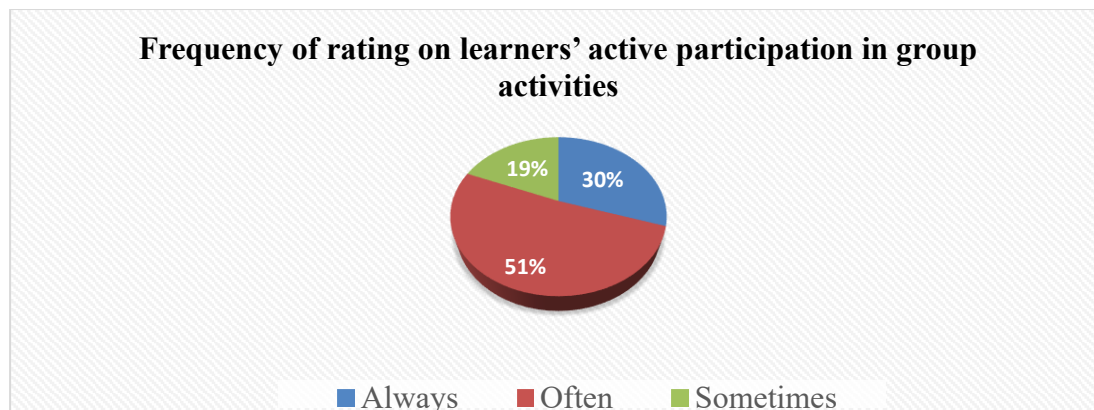


Figure 2: Quality of Collaborative Work Outputs Produced by Learners



**Figure 3: Frequency of Learners' Active Participation in Group Activities**



Regarding learners engaging in peer feedback sessions, the most common response was "Sometimes", indicating moderate but inconsistent implementation of peer feedback activities. This finding suggests that while peer feedback is practiced in many classrooms, it has not yet become a routine or systematic component of the assessment process. When evaluating the quality of collaborative work produced by learners, the majority of teachers rated it as "Good," indicating generally positive outcomes when collaboration does occur, and this suggests that when properly facilitated, collaborative activities produce satisfactory learning outcomes that meet learning expectations. The assessment of learners' active participation in group activities showed more encouraging results, with the majority of teachers reporting that learners "Often" participated in group activities, indicating that collaborative structures were relatively well-established in many classrooms, even if peer feedback mechanisms are less consistently implemented.

**The qualitative data** from interviews provided a deeper understanding of how peer assessment and collaboration are implemented in practice, as all ten interviewees acknowledged using peer assessment strategies, with common approaches including:

**Structural arrangements:** Teachers consistently reported organizing learners into pairs or groups with mixed abilities, providing guidelines for constructive feedback, and establishing clear expectations for peer interaction.

**Implementation strategies:** Respondents described various methods for engaging learners in peer assessment, including structured feedback sessions after completion of learning tasks, group-based activities where learners take leadership roles, and collaborative projects that require peer evaluation.

**Assessment integration:** Teachers reported using peer assessment as a formative assessment tool, with feedback aimed at improving learner performance rather than merely evaluating it. Representative responses illustrate these practices:

On the other hand, respondent 6 (R6) explained that learners of mixed abilities were grouped. They were then given guidelines on how to give each other constructive feedback on the tasks/learning activities in different learning areas. According to R8, giving learners clear guidelines on how to peer-assess each other by giving them feedback using the assessment rubrics was essential to their learning experience.

The classroom observations in the observation guide also provided objective data on the actual implementation of peer assessment and collaboration strategies. After utilizing the 'data



consolidation' function in MS Excel for the ratings, the average ratings in the 80 observation guides are shown in Tables 1a & 1b. The following scale was used: 1-Not observed, 2-Emerging, 3-Developing, 4-Proficient, 5-Exemplary.

**Table 1a: Peer Assessment and Collaboration Strategy and Core Competencies Acquisition**

Strategy Indicators	Rating (1-5)	Core Competency	Competency Indicators	Rating (1-5)
Frequency of peer feedback sessions	3.0	Communication and Collaboration	Clarity and coherence in written and oral expression	3.0
Quality of collaborative work outputs	2.6		Active listening skills are demonstrated	2.95
Learners' participation rates in group activities	3.0		Effectiveness in group discussions and presentations	3.05
			Records important information during the lesson	3.45
		Critical Thinking and Problem Solving	Quality of arguments and reasoning in assignments	2.8
			Creativity in generating solutions to problems	2.7
			Evaluation and synthesis of multiple perspectives	2.9
			Completes tasks by following given instructions	3.0
		Digital Literacy	Proficiency in using various digital tools and platforms	1.05
			Ability to find, evaluate, and use online information effectively	1.05
			Creates digital content for educational purposes	1.1
			Observes safety and visits recommended sites during learning	1.1

According to the findings in Table 1a, the indication of mass deployment, peer assessment, and collaboration strategies applies to medium level, with the internal indicators of strategy oscillating between 2.6 and 3.0. The number of peer feedback sessions and learners' attendance in group activities were equally recorded at 3.0, thereby proving consistency but negatively affecting optimal implementation. Nonetheless, the collaborative work output quality was the

only one that managed a lower value of 2.6, thus indicating that there is still a need for better organization of cooperative activities.

Concerning core competency acquisition, communication and collaboration competencies were the ones that evolved the most, having a range of rates of 2.95 and 3.45. Critical thinking and problem-solving competencies were noted as being moderately developed (2.7 to 3.0), while digital literacy competencies were seriously lacking and remained considerably undeveloped, with all indicators showing scores between 1.05 and 1.1.

**Table 1b: Self-Assessment and Reflection Strategy and Core Competencies Acquisition**

Strategy Indicators	Rating (1-5)	Core Competency	Competency Indicators	Rating (1-5)
Number of completed self-reflection entries	1.56	Communication and Collaboration	Clarity and coherence in written and oral expression	1.55
Quality and depth of self-reflective comments	1.44		Active listening skills are demonstrated	1.5
Frequency of goal-setting and progress tracking	1.33		Effectiveness in group discussions and presentations	1.45
			Records important information during the lesson	2.05
		Critical Thinking and Problem Solving	Quality of arguments and reasoning in assignments	1.65
			Creativity in generating solutions to problems	1.7
			Evaluation and synthesis of multiple perspectives	1.0
			Records important information during the lesson	1.0
		Digital Literacy	Proficiency in using various digital tools and platforms	1.05
			Ability to find and use online information effectively	1.1
			Creates digital content for educational purposes	1.55
			Observes safety and visits recommended sites during learning	1.5

The findings in Table 1b show that the implementation of the self-evaluation and reflection approach reflects exceptionally low enforcement in all signs, with scores between 1.33 and

1.56. Setting goals and tracking progress need to be implemented, as reflected by the lowest rate of 1.33. The little implementation of this critical written reflectivity could be illustrated with the quality and depth of the self-reflective comments (1.44) and the number of completed self-reflection entries (1.56). On the other hand, self-evaluation and reflection strategies, when observed together, show that core competency acquisition is under development in all areas. The communication and collaboration competencies ranged from 1.45 to 2.05, whereas the critical thinking and problem-solving ones ranged from 1.0 to 1.7, and the digital literacy from 1.05 to 1.55, respectively. The steady low rating indicates that self-assessment and reflection are underutilized across Kenyan CBE schools.

#### 4.1.2 Self-Assessment and Reflection and Learners' Acquisition of Core Competencies

The second task was to determine how self-assessment and reflection influenced the acquisition of core competencies among grade 6 learners in Kiambu County. These findings are shown in Table 2, Table 3, and Table 4

**Table 2: Frequency of Learners Completing Self-reflection Entries**

Response	Frequency	Percentage
Always	12	15.0%
Never	2	2.5%
Often	33	41.3%
Rarely	6	7.5%
Sometimes	27	33.8%
<b>Total</b>	<b>80</b>	<b>100.0%</b>

**Table 3: Ratings of Quality and Depth of Learners' Self-reflective Comments**

Response	Frequency	Percentage
Average	26	32.5%
Excellent	5	6.3%
Good	43	53.8%
Poor	6	7.5%
<b>Total</b>	<b>80</b>	<b>100.0%</b>

**Table 4: Frequency of Learners Setting Goals and Tracking their Progress**

Response	Frequency	Percentage
Always	14	17.5%
Often	29	36.3%
Rarely	9	11.3%
Sometimes	28	35.0%
<b>Total</b>	<b>80</b>	<b>100.0%</b>

From these questionnaire responses regarding learners completing self-reflection entries, responses were distributed across frequency categories without clear dominance of regular practice, and this scattered pattern suggests inconsistent implementation across different classroom contexts. When teachers rated the quality and depth of learners' self-reflective comments, the responses indicated generally moderate quality, with most teachers rating reflections as adequate but with substantial room for improvement. Few assessments reached excellent status, suggesting that while reflective practices existed, their quality remained underdeveloped. On the other hand, examination of the frequency with which learners set goals

and tracked their progress revealed moderate engagement, with many learners engaging in goal-setting "Sometimes" but lacking consistent habits of self-directed progress monitoring.

The interview data revealed significant variation in the implementation of self-assessment and reflection strategies, as responses ranged from systematic implementation to minimal practice:

**Systematic implementation:** Some teachers described structured approaches involving goal-setting, journaling, and individual assignments designed to promote self-reflection. R1 explained: *"Occasionally, learners are asked to set their goals in different learning areas. The target set helps in self-assessment of their learning; learners are requested to always journal their experiences of learning...journal is a way of assessing their competence."*

**Moderate implementation:** Several teachers reported occasional use of self-assessment strategies, primarily through individual assignments and periodic reflection activities.

**Minimal implementation:** Notably, R10 stated, *"Rarely does this happen,"* indicating that some teachers struggle to implement self-assessment strategies effectively.

**Common strategies:** Across interviews, the most frequently mentioned approaches included: goal-setting activities in various learning areas (R1, R3, R4, R5, R6, R8, R9); journaling of learning experiences (R1, R2, R3, R4, R6, R7, R9); individual assignments for self-assessment (R5, R6, R8); and use of rubrics for self-evaluation (R7, R8, R10).

Classroom observations on the use of goal setting, journaling, individual assignment, and rubric-based evaluation confirmed the challenges identified through other data sources, as self-assessment and reflection strategies showed the lowest implementation levels across all assessment categories, with most indicators falling in the "not observed to emerging" range (averaging approximately 1.5). The critical areas of concern include: low rates of completed self-reflection entries, minimal evidence of goal-setting practices, limited progress tracking by learners, and underdeveloped quality and depth of self-reflective comments (1.44 average). These observational findings suggest that learners may have lacked understanding of how to engage in meaningful reflection or may not receive adequate structural support for developing these practices, as shown in Table 4.2b.

The convergence of evidence across all three data sources confirms that self-assessment and reflection represent the most significant implementation gap in learner-centered assessment practices, and the variation in implementation described in interviews suggests that some teachers have developed effective approaches, while others struggle with this aspect of learner-centered assessment. This variation points to the need for targeted professional development and clearer implementation guidelines.

#### 4.2 Regression Analysis

Regression analysis reveals that peer assessment and collaboration strategies demonstrate significant influence on learners' competency acquisition, with a particularly strong influence on communication and collaboration skills.

**Table 5: Summary of Regression Analysis Results - Ranking of Learner-Centred Assessment Strategies by Magnitude of Influence**

Rank	Assessment Strategy	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	F Change	Sig. Change	Primary Competency Strength
1	Peer Assessment and Collaboration	.480	.230	.220	23.42	.000	Communication & Collaboration
2	Self-Assessment and Reflection	.387	.150	.139	13.76	.000	Broad-based (all competencies)

Peer assessment significantly influenced competency development, particularly for communication skills ( $R^2=.230$ ,  $p<.001$ ), ranking as the second-most influential strategy overall. The structured feedback processes inherent in peer evaluation enhanced learners' collaborative abilities and clarity of expression, aligning with social learning theory. Implementation success depended on clear rubrics and training in constructive feedback, though the approach showed limited impact on digital literacy ( $R^2=.010$ ). The 23% variance in communication skills underscores peer assessment's value as a targeted intervention, particularly in resource-constrained settings where its low-tech implementation remains feasible.

Self-report measures show moderate but stable influence across all competencies, accounting for 15% of overall variance ( $R^2 = .150$ ,  $F(1,78) = 13.76$ ,  $p < .001$ ). There is matched efficacy of the strategy in Communication and Collaboration ( $R^2 = .150$ ,  $p < .001$ ) and Critical Thinking and Problem Solving ( $R^2 = .120$ ,  $p = .002$ ), but no significant contribution to Digital Literacy ( $R^2 = .010$ ,  $p = .473$ ).

The moderate effect parallels self-reflection's contribution to metacognitive awareness and self-control expertise development. Effectiveness relies on formal reflection procedures, metacognitive strategies with explicit teaching, and multiple chances for guided self-appraisal.

## 5. Conclusion

First, domain-specific assessment approach effectiveness corroborates that competency acquisition is not a constant process, but rather requires precise pedagogical correspondence - communication is most efficiently scaffolded by peer interaction ( $\beta=.34$ ), metacognitive reflection independently gains critical thinking ( $\beta=.41$ ), and digital portfolio curating develops technical expertise directly ( $\beta=.35$ ). Such specialization refutes one-size-fits-all approaches to assessment and fine-tunes social constructivist theory by revealing which specific interaction modalities activate different competency acquisition channels.

The study is indeed supplying the readers with new information about the often-neglected factor of competency-based education, which is the "assessment-competency fit" principle. Just as a biological system is the target of specific medical interventions, a pedagogical strategy has a particular affinity for a certain competency domain. Therefore, it is necessary to create checklists for "good assessment" and specific, competency-based frameworks for implementation.



## 6. Recommendations

- The Ministry of Education should establish competency-specific assessment policies aligned with CBE objectives.
- Kenya Institute of Curriculum Development (KICD) should establish Faculty development modules with a focus on the practical implementation of assessment techniques.
- Teachers Service Commission (TSC) should redesign teacher training programs to prioritize assessment strategy implementation.
- School-Level Implementation should allocate 30 minutes weekly for peer assessment activities focused on Communication skills

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