

# Teacher learning for competency-based curriculum implementation: A multi-domain professional development approach in a new Kenyan girls' school

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## ABSTRACT

Kenya's Competency-Based Curriculum (CBC) reform requires fundamental shifts in pedagogy, assessment, and teacher-student-community relationships, yet limited research examines how to support teachers through this transition. This case study explored teacher reflections following a targeted professional development intervention at Top of the Hill Girls Senior School, a newly established institution in Nyahururu, Kenya. The intervention consisted of four half-day training sessions addressing critical dimensions of CBC implementation: aligning subject theory with career skills, project-based and problem-based learning, communication skills development, and employer and community partnerships. All 18 teachers participated and provided written reflections immediately following each session. Reflections were analyzed using thematic analysis informed by teacher change theory, CBC implementation requirements, and the four training domains. Findings revealed four major themes. First, teachers conceptualized theory-career connections by identifying diverse career pathways, recognizing transferable workplace competencies, and proposing instructional strategies to support career-focused learning. Second, teachers demonstrated emerging understanding of project-based learning as a vehicle for authentic application, identifying community problems as project foundations and describing open-ended tasks designed to foster higher-order thinking. Third, teachers emphasized communication skill development across oral, written, and visual modes and identified assessment approaches such as rubrics and performance tasks. Fourth, teachers identified partnership opportunities across private, government, educational, and community sectors, including plans to engage female role models relevant to the girls' school context. The findings suggest that practical, focused professional development may support teachers' understanding of CBC implementation and encourage implementation planning while highlighting the need for ongoing support, peer collaboration, and school-level structures to sustain instructional change in newly established schools.

**Keywords:** Competency-based curriculum, teacher professional development, Kenya, curriculum implementation, girls' education.

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## INTRODUCTION

### Background and context

Kenya's Competency-Based Curriculum (CBC) represents a major shift from traditional content-focused education to

an approach that emphasizes the application of knowledge, skills, values, and attitudes in real-world contexts (Kenya Institute of Curriculum Development [KICD], 2017). At the senior school level (Grades 10–12),

students select one of three pathways: Arts and Sports Science, Social Sciences, or Science, Technology, Engineering, and Mathematics (STEM), designed to align learning with individual interests, aptitudes, and career aspirations (KICD, 2017). While this reform aims to better prepare students for future education and employment, implementation has placed significant demands on teachers. Educators are expected to transition from traditional teacher-centered instruction to student-centered approaches that foster critical thinking, problem-solving, and authentic learning experiences connected to community and workplace contexts (Keter and Wabuke, 2025; Ngaruiya, 2023). These demands are particularly challenging in new schools, where teachers must simultaneously navigate curriculum implementation, develop institutional practices, and build capacity to effectively deliver the CBC. As a result, understanding the support, resources, and professional learning teachers need is critical to the successful implementation of Kenya's CBC reform.

### **The case of Top of the Hill Girls Senior School**

Top of the Hill Girls Senior School, located in Nyahururu, Kenya, was selected as the site for this professional development initiative because it represents a unique context for examining Competency-Based Curriculum (CBC) implementation in a newly established educational institution. As a girls' senior school, its mission aligns with expanding educational opportunities and preparing young women for future academic and career pathways. At the same time, the school faces the challenges of building a strong institutional culture while implementing Kenya's reformed curriculum. This combination of a new school environment, a commitment to girls' education, and the demands of CBC implementation made the school an ideal setting for supporting teachers as they adapted to competency-based teaching and learning practices.

### **Statement of the problem**

While the Kenyan government has provided the CBC framework and assessment guidelines, limited research exists on how schools, particularly new institutions, are implementing these reforms at the classroom level (Ngaruiya, 2023). Even less is known about effective professional development models for supporting teachers through this pedagogical transition, especially in schools serving girls in semi-urban or rural contexts. Research indicates that the majority of teachers feel inadequately prepared for CBC implementation, with studies showing that only a small percentage report feeling confident in their readiness (Keter and Wabuke, 2025). Understanding

how teachers interpret, adapt, and plan to implement CBC-aligned pedagogies is essential for scaling quality competency-based education across Kenya's diverse educational landscape.

This study addresses this gap by examining teacher learning and change following a targeted professional development intervention at a new girls' school in Nyahururu. Specifically, it investigates how teachers made sense of the four training domains, what barriers and enablers they identified for implementation, and how they envisioned applying competency-based approaches within their specific subject areas and the school's pathway structure.

### **Purpose and significance of the study**

The purpose of this case study is to analyze teacher reflections following a four-session professional development program designed to support Competency-Based Curriculum (CBC) implementation at a newly established girls' senior school in Kenya. Specifically, the study addresses the following research questions:

1. How do teachers conceptualize the connections between their subject content and career-relevant competencies?
2. What is teachers' understanding of and plans for implementing project-based and problem-based learning approaches?
3. What strategies do teachers identify for developing student communication and collaboration skills?
4. How prepared do teachers feel to establish employer and community partnerships?

By examining teacher reflections through multiple analytical lenses, including teacher learning and change, CBC implementation requirements, context-specific factors, and domain-specific content, the study seeks to illuminate both the opportunities and challenges associated with supporting competency-based education in newly established Kenyan secondary schools.

This study contributes to the growing body of literature on competency-based education implementation in East Africa by providing empirical evidence of how teachers respond to targeted professional development designed to support CBC implementation, an area that remains underexplored in Kenya's educational reform efforts (Mohamed et al., 2022). The focus on a girls' school also offers insights into gender-responsive considerations that may inform practice in similar educational settings. In addition, the study provides a practical, context-specific model of professional development that can be adapted for resource-constrained environments (Kafyulilo et al., 2015). Beyond Kenya, the findings contribute to broader

international discussions on competency-based education reform by offering perspectives from an African context, complementing literature that has largely focused on Western educational systems. As competency-based approaches continue to expand across sub-Saharan Africa, understanding how teachers experience and respond to curriculum reform is critical for successful implementation. The findings have implications for school leaders, professional development providers, and policymakers seeking to identify the resources, support structures, and professional learning opportunities necessary to implement curriculum reform effectively and sustainably.

## METHODS

### Research design and approach

This study employed a qualitative case study design (Stake, 1995; Yin, 2018) to examine teacher learning following a professional development intervention focused on Competency-Based Curriculum implementation. Case study methodology was appropriate for this research because it allows for in-depth exploration of a contemporary phenomenon within its real-world context (Yin, 2018). The bounded case for this study was the teaching faculty at Top of the Hill Girls Senior School during their participation in a four-session professional

development program on CBC implementation.

### Context and setting

Top of the Hill Girls Senior School is a newly established secondary school located in Nyahururu, Laikipia County, Kenya. As a new institution serving girls in a semi-urban setting, the school faces the dual challenge of building institutional culture while implementing Kenya's reformed Competency-Based Curriculum. The school offers all three CBC pathways at the senior secondary level: Arts and Sports Science, Social Sciences, and Science, Technology, Engineering, and Mathematics (STEM). The timing of this study during the school's initial years provided a unique opportunity to examine how teachers in a new school setting approach CBC implementation without the constraints of established traditional practices.

### The professional development intervention

The professional development program consisted of four half-day training sessions conducted over a two-week period (Table 1). Each session addressed a critical dimension of CBC implementation and was designed using active learning principles. The training employed a workshop format that combined short presentations, collaborative activities, and guided planning time.

**Table 1.** Overview of professional development sessions.

Session	Focus	Key activities	Deliverable
1	Aligning Subject Theory with Career Skills	Career brainstorming, mapping, and gallery walk	Curriculum map
2	Project-Based Learning	Problem identification, project design	Project plan
3	Communication Skills	Strategy exploration, assessment planning	Communication strategy
4	Employer Partnerships	Stakeholder mapping, pitch practice	Partnership plan

The four sessions focused on:

- **Session 1: Aligning Subject Theory with Career Skills.** This session helped teachers identify careers related to their subject areas, recognize workplace competencies, and create curriculum maps connecting subject topics to career skills. Activities included individual brainstorming of career fields, paired mapping exercises linking topics to skills, and a gallery walk where teachers added suggestions to each other's maps. The deliverable was a subject-to-career curriculum map for each department.
- **Session 2: Project-Based and Problem-Based Learning.** Teachers articulated an understanding of project-based learning from traditional assignments and designed

authentic projects addressing community problems. Activities included identifying pressing community issues in small groups, creating driving questions, and outlining project plans, including competencies targeted, activities, timelines, and assessment methods. Groups presented three-minute project pitches to receive peer feedback. The deliverable was a draft CBC-aligned project plan.

- **Session 3: Communication Skills for Learners.** This session addressed how to develop student communication competencies through oral, written, and visual/digital modes. Teachers explored strategies for structured collaboration, peer feedback, and public presentation of work. The focus was on embedding communication skill development within subject-specific instruction rather than

treating it as a separate competency.

- Session 4: Employer and Community Partnerships. Teachers articulated an understanding of identifying potential partners, designing mutually beneficial partnership activities, and developing initial contact strategies. Activities included stakeholder mapping, partnership activity design using a structured worksheet, and role-play simulations of pitching partnership proposals to employers. The deliverable was a draft partnership plan with specific potential partners identified.

The training was facilitated by the researcher, who has expertise in competency-based education and teacher professional development. All sessions incorporated hands-on activities, collaborative work, and practical planning time to ensure immediate applicability.

## Participants

All teaching faculty at Top of the Hill Girls Senior School participated in the professional development program. The teaching staff included 18 teachers representing diverse subject areas across the three CBC pathways (Table 2).

**Table 2.** Participant characteristics.

Characteristics	Number
Teaching Experience	
Early Career (0-5 years)	5
Mid-Career (6-15 years)	10
Experienced (16+ years)	3
Teaching Pathway Area	
STEM	7
Social Sciences	6
Arts and Sports	5
Prior Formal CBC Training	
Yes	0
No	18

The teaching staff represented a range of professional experience levels. Participants included both early-career and experienced educators, with teaching experience ranging from 1 to 25 years. Although all participants were professionally trained educators, none had previously received formal professional development specifically focused on CBC implementation. Consequently, the professional development program provided an

opportunity to examine teachers' initial understandings and implementation planning related to the curriculum reform. To protect participant confidentiality, pseudonyms are used throughout this article.

## Data collection

The primary data source for this study was written teacher reflections collected immediately following each of the four training sessions. After each session, teachers responded to a specific reflection prompt designed to capture their thinking about implementation:

Session 1 prompt: "What one change will I make to connect theory and career skills in my classroom?"

Session 2 prompt: "How will I use projects to build problem-solving and creativity in my learners?"

Session 3 prompt: "What communication skills do my learners need most? How will I create chances for them to practice and be assessed?"

Session 4 prompt: "Who could be my first employer or community partner? What learning activity could we plan together for the next term?"

These prompts were intentionally action-oriented to elicit specific implementation plans rather than general reactions to the training. Teachers wrote their reflections individually and submitted them to the facilitator. All 18 teachers completed reflections for all four sessions, yielding 72 reflection documents.

A methodological consideration of the reflection prompts is their action-oriented, future-focused design. The prompts specifically asked teachers to describe changes they "will make" and activities they "will plan," potentially biasing responses toward optimistic, idealized implementation plans rather than realistic or theory-informed responses. Teachers were not explicitly asked to identify barriers, challenges, or constraints they might face, which may have contributed to the generally positive and action-oriented nature of reflections. Readers should interpret findings as evidence of teacher readiness and intention to implement CBC approaches, rather than evidence of capability or predicted successful implementation in practice.

## Data analysis

Teacher reflections were analyzed using thematic analysis (Saldaña, 2021) informed by an analytical framework drawing on Guskey's (2002) model of teacher change, CBC implementation requirements, and the four training domains. The analysis proceeded in several phases. First, all reflections were read in their entirety to gain familiarity

with the data. Second, an initial coding scheme was developed deductively based on the analytical framework and refined inductively as themes emerged from the data. Third, each reflection was systematically coded using the scheme, with segments of text assigned to one or more codes as appropriate. Fourth, coded segments were organized by theme and analyzed for patterns across teachers and sessions. Finally, representative quotes were selected to illustrate key findings. The researcher maintained an audit trail documenting analytic decisions and engaged in reflexive memoing throughout the process to enhance the trustworthiness of the findings.

An external colleague experienced in qualitative research reviewed the coding scheme and independently coded 10% of the reflections ( $n=7$ ). Comparison of codes achieved 85% agreement, supporting inter-coder reliability. Discrepancies were discussed and resolved through consensus, strengthening confidence in code assignments.

### ***Researcher reflexivity and analytical rigor***

In reflexive memos throughout the analysis, the researcher documented assumptions, decision points, and potential biases. Several instances were noted where the facilitator role may have influenced interpretation, particularly when coding responses that aligned with training objectives or when interpreting statements about implementation readiness as indicators of actual learning. Maintaining awareness of this potential bias through systematic reflexive practice supported analytical rigor.

### **Ethical considerations**

#### ***Researcher positionality and potential bias***

The researcher served as both the professional development facilitator and the sole analyst of the data. This dual role presents potential for bias in data interpretation, particularly toward interpretations that align

with the training content. To mitigate this, written reflections were collected rather than verbal responses, maintaining distance between the facilitator and responses. Teachers were assured that reflections were confidential and would not affect employment. Analysis was conducted several months after the training sessions, providing temporal distance. During reflexive memoing throughout the analysis, the researcher explicitly noted instances where the facilitator role may have influenced interpretation, particularly when responses aligned with training objectives. These safeguards, while valuable, do not eliminate the influence of researcher positionality. This limitation should be considered when interpreting findings.

Teachers provided informed consent to participate in the study and for their reflections to be used for research purposes. They were assured that participation was voluntary and would not affect their employment status. All identifying information has been removed from the data, and pseudonyms are used in reporting findings. The school administration granted permission for the research to be conducted.

## **RESULTS**

Analysis of teacher reflections revealed four major themes. Table 3 provides an overview of these themes. Each theme is presented in detail below with supporting evidence.

### **Theme 1: Conceptualizing theory-career connections**

Teachers indicated growing understanding of how their subject content connects to career pathways, moving beyond vague notions of relevance to specific skill development. This theme had three dimensions: identifying diverse career pathways, recognizing transferable workplace competencies, and planning concrete instructional strategies to make connections explicit.

**Table 3.** Summary of major themes.

<b>Theme</b>	<b>Key findings</b>
Theme 1: Theory-Career Connections	Teachers identified diverse careers, transferable competencies, planned guest speakers, and career examples
Theme 2: Project-Based Learning	Identified community problems as foundations, designed authentic, open-ended projects
Theme 3: Communication Skills	Prioritized oral communication, planned multi-modal assessment with rubrics
Theme 4: Partnership Opportunities	Identified partners across sectors, planned mentorships, and site visits

### ***Identifying diverse career pathways***

Across all subject areas, teachers identified multiple careers connected to their disciplines, demonstrating that they moved beyond stereotypical career associations. Science teachers made explicit connections to healthcare and technical fields. For example, Teacher 1 noted connections to genetics work: "If teaching genetics, highlight roles like lab technicians, genetic counselors, and forensic scientists." This reflection suggests that the teacher recognizes the importance of making career pathways visible through subject instruction. The specificity of the examples indicates a movement beyond broad career awareness toward helping students understand how disciplinary knowledge connects to concrete occupational opportunities.

Teachers of social sciences and humanities also identified varied career applications. Teacher 2, an English teacher, wrote: "Students will understand the importance of my subject (English Language) in their future career prospects." While this statement reflects an awareness that subject content should connect to future careers, it remains relatively general compared to other teachers' responses. This may suggest that some teachers were still developing their understanding of how to translate broad career relevance into specific instructional strategies.

Teacher 3, teaching Art and Design, explicitly linked classroom learning to career preparation: "helping learners see art and design not just as subjects, but as a meaningful career path." This comment reflects a shift from viewing subjects solely as academic disciplines toward recognizing their workforce relevance. It also suggests an effort to challenge traditional perceptions that may limit students' awareness of creative and artistic career opportunities.

### ***Recognizing transferable workplace competencies***

Beyond identifying specific careers, teachers articulated the workplace competencies that their subjects develop. Teacher 4 emphasized the importance of "framing content with real-world relevance and providing concrete examples instead of just discussing abstract theories," while explicitly naming and nurturing career skills. Teacher 5 focused on developing "numerical literacy skills, especially in data interpretation, so that they can be confident in their analytical skills." Rather than focusing solely on content mastery, this teacher emphasizes transferable competencies that are valuable across multiple professions. This reflects alignment with CBC's emphasis on developing skills that extend beyond individual subject areas. Teacher 3 identified "creative problem solving, use of digital and manual techniques, working with design constraints and deadlines, client

briefing and interpretations" as career-oriented skills embedded in Art and Design instruction.

### ***Planning concrete instructional strategies***

Teachers moved from general aspirations to specific pedagogical approaches for making career connections visible to students. Several teachers planned to integrate career-focused examples throughout instruction. Teacher 6 described "incorporating experiential learning opportunities and explicitly linking course content to real-world professional contexts." Teacher 7 planned to "integrate project-based learning that mirrors real-world industry in my lessons when teaching students."

Many teachers identified guest speakers and mentors as a strategy. Teacher 8 wrote: "I will invite mentors to speak to my students. This will enable the students to answer the questions and try to relate why they feed to career skills as they listen to the presenter." Teacher 9 similarly planned to "invite the professionals from various industries to share and mentor my learners, basically on the hard skills or technical skills and soft skills they need to learn from the school."

Others emphasized student agency in discovering career connections. Teacher 10 articulated a shift toward student-centered learning: "One change I would make in my classroom is letting learners come up with their own ideas/projects instead of coming up with or designing for them. Doing this as a teacher makes the lesson teacher-centered. Letting them come up with projects and ideas and find solutions helps improve their critical thinking skills and problem-solving skills." This reflection demonstrates one of the clearest examples of a pedagogical shift toward learner-centered instruction. The teacher explicitly critiques prior teacher-centered practices and recognizes student autonomy as a mechanism for developing critical thinking and problem-solving skills.

### ***Theme 2: Embracing project-based learning for authentic application***

Teachers indicated understanding of project-based learning (PBL) as a vehicle for developing competencies and solving real-world problems. This theme encompassed identifying community problems, designing authentic projects, and recognizing PBL's role in developing higher-order thinking.

### ***Identifying community problems as project foundations***

A striking pattern across reflections was teachers'

identification of community-based problems as the starting point for projects. Teacher 11 articulated a systematic approach: "I will identify from the learners and/or community a societal problem that affects my learners and their society. This will involve brainstorming, group discussion, and data collection." This statement suggests a sophisticated understanding of project-based learning as a contextualized and community-centered process. Rather than beginning with content coverage, the teacher starts with authentic problems, reflecting a core principle of competency-based education.

Teacher 10 planned to "ask my learners to be bold to come up with challenges facing them in school, or challenges in the surrounding communities, research on the problems, then causes, and how they can resolve them." The emphasis on student identification of problems indicates an understanding that learners should play an active role in shaping their educational experiences. This approach aligns with CBC's focus on learner agency and ownership of learning.

Teachers identified diverse community issues appropriate for project work, demonstrating contextual awareness. These included environmental challenges (soil erosion, waste management), health issues, and social problems. Teacher 1 provided a concrete example: "Give students projects that connect to real-life problems. Like planting grass on a slope terrace to control soil erosion." This example demonstrates the teacher's ability to connect classroom learning with a tangible local issue. The specificity of the project suggests that teachers were beginning to translate abstract CBC principles into practical classroom applications. Teacher 3 connected community problem-solving to subject-specific skills: "a project that would solve the problem of irresponsible disposal of waste, and while at it, they employ a creativity aspect and the concepts of art and design."

### ***Designing authentic, open-ended projects***

Teachers indicated understanding that quality projects require authentic challenges and student ownership. Teacher 4 emphasized: "Providing open-ended projects. Students should work on open-ended tasks instead of receiving standardized assignments because the projects will enable multiple exploration solutions. This leads students to develop problem-solving abilities with critical thinking." The teacher's emphasis on open-ended tasks reflects recognition that authentic learning problems rarely have a single correct answer. This understanding is important because it supports the development of critical thinking and creativity, two competencies emphasized within CBC.

Several teachers articulated the importance of connecting projects to CBC competencies and

assessment. Teacher 11's reflection showed sophisticated planning: "I will guide using the PBL template to draft and carry out a project," including identifying "what would be required" and how learners "would solve the problem." This reflection indicates not only conceptual understanding of PBL but also awareness of implementation structures needed to support it. The reference to a template suggests a level of procedural readiness that may increase the likelihood of classroom application. Teacher 2 explained how projects would "ensure that knowledge is applied practically and hence give meaning to concepts that I teach inside the classroom."

### **Recognizing PBL's role in developing higher-order thinking**

Teachers connected project-based learning to competency development, particularly problem-solving, creativity, and critical thinking. Teacher 12 articulated this clearly: "I plan to integrate every lesson topic to reinforce the career skills that would be applied to solve a real-world change that affects their immediate community by identifying a project, and students themselves doing the project as they come up with the solutions." The focus on students generating solutions reflects an understanding that learning occurs through active engagement rather than passive reception of information. This perspective aligns closely with the learner-centered philosophy underlying CBC reform.

Teacher 8 noted that "in project learning, students collaborate and discuss the projects and come up with a solution to the problem," emphasizing the collaborative dimension of competency development. Teacher 13 observed that "Project-based learning simplifies the theoretical approach of learning, making students heavy thinkers and expanding their thinking." This comment suggests recognition of PBL's potential to make abstract concepts more accessible and meaningful to learners. However, the characterization of PBL as "simplifying" learning may also indicate an incomplete understanding of the complexity involved in designing and facilitating high-quality projects. Such variation in understanding is an important context for interpreting teachers' readiness to implement PBL effectively.

### **Theme 3: Prioritizing communication skill development**

Teachers recognized communication as a core competency requiring intentional development across all three modalities: oral, written, and visual/digital. The theme revealed teachers' understanding of different communication modes, strategies for embedded

development, and approaches to assessment.

### ***Identifying priority communication skills***

Teachers identified oral communication as the most frequently prioritized skill, recognizing its importance for real-world application. Teacher 2 wrote: "My learners need oral communication the most since in real-world applications, it is necessary during self-expression and relating with others." This statement reflects awareness that communication skills are foundational to both academic success and workplace readiness. However, the prioritization of oral communication may also suggest a tendency to emphasize one communication modality over the integrated communication competencies emphasized within CBC. Teacher 11 emphasized, "Oral communication is what learners need most. I will intentionally provide opportunities to answer questions using their own words." The teacher's focus on learners expressing ideas in their own words indicates recognition that communication is closely linked to deeper understanding. This reflects movement away from rote memorization toward more authentic demonstrations of learning.

However, many teachers recognized the need for integration of all three communication modes. Teacher 14 articulated comprehensive plans: "My learners will require an integration of all three core communication skills. They will be assessed as follows: (1) Oral through debates, group discussions, and oral presentations; oral interviews and songs; role play and dramatization; (2) Written through note taking, note making, summary writing, essay writing, functional writing, and reflection journals; (3) Visual through digital presentations, posters, drama-miming, and dancing." This response demonstrates one of the most comprehensive understandings of communication competency among participants. The detailed assessment strategies suggest that the teacher was already considering how communication development could be intentionally embedded and evaluated across multiple learning activities.

Subject-specific communication needs emerged in several reflections. Teacher 15 noted that "Geography learners need to collaborate, work as a team, present their findings orally, and be in a position to visually present their work using infographics." This reflection illustrates how teachers connected communication skills to the authentic demands of their discipline. It suggests recognition that communication is not an isolated competency but one that supports disciplinary learning and workplace preparation. Teacher 1 emphasized, "... use of visual and written communication is necessary for experiments, lessons, and writing for proper presentation of the project work and reports."

### ***Planning strategies for communication development***

Teachers identified diverse strategies for developing communication competencies within their subject instruction. For oral communication, teachers planned to use class discussions, presentations, debates, role plays, and peer teaching. Teacher 6 specified development of "clear articulation is expressing their own ideas, suggestions, and findings clearly, concisely, and using the right language" through PBL and group work.

For written communication, teachers planned assignments requiring various genres and purposes. Teacher 16 listed "writing reports, writing summaries of lessons, and writing reflections of what has been learnt" as communication practice. Teacher 10 focused on organizational skills: "clarity or organization. Being able to gather, analyze, and record knowledge in a clear manner makes it easy for them to refer to it later."

Visual and digital communication received particular attention from some teachers. Teacher 4 planned to "employ visual skills by the use of a projector, computers, and other digital devices. My learners will be able to master the skills since they will be interacting with video, diagrams, and images." The emphasis on digital tools reflects awareness of the growing importance of visual and digital communication in contemporary learning environments. However, the response focuses primarily on technology use rather than communication processes, suggesting an area where further professional development may be beneficial. Teacher 17 specifically identified "visual/digital communication skills" and planned to "incorporate them often in my lessons after teaching them the skills on how to use them."

### ***Approaches to assessment***

Teachers indicated understanding that communication competencies require authentic assessment through performance and rubrics. Teacher 9 wrote: "We will enable the practice through group activities and presentations of their work, and I will assess them using a well-structured rubric." This statement demonstrates understanding that competency development requires explicit assessment criteria. The reference to rubrics suggests growing familiarity with authentic assessment practices aligned with CBC expectations. Teacher 1 specified the need to "use rubrics and peer teaching to assess" communication in the context of "project work and reports."

Teacher 3 articulated assessment through authentic documentation: "documenting their journey or progress story with a portfolio, digital or physical, will be integral to their assessment as well as their professional career accomplishments." This shows understanding of formative assessment aligned with CBC principles.

#### **Theme 4: Identifying diverse partnership opportunities**

Teachers identified a wide range of potential partners and planned specific learning activities, demonstrating understanding of how external partnerships could enhance CBC implementation. This theme included diversity of partner types, specificity of plans, and understanding of mutual benefits.

##### ***Diversity of partner types***

Teachers identified partners across multiple sectors, showing creative thinking about partnership possibilities. Partners included:

**Private sector businesses and industries:** Teacher 12 identified "a local bank, such as Equity Bank" for financial literacy learning. The specificity of this example indicates that the teacher was already envisioning practical partnership opportunities rather than abstract collaborations. Such specificity may increase the likelihood that partnerships move from planning to implementation. Teacher 11 specified "architectural, mechanical, and electrical engineers' companies" for physics pathway connections. This response demonstrates a strong alignment between subject content and pathway-specific career opportunities. It suggests that teachers were beginning to think strategically about how partnerships could support both curriculum goals and career exploration. Teacher 4 listed specific science-related organizations: "Eco Lab, Kemri, Kenya Power, Mozilla, and Wikimedia."

**Government agencies and departments:** Teacher 8 planned to partner with the "County government of Laikipia, Department of Youth and Sports, and the Department of Culture and Tourism." Teacher 15 identified "the National Environmental Management Authority (NEMA) and the UN-Habitat" for geography-related activities.

**Educational and cultural institutions:** Teacher 18 identified "the Alliance Française in Nairobi" for French language immersion. Teacher 3 listed "Art for Children Foundation, A Renown Gallery, University Art Department" as potential partners. The identification of a cultural institution broadens traditional conceptions of school-community partnerships. This suggests that teachers recognized the value of partnerships extending beyond industry and workforce settings. Teacher 17 suggested "the Kenya Institute of Curriculum Development (KICD)" to help students understand the CBC transition.

**Community resources:** Teacher 10 identified "the County meteorological department officer" for weather and climate education. Teacher 5 suggested "the local village chief" for community environment projects. Teacher 9 identified the local police post for school security education. This diversity suggests teachers understand that partnerships extend beyond traditional business-education relationships to include diverse community stakeholders.

##### ***Specificity of planned partnership activities***

Teachers moved beyond vague partnership ideas to specific learning activities. The level of detail varied, but many teachers articulated concrete plans. Teacher 12 provided the most detailed example: "taking the learners on an educational tour to an Equity Bank in the nearby Nyahururu town to observe how cash is handled, how deposits and withdrawals are done, and the use of banking technology, e.g., ATM and mobile banking" to develop competencies in entrepreneurship.

Teacher 11 outlined a comprehensive mentorship approach: "Outline the STEM pathway for Grade 10 physics students. Showcase the relevance of physics in the engineering career. Offer mentorship and job shadowing experience to learners during holidays." Teacher 3 planned multiple partnership activities: "guest speakers, an industry tour, and a career fair."

Several teachers identified role modeling as a key partnership activity, particularly emphasizing the importance of female role models for girls. Teacher 16 wrote: "The pacesetter would most likely be a lady who would inspire the students and act as their role model. The activities that we would plan together would be mentoring the girls about Chemistry and their industry; help me in guiding the girls on the subjects that they can pick; and be their role model whom they can contact for information." This reflection highlights the importance of gender-responsive mentorship within a girls' school context. The emphasis on female role models suggests awareness that representation and identity development may play an important role in students' career aspirations and educational choices.

##### ***Understanding mutual benefits and practical considerations***

Some teachers indicated understanding that partnerships must offer value to both parties, though this was less developed than other aspects. Teacher 6 referenced partnerships with "local sports academies and community youth sports teams" without detailing mutual benefits, suggesting this may be an area needing further development.

Teachers also showed awareness of practical partnership considerations. Teacher 1 identified "an Agricultural Extension Officer" who could "provide learners with practical exposure to modern farming techniques like artificial insemination, machine milking, integrated pest management, and genetically modified organisms." This suggests an understanding of accessing existing government services designed to support education.

## DISCUSSION

This study examined teacher learning following a targeted professional development intervention on CBC implementation at a new girls' school in Nyahururu, Kenya. The findings reveal that teachers developed conceptual understanding of the four training domains and generated specific implementation plans, while also identifying challenges and contextual factors affecting their readiness for CBC implementation. This discussion interprets these findings in relation to existing literature on teacher professional development, competency-based education, and educational reform in Kenya.

### Teacher learning and the professional development model

The findings provide evidence supporting Guskey's (2002) model of teacher change, which posits that effective professional development must provide practical strategies that teachers can envision implementing. Teachers in this study moved beyond surface understanding to articulate specific classroom applications across all four training domains. This progression from conceptual understanding to implementation planning suggests that the active, job-embedded nature of the training may have supported teacher learning and implementation planning.

The workshop format, combining presentation, collaborative activities, and guided planning time, appeared to facilitate teachers' engagement with CBC concepts and their consideration of potential implementation strategies. Teachers generated concrete deliverables (curriculum maps, project plans, partnership strategies) during the sessions, which may have enhanced their sense of efficacy for implementation. This aligns with research showing that effective professional development for pedagogical change requires opportunities to actively engage with new practices rather than passive reception of information (Darling-Hammond and McLaughlin, 2011).

Importantly, none of the participating teachers had previously received formal professional development focused on CBC implementation. As a result, the reflections provide insight into teachers' initial interpretations of competency-based teaching and

learning following targeted training. The variation observed in the specificity and depth of teachers' responses may reflect differences in professional experience as well as the fact that many participants were engaging with these concepts in a structured manner for the first time.

However, the reflections captured teacher thinking at a single point in time, immediately following training and before actual classroom implementation. Guskey's (2002) model suggests that bigger changes in teacher beliefs often follow (rather than precede) successful implementation and evidence of student learning. Longitudinal research is needed to determine whether the teachers' planned approaches lead to actual practice change and, ultimately, shifts in their underlying beliefs about teaching and learning.

### Understanding of CBC principles

Teachers indicated a solid understanding of core CBC principles, particularly the emphasis on real-world application, competency development, and authentic assessment. Their reflections showed they grasped that CBC requires fundamental shifts from traditional content-coverage approaches to focus on what students can do with knowledge.

The emphasis on community problem-solving as a foundation for project-based learning suggests that teachers understood CBC's requirement for authentic, contextual learning (KICD, 2017). Teachers did not simply propose "doing projects" but specifically connected projects to community issues and competency development. This represents a deeper understanding than simply adopting new instructional techniques without grasping their purpose.

Teachers' recognition of communication as a competency requiring intentional development across modalities also aligns with CBC requirements (KICD, 2017; KNEC, 2021). The specificity with which teachers identified assessment strategies, particularly the use of rubrics and performance tasks, suggests they understood that CBC assessment differs from traditional testing approaches.

However, less evident in the reflections was explicit attention to self and peer assessment, which KNEC (2021) identifies as a key component of competency-based assessment. While some teachers mentioned peer teaching and feedback, few articulated how they would develop students' capacity for self-assessment and metacognition. This may represent an area where additional professional development would be valuable.

### Project-based learning as a CBC vehicle

The findings reveal that teachers expressed readiness to

embrace project-based learning as an approach aligned with CBC goals. Teachers understood PBL not as an occasional enrichment activity but as a pedagogical approach for developing competencies through authentic application. This understanding aligns with research on high-quality PBL (Buck Institute for Education, 2023) and suggests that many teachers demonstrated emerging understanding of key PBL principles following the training.

Particularly noteworthy was the teachers' focus on community problems as project foundations. This local, contextual approach to PBL may be especially appropriate for resource-constrained settings where abstract or elaborate projects may not be feasible. By identifying authentic problems in their immediate environment, teachers were designing projects that require minimal financial resources while maintaining authenticity and relevance.

However, the quality of project ideas varied across teachers. Some articulated well-developed project plans with clear competency targets and assessment approaches, while others provided only general ideas. This variation suggests that ongoing support and modeling may be needed as teachers move from planning to implementation. Research on PBL implementation shows that teachers often struggle to maintain key PBL characteristics when implementing projects independently (Condiliffe et al., 2017), highlighting the need for sustained professional development and peer collaboration.

### **Career connections and pathway implementation**

Teachers' identification of diverse career pathways connected to their subjects addresses a critical implementation challenge in Kenya's CBC. The pathway system at senior secondary level requires teachers to help students see how their subject learning connects to career options in STEM, Social Sciences, or Arts and Sports (Kubai and Owiti, 2022). Teachers in this study moved beyond vague career relevance to identify specific occupations and transferable workplace competencies.

These findings are particularly important within the context of Kenya's CBC pathway structure, which requires students to make educational choices aligned with their interests, strengths, and future career aspirations. By helping students connect subject content to specific occupations and transferable workplace competencies, teachers can support more informed pathway selection and strengthen students' understanding of the relevance of their learning. In a girls' school context, these efforts may be especially valuable for broadening awareness of career opportunities, challenging traditional gender stereotypes, and encouraging participation in fields where women have historically been underrepresented, particularly within STEM-related pathways.

The emphasis on inviting professionals and mentors as a strategy for making career connections visible represents a practical approach that links to partnership training. This integration across training domains suggests teachers were beginning to see connections among the four CBC implementation elements rather than treating them as separate requirements.

However, the depth of career-subject connections varied by discipline. Teachers of applied subjects (Art and Design, Business Studies) articulated more specific career pathways than teachers of foundational subjects (Mathematics, English). This may reflect genuine differences in career transparency across fields, or it may indicate that teachers of foundational subjects need additional support in making career connections explicit.

### **Employer and community partnerships**

The diversity of partners teachers identified demonstrates creative thinking about partnership possibilities beyond traditional business-school relationships. Teachers recognized that partnerships could involve government agencies, NGOs, educational institutions, and community resources. This broad conception of potential partners is important in semi-urban settings like Nyahururu, where large corporations may be limited, but other community resources are available.

The specificity of partnership plans varied considerably. Some teachers outlined detailed activities with clear learning objectives, while others provided only general ideas about potential partners. This variation may reflect differences in teachers' existing community connections or their confidence in initiating partnerships. Research on school-employer partnerships emphasizes the importance of mutual benefit and careful relationship management (Mann et al., 2018), suggesting that teachers may need ongoing support in developing and sustaining partnerships.

Notably, several teachers emphasized the importance of female role models for the girls at the school, showing attention to the gender-responsive pedagogy appropriate for an all-girls institution. Teacher 16's reflection about identifying "a lady who would inspire the students and act as their role model" demonstrates awareness that partnerships serve not only academic but also aspirational purposes for students.

### **Context-specific factors**

The new school context appears to have been both an advantage and a challenge for CBC implementation. Teachers recognized the opportunity to build new practices without the constraint of established traditional

routines. However, the newness also meant limited resources, growing community relationships, and the need to establish basic systems while simultaneously implementing a reformed curriculum.

The girls' education context emerged in several reflections, particularly around the importance of female role models in STEM and business fields. This attention to gender-responsive pedagogy is important given persistent gender gaps in certain career fields in Kenya. The all-girls school environment may provide opportunities for building students' confidence and challenging gender stereotypes that would be more difficult in coeducational settings.

The Nyahururu location and Laikipia County context shaped the specific partners and community problems teachers identified. Agricultural partnerships, environmental issues, and local government services featured prominently, reflecting the regional context. This contextualization of CBC implementation is essential, as curriculum reforms that ignore local realities are unlikely to succeed (Schweisfurth, 2013).

### Challenges and support needs

While the reflections were generally optimistic and action-oriented, they also revealed challenges and support needs. Time emerged as a concern, with several teachers noting that project-based approaches require more planning time than traditional instruction. Resource limitations, particularly technology access, were mentioned by teachers planning digital communication development.

Less explicitly stated but evident in the variation across reflections was the need for ongoing professional development support. Teachers are at different points in their understanding and readiness for CBC implementation. Some articulated sophisticated plans showing deep understanding, while others provided more surface-level responses. This variation suggests that one-time training, even when well-designed, is insufficient. Schools implementing CBC need ongoing professional learning communities, peer observation opportunities, and access to CBC implementation resources and exemplars.

### Implications for practice and policy

Because the findings are drawn from teacher reflections collected immediately following professional development in a single school context, these implications should be viewed as preliminary and exploratory rather than broadly generalizable:

- **Professional development design:** The four-domain approach used in this study represents one potentially useful framework for supporting teacher understanding of

CBC implementation and warrants further exploration in diverse educational contexts. The combination of conceptual understanding, collaborative planning, and deliverable creation appears to encourage teacher reflection and implementation planning. However, professional development cannot be a one-time event. Schools need ongoing support structures, including peer collaboration time, access to CBC resources and exemplars, and opportunities for iterative refinement of practice.

- **Pathway implementation support:** Teachers need subject-specific guidance on career pathway connections. While the training helped teachers begin identifying career links, sustained support is needed to develop deep, authentic connections between subject content and career competencies across all disciplines.

- **Partnership facilitation:** Schools need support in initiating and managing community partnerships. While teachers identified potential partners, moving from identification to actual partnership implementation requires relationship-building skills, time for coordination, and school-level support. District or county-level coordination of school-employer partnerships could reduce the burden on individual teachers while ensuring quality and sustainability.

- **New school advantages:** New schools represent important sites for CBC innovation, as they can build CBC-aligned cultures and practices from inception. Policymakers and educational leaders should provide targeted support to new schools to capitalize on this opportunity while helping them address resource and capacity challenges.

- **Girls' education considerations:** The importance of female role models and gender-responsive pedagogy in CBC implementation for girls' schools should be recognized. Partnership development should prioritize connecting students with successful women in various career fields.

- **Research needs:** This study captured teacher thinking immediately following training, before implementation. Longitudinal research is needed to understand how initial plans translate to actual practice, what barriers and enablers emerge during implementation, and how teacher beliefs evolve as they gain experience with CBC approaches.

### Limitations

Several limitations should be considered when interpreting

the findings of this study. First, the researcher served in the dual role of trainer and researcher, creating the potential for bias in both data collection and interpretation. Because participants engaged in professional development facilitated by the researcher, teachers may have felt inclined to provide responses that aligned with the training content or reflected positively on their learning experiences. Although reflective prompts encouraged honest responses and the analysis focused on teachers' own perspectives, the possibility of socially desirable responses and researcher influence cannot be fully eliminated.

Second, as a single case study of one school, the findings may not be generalizable to other educational contexts. The school's status as a newly established girls' senior school in a semi-urban setting represents a unique combination of contextual factors that likely influenced teachers' experiences and responses to the professional development.

Third, the study relied on self-reported reflections rather than observational data of classroom practice. Teachers' stated intentions and plans for implementation may not necessarily translate into enacted instructional practices, and reflections may represent aspirational goals rather than actual classroom behaviors.

Fourth, data were collected immediately following the professional development sessions, capturing teachers' initial reactions and perceptions rather than sustained learning or long-term implementation. Additional follow-up data would be needed to understand how teachers' ideas evolved over time and whether intended practices were successfully integrated into instruction.

Finally, the study focused on teacher learning and perceptions rather than student outcomes. As a result, the findings cannot determine whether the professional development ultimately influenced student learning, competency development, or achievement within the Competency-Based Curriculum framework.

## Conclusion

This case study suggests that targeted, practical professional development may support teacher understanding of CBC implementation requirements and encourage planning for classroom application. Teachers at Top of the Hill Girls Senior School developed conceptual understanding of theory-career connections, project-based learning, communication skill development, and community partnerships, while also generating specific implementation plans across these domains. The findings suggest that the four-domain approach may help teachers consider several core CBC implementation challenges and that combining conceptual learning with collaborative

planning may contribute to perceived readiness for implementation.

However, the study also reveals that professional development is only a starting point. Moving from planning to sustained implementation will require ongoing support, peer collaboration, access to resources and exemplars, and school-level structures that enable CBC approaches. As Kenya continues to implement its curriculum reform, further research is needed to understand how professional development experiences such as those described in this study influence classroom practice, teacher learning, and student outcomes over time.

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