



COMPETENCE-BASED TEACHING STRATEGIES

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Abstract: Competence-based teaching strategies represent a paradigm shift from traditional knowledge-transmission models to learner-centered approaches that prioritize the development of demonstrable skills and abilities. This paper examines the theoretical foundations, practical strategies, and implementation considerations of competence-based teaching in contemporary education. Drawing on recent research from 2024-2026, the study synthesizes evidence regarding effective instructional strategies including mastery learning, authentic assessment, student-centered approaches, and the integration of educational resources. The findings indicate that competence-based teaching strategies significantly enhance the development of learning strategies when properly implemented, with open educational resources serving as important moderators of effectiveness. However, research also reveals persistent implementation gaps between teachers' perceived and actual application of these strategies, highlighting the critical need for structured teacher development programs. The paper concludes by outlining key strategies for effective competence-based teaching and recommendations for practice and future research.

Keywords: Competence-based education, teaching strategies, mastery learning, authentic assessment.

Introduction

The competence-based approach to education has emerged as a dominant paradigm in global educational reform, driven by the need to prepare learners for the complex demands of the 21st century. Unlike traditional approaches that emphasize content coverage and factual recall, competence-based teaching focuses on developing learners' abilities to apply knowledge, skills, and attitudes effectively in authentic contexts. This approach has gained particular momentum following the COVID-19 pandemic, which accelerated the shift toward more flexible, learner-centered educational models.



Despite widespread adoption, competence-based education faces significant implementation challenges. Research indicates fragmented theoretical foundations across disciplines and inconsistent application of teaching strategies, hindering scalability and effectiveness. Teachers often struggle to translate competence-based principles into classroom practice, revealing gaps between what educators believe they are doing and what actually occurs in their classrooms. These challenges underscore the importance of identifying and understanding effective competence-based teaching strategies. This paper aims to provide a comprehensive overview of competence-based teaching strategies, examining their theoretical underpinnings, practical applications, and the conditions necessary for successful implementation. By synthesizing recent research from diverse educational contexts, the paper offers insights for educators, administrators, and policymakers seeking to enhance competence-based teaching and learning.

Competence-based teaching is grounded in several complementary theoretical frameworks that inform instructional design and practice. Understanding these foundations is essential for implementing effective teaching strategies. Constructivist learning theory provides a primary theoretical basis, emphasizing that learners actively construct knowledge through experience and reflection rather than passively receiving information. This aligns with competence-based approaches that prioritize authentic learning experiences where students apply knowledge to real-world problems.

Mastery learning theory, originally developed by Bloom (1968), posits that all students can learn when provided with appropriate time and support. This foundation underpins competence-based teaching strategies that emphasize flexible pacing and multiple opportunities for demonstration of competency.

Cognitive load theory informs the design of instructional scaffolds that support learners as they develop complex competencies. Research demonstrates that worked examples and structured practice are particularly effective for novice learners acquiring new competencies. Self-regulation theory emphasizes the role of metacognition and learner agency in competency development. Competence-based teaching strategies increasingly focus on developing students' abilities to monitor, evaluate, and direct their own learning. Student-centered teaching strategies are fundamental to competence-based education. These approaches shift the teacher's role from knowledge transmitter to learning facilitator, emphasizing personalized learning pathways that respond to individual student needs, interests, and developmental levels. Research by Marzano and colleagues (2025) highlights that effective competency-based schools implement strategies that encourage student agency



and self-directed learning, enabling learners to take ownership of their educational journeys.

However, studies reveal significant implementation challenges. A mixed-methods study of middle school teachers in Addis Ababa found a wide gap between teachers' claimed use of student-centered approaches and their actual classroom practice. While teachers reported employing student-centered methods, classroom observations revealed minimal engagement with these strategies, suggesting that effective implementation requires more than theoretical knowledge—it demands structured support and ongoing professional development. Authentic learning strategies connect classroom content to real-world contexts, enabling students to develop competencies that transfer beyond educational settings. These strategies include project-based learning, problem-based learning, simulation-based activities, and real-world case studies. The underlying principle is that competencies are best developed through engagement with tasks that mirror the complexity and ambiguity of professional and civic life.

Research by Neminska (2025) demonstrates that authentic learning strategies are particularly effective for developing key competencies when implemented through project-based, problem-based, simulation-based, and situational approaches. These methods transform the learning process from factual acquisition to activity-oriented engagement, laying foundations for durable competencies. Mastery learning strategies require students to demonstrate competence at predetermined levels before advancing to new content. This approach replaces time-based progression with performance-based advancement, ensuring that all learners achieve defined competencies. Deliberate practice—focused, systematic practice with immediate feedback—is a key instructional strategy within mastery learning frameworks.

Recent research synthesizing multiple studies confirms that mastery learning with technology-enhanced simulation produces significant improvements in learner outcomes across various domains. The combination of clear performance standards, structured practice opportunities, and formative feedback enables learners to develop competencies efficiently and effectively. Assessment in competence-based teaching serves primarily to support learning rather than merely measure it. Formative assessment strategies provide ongoing information about student progress, enabling timely adjustments to instruction and learning activities. These strategies include descriptive feedback, self-assessment, peer assessment, and regular progress monitoring. Research emphasizes that effective competence-based assessment requires shifting from assessing factual knowledge to implementing formative, stimulating



assessment that encourages growth and development. This transformation of assessment practices is essential for creating learning cultures that support competency development.

The effectiveness of competence-based teaching strategies depends significantly on contextual factors, particularly the availability and quality of educational resources. A recent study by Lin and colleagues (2026) examining competency-based curriculum implementation in Taiwanese universities found that open educational resources (OER) substantially improved learning outcomes compared to traditional printed materials alone. The research demonstrated that strategic integration of educational resources—especially OER—amplifies the positive effects of competency-based approaches on learning strategy development. This finding has important implications for teaching practice. Educators implementing competence-based strategies should consider not only instructional methods but also the resources that support those methods. Diversifying instructional resources, incorporating digital and open educational materials, and ensuring access to authentic learning tools enhance the effectiveness of competence-based teaching strategies.

Although Competency-Based Education (CBE) has been widely implemented in recent years, its theoretical foundations are interpreted differently across various disciplinary fields. Recent 2026 scientific research indicates that the fragmented theoretical foundations of CBE create significant challenges for its implementation and research. Consequently, researchers are proposing the development of a unified meta-framework that integrates various theories, models, and stage-based development concepts of CBE. In competency-based education, considering learners' developmental stages is of critical importance. The proposed meta-framework includes the following stages:

Stage Learner Needs Appropriate Strategies

Novice Structured guidance, clear instructions Worked examples, step-by-step guidance

Intermediate Independence, practice, reflection Problem-based learning, case studies, micro-teaching

Expert Innovation, complex problems Research projects, mentoring, collaborative projects

This stage-based model enables teachers to select strategies appropriate to each learner's individual developmental level. Research shows that stage-inappropriate strategies (e.g., giving complex problem-based tasks to novices) increase learners' cognitive load and hinder competency development.

4.2 Cognitive Load Theory and Competency-Based Education



Cognitive Load Theory plays a significant role in explaining the effectiveness of competency-based teaching strategies. According to this theory, human working memory has limited capacity and can easily become "overloaded" when processing new information.

In competency-based education, the following types of cognitive load are distinguished:

1. Intrinsic load - related to the complexity of the task itself
2. Extraneous load - related to the presentation format of the material
3. Germane load - related to the learning process itself

Effective competency-based strategies should reduce extraneous load while increasing germane load. The worked examples strategy serves precisely this purpose: for novices, step-by-step solutions to complex problems are provided, allowing them to focus their attention on the core competency being developed.

5. Digital Transformation and Competency-Based Education

5.1 The Role of Open Educational Resources

Recent research demonstrates that Open Educational Resources (OER) play a significant moderating role in enhancing the effectiveness of competency-based education. A study conducted in Taiwanese universities (n=371) compared two groups of students: those using traditional printed materials and those using open educational resources.

According to the research findings, open educational resources serve to develop students' independent learning strategies and enhance the positive impact of the competency-based approach. This is particularly important in the post-COVID-19 era of distance and hybrid learning environments.

5.2 Data Architecture and Competency Portability

One of the main challenges in developing competency-based education is the portability and interoperability of competency-related data. Experts from the Competency-Based Education Network (C-BEN) emphasize that many organizations have not yet fully recognized the strategic importance of publishing competencies in linked open data formats. Key Requirements for Data Architecture:

1. Credit portability - recognition of competencies acquired across different educational institutions
2. AI-readiness - artificial intelligence systems must be able to process competency data
3. Employer integration - competencies must align with labor market demands

The "skills ready technology rubric" developed by C-BEN enables assessment of how well technological solutions meet competency-based



education needs. This is particularly important for work-embedded learning and apprenticeship programs. Kenya has accumulated significant experience during its transition from the 8-4-4 system to competency-based education (Competency-Based Curriculum - CBC). Research conducted by the Brookings Institution (2025) indicates that although teachers understand the pedagogical goals of CBC, consistent and equitable implementation is constrained by several factors. Uganda introduced the competency-based curriculum (Lower Secondary Curriculum - LSC) in February 2020. A qualitative study involving 21 teachers identified the following opportunities:

- Teacher collaboration - the competency-based approach encourages teachers to work together

- Active learning - increased student engagement

- Generic skills development - critical thinking, problem-solving, communication

However, the research indicates that full realization of benefits is constrained by systemic challenges. The biggest challenge is misalignment with the competency-based approach, with teachers showing a tendency to revert to old, teacher-centered methods. This is primarily associated with:

- Lack of resources

- Limited ICT competencies

- Poor infrastructure

- Training deficiencies

Under-resourced schools are particularly affected by these challenges. Researchers emphasize that targeted and differentiated support systems, including resource allocation, continuous professional development, and institutional support for ICT integration, are crucial. Rwanda has implemented a competency-based professional development program (CPD-ITMS) in Teacher Training Colleges (TTCs). This program consists of two modules:

1. CMS1142 - E-Learning and ICT Integration - developing digital competencies

2. CMS1141 - Innovative Teaching Methods - student-centered and inquiry-based approaches

The program's distinctive feature is its blended learning model: a combination of 8 face-to-face sessions and online activities. After each session, teachers complete practical assignments, applying their knowledge in real classroom settings. Important topics such as inclusive education, gender sensitivity, ICT integration, and competency-based pedagogy are integrated into the program. This approach serves to develop not only teachers' subject knowledge but also their competencies for providing equitable and quality education. In competency-based education, since learners acquire different



competencies at varying rates, remediation (additional support) strategies hold particular importance. Research conducted in Philippine secondary schools (n=10 biology teachers with at least 10 years of experience) shows that although teachers employ active and student-centered approaches, the effectiveness of their remediation is limited by several factors. Remediation Researchers have proposed a Competency-Based Remediation Framework containing the following elements:

Stage	Activity	Expected Outcome
1.	Diagnosis	Profile creation, testing
2.	Planning	Preparing differentiated materials
3.	Implementation	Peer tutoring, simplified tasks
4.	Monitoring	Progress tracking, formative assessment
5.	Assessment	Competency verification

development

adjustments

Timely

Progression to next stage

This framework serves to systematize the remediation process, ensure equitable and effective approaches, and enable learners to fully master competencies. Despite the demonstrated benefits of competence-based teaching strategies, implementation remains challenging across diverse educational contexts. Research from Tanzania examining head teachers' strategies for supporting competence-based curriculum implementation identified several persistent challenges: lack of resources, large class sizes, and insufficient teacher competence in implementing competency-based approaches effectively. To address these challenges, successful implementation requires multi-faceted support strategies. A study of small-sized secondary schools in Thailand identified three key development guidelines for enhancing competency-based instruction: practical training workshops, coaching and mentoring programs, and collaborative lesson development through professional learning communities. These structured support mechanisms help teachers translate competence-based principles into effective classroom practice. Additionally, research emphasizes the importance of teacher professional attitudes toward competence-based approaches. Neminska's (2025) study of primary teachers' attitudes revealed that successful implementation requires transformation of teaching methodology, personal teaching practices, and classroom organization. Teachers must develop not only new instructional skills but also changed attitudes and beliefs about teaching and learning.

Conclusion



Competence-based teaching strategies represent a fundamental reorientation of educational practice toward the development of demonstrable skills and abilities applicable in authentic contexts. This paper has examined the theoretical foundations, core strategies, moderating factors, and implementation considerations associated with competence-based teaching. The evidence synthesized in this paper supports several key conclusions. First, effective competence-based teaching integrates multiple complementary strategies, including student-centered approaches, authentic learning, mastery learning with deliberate practice, and formative assessment. Second, the effectiveness of these strategies is significantly enhanced by strategic use of educational resources, particularly open educational resources that support flexible, personalized learning. Third, successful implementation requires structured teacher development programs that address not only instructional skills but also professional attitudes and beliefs. However, research consistently reveals implementation gaps between theoretical principles and classroom practice. Teachers require ongoing support through practical training, coaching and mentoring, and collaborative professional learning communities to translate competence-based approaches into effective teaching practice. Additionally, systemic factors including resource availability, class size, and administrative support significantly influence implementation success.

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