



RESEARCH ARTICLE

Teacher Educators' Challenges in Training Pre-Service Primary School Teachers for Competency-Based Primary Education

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| ARTICLE INFO | ABSTRACT |
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| Received: Nov 12, 2024 Accepted: Jan 24, 2025 | <p>Competency-based education (CBE) has emerged as a transformative approach to teaching and learning, emphasizing the development of specific skills and competencies rather than the mere transmission of knowledge. While this approach has gained widespread attention in many countries, its implementation in the Vietnamese primary school context presents underexplored challenges. This descriptive qualitative study investigates the experiences of educators who are training pre-service teachers on competency-based education, focusing on the difficulties they face in adapting traditional teaching practices to the CBE framework. Through in-depth interviews with 10 teacher educators from various disciplines, the study examines key challenges, including the inconsistent understanding of CBE principles, difficulties in aligning teaching activities with assessments, and the struggle to integrate interdisciplinary competencies. Thematic findings reveal that both teacher educators and pre-service teachers face significant hurdles due to entrenched traditional educational practices and a lack of resources for CBE implementation. The study contributes to the existing literature by offering insights into the specific needs of the Vietnamese educational context, particularly in the primary school sector, and provides recommendations for more context-specific training programs across subjects and learner-driven instructional strategies to support the transition to competency-based teaching and assessment.</p> |
| <p>Keywords</p> <p>Competency-based Education Teacher educators Pre-service teachers challenges</p> | |
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INTRODUCTION

Competency-based education (CBE) is gaining traction worldwide as an approach that prioritizes the development of practical skills and competencies over the traditional focus on knowledge acquisition. This paradigm shift is seen as essential for preparing students for the complexities of the modern workforce and for equipping them with the necessary skills to succeed in a rapidly changing world. In many countries, the implementation of CBE has been met with both enthusiasm and challenges, as educators must adjust their teaching practices to meet the demands of a competency-driven curriculum. In Vietnam, the push towards competency-based education has gained momentum in recent years, particularly with the introduction of the 2018 education curriculum. However, despite its potential to improve educational outcomes, the adoption of CBE principles in Vietnam's primary education system has proven to be challenging. Teacher educators who train pre-service teachers often report difficulties in aligning their teaching practices with the competency-based framework. These challenges are compounded by the long-standing tradition of content-based education, which has emphasized rote memorization and the transmission of knowledge over the development of skills. This study aims to investigate the perceptions of teacher educators in Vietnam regarding the challenges they face when preparing pre-service teachers to implement CBE. By examining the specific barriers within the Vietnamese context, the research seeks to contribute to

contextual understanding of how CBE can be more effectively integrated into teacher training programs. The findings potentially offer valuable views for both policymakers and educators, highlighting the need for more targeted training and support to ensure a successful transition to competency-based education for the target teachers and learners at primary schools.

LITERATURE REVIEW

Competency-based education

Competency can be understood as people's capability to responsibly perform actions, resolve tasks in social and personal professional fields in different situations, based on knowledge, skills, techniques, and experience and readiness to act. Competency-based education (henceforth called CBE) is considered as an outcomes-focused educational model (Riesman, 1980). This emphasizes the demonstration of mastery towards specific knowledge, skills, attitudes, values, and academic behaviors required for a particular degree or professional role. Spady (1977) conceptualizes a CBE as "a data-based, adaptive, performance-oriented set of integrated processes that facilitate, measure, record, and certify within the context of flexible time parameters the demonstration of known, explicitly stated, and agreed upon learning outcomes that reflect successful functioning in life roles" (p. 10). Furthermore, Riesman (1980) defines a CBE as "a form of education that derives curriculum from an analysis of a prospective or actual role in modern society and that attempts to certify student progress on the basis of demonstrated performance in some or all aspects of that role" (p. 6). Gervais (2016) synthesizes it as "an outcome-based approach to education that incorporates modes of instructional delivery and assessment efforts designed to evaluate mastery of learning by students through their demonstration of the knowledge, attitudes, values and behaviors required for the degree sought" (p. 99).

CBE is grounded upon many learning theories, incorporating elements of behaviorist, functionalist, and humanistic approaches. Linking measurable learning objectives with assessment strategies and advocated for a dynamic curriculum that is "always under evaluation and revision" (Le et al., 2014, p. 13). These ideas support a student-centered approach that stands in contrast to the static curricula of traditional models. Most students are able to master what teachers have to teach them given appropriate instructional means and time. The development of learning modules introduces a step-by-step process for breaking down learning objectives into specific learning tasks. These foundations collectively stress that effective learning requires a personalized and practical approach. Moreover, this approach ensures that the curriculum and teaching methods are continually refined based on stakeholders' feedback and culminate in students' specific competencies.

Components of a CBE model revolve around clearly defined learners' competencies, teachers' professional pedagogical practices, interdisciplinary resource integration, and stakeholders' continual assessment. Central to CBE is the focus on outcomes. This means that students must demonstrate a high level of competencies in the knowledge, skills, attitudes, values, and behaviors relevant to their field before graduating (Albanese et al., 2008). The curriculum is designed by working backward from these desired competencies, integrating both horizontal and vertical learning approaches, where students must connect ideas across courses (horizontal) and master in-depth content within individual courses (vertical) (Albanese et al., 2008; Clark, 1976). Teachers' instructional strategies are wished to possess significant preparations which include varied learning activities, effective use of information technology, and opportunities for peer mentoring. These endeavors aim at fostering an inclusive rich learning environment tailored to individual student needs. Others' assessment in CBE is continuous and multifaceted. Their feedback should employ formative assessments for ongoing feedback and summative assessments to certify students' mastery and improved competencies. This combination guarantees the evaluations based on students' performance rather than relative comparisons among them (Le et al., 2014).

Pace (2013) introduces a continuum which distinguishes between specific progressive elements of a CDE and that a content-based education (see Table 1). This comparison serves to develop a CDE and effectively implement it in every level in an educational system.

Table 1. Elements of a CDE

| Category | Content-based | Competency-based |
|-----------------------------|---|---|
| School Culture | Limited accommodation for student interests and learning styles. | Students-centered learning with teachers' support and community partners |
| Learning Progression | Focus on mastering grade-level standards. | Emphasis on mastering defined competencies with clear objectives. |
| Learning Pace | Students' progress at a uniform pace regardless of readiness. | Customized supports ensuring students stay on track to graduate. |
| Instruction | Teachers' delivery on a fixed instructional program with minimal differentiation. | Collaborative planning tailored to learning plans based on individual needs and real-time data. |
| Assessment System | Assessing students at set times with one opportunity for a final summative test. | Ongoing formative and summative assessments with guided instructions |
| Grading Policies | Norm-referenced grades based on weighted periods and a final exam. | Competency-based grading with opportunities to relearn unmet competencies. |

Competency-based education in Vietnam

In the context of international integration and educational, Vietnam has deployed a CBE as an advanced teaching method which seeks to enhance the quality of education and meet societal needs and the labor market's requirements. Competency-based education curricula in Vietnam focus on equipping students with professional knowledge, essential skills, and the appropriate attitudes necessary for their future professions and trajectories. These programs are designed according to specific objectives, principles, content, and methods that are suitable for supporting students in developing the essential competencies required. More critically, the Ministry of Education and Training has issued Circular No. 32/2018/TTBTC dated December 26, 2018, concerning the general education curricula. This circular has been implemented since the 2020-2021 academic year, starting from primary education and progressing to subsequent educational levels. In primary education, this circular marks a significant milestone in applying the principles of a CBE and laying the groundwork for its sustainable development within Vietnam's education system. Specifically, it emphasizes competency-based development, teachers' active teaching methodologies, interdisciplinary integration and assessment on student progress. To successfully implement a CBE, the quality of teachers can be seen a prerequisite. They must be appropriately trained during their formative years as pre-service teachers. This endeavor in training pre-service teachers for a CBE implementation guarantee that they develop the necessary pedagogical competences, subject matter expertise, and a deep understanding of CBE principles from the very beginning of their careers.

Primary Teacher Education in Vietnam

Primary teacher education aims to train teacher students who are able to teach, manage classrooms and inspire children in primary-level educational institutions (Nguyen et al., 2022). Different from other teacher education majors, primary teachers are required to be able to impart knowledge of fundamental social and natural sciences to children. Moving into the 21st century, they are subsequently trained with modern pedagogical methodologies, child-centered development psychology and pedagogical communication competences (Nguyen & Ta, 2025). Student teachers learn how to design engaging lessons, implement technology into professional practices, and create a positive learning environment. Furthermore, they are trained to improve communication skills, situation management and building good relationships with stakeholders in order to better

understand the developmental needs of each student. School-based teaching practicums further allow teacher students to apply knowledge to practice, helping them confidently handle challenges in the classroom and flexibly adjust teaching methods to each situation. With the mission of not only imparting knowledge but also nurturing personality, teachers who graduate from primary teacher education programs contribute to shaping the educational foundation, helping children develop intellectually and emotionally. They become trustworthy companions, support children explore the world, solve problems and form important life skills.

Competency-based primary education adapt principles from CBE to specific educational context of teaching young learners. This approach critically contributes to curricula which integrate theoretical knowledge with practical competences, ultimately emphasizing reflective practices in teaching. In addition, primary teacher students are encouraged to develop personal and professional competences such as child-centered pedagogy and differentiated instruction tailored to diverse students' learning needs. The CBE facilitates these pre-service teachers to comprehend subject matter and possess practical competences to create supportive and inclusive learning environments for young generation.

Related studies on competency-based education

Much of recent research has investigated the implementation and status of CBE across different educational contexts in the world. These works collectively agree on the notion that CBE is effectively being adopted and contributes greatly to educational reforms (Deng et al., 2024; Phuong & Le, 2024).

Several international studies have shed light on the complexities of educational reforms concerning CBE. Deng et al. (2024) examined Chinese high school teachers' experiences with CBE reform. The finding revealed that despite their stakeholders' professional guidance, teachers often struggled to shift from content-based teaching to competency-focused teaching due to systemic and resource constraints. Similarly, Kacaniku (2024) delved into Kosovo's transition of teacher education curricula toward a competency-based model aligned with European standards. The study revealed tensions between adhering to traditional curricula and meeting new EU integration goals, resulting in specific contradictions in implementation. Additionally, Marcellis et al. (2024) proposed a design framework for blended learning environments that enhance student motivation by supporting students' autonomy, competence, and relatedness within a CBE reform.

Within Vietnamese educational contexts, researchers and teachers have also contributed significant findings on the CBE implementation. Phan (2024) focused on high school teachers' beliefs and practices regarding learner autonomy under a new competency-based curriculum. The finding mentioned both positive attitudes towards autonomy and concerns over classroom feasibility. Building on such themes, Nguyen et al. (2024) concentrated on improving the competence of teacher educators in assessing students' competencies by using surveys among pedagogical students and teacher educators. The research valued a clear need for developing new, fairer assessment methods and equipping teacher educators with the necessary tools and skills to enhance educational quality. In the Mekong Delta region, Phuong and Le (2024) shed light on EFL teachers' perspectives on implementing competency-based assessment (CBA) in higher education. Their qualitative research revealed significant challenges in adapting to new methodologies and resources, alongside the transformative potential of CBA for student engagement, critical thinking, and autonomy. The study emphasized the need for targeted professional development to bridge theory and practice, suggesting implications for policy, practice, and future competency-based educational reforms.

Arguably, these studies contribute to our understanding of CBE implementation and teacher experiences in doing so. However, research concentrating on how teacher educators prepare pre-service teachers within a CBE framework is scarce. This study, therefore, seeks to address this gap by studying the experiences of tertiary teacher educators in training pre-service teachers for competency-based primary education. Addressing this gap is critical in developing appropriate training programs which equip pre-service teachers with necessary competencies needed to succeed in Vietnamese CBE reforms.

Theoretical framework guiding this research

The current research was grounded on Vygotsky's socio-cultural theory. This theory highlights the importance of social interactions for people's cognitive development (Vygotsky, 1978). Specifically, learning is a cognitive process deeply influenced by social and cultural contexts with a particular focus on interactions. A critical element of this theory is the Zone of Proximal Development (ZPD). It conceptualizes the space between what people can achieve independently and what they can accomplish with guidance from more knowledgeable stakeholders. Furthermore, Vygotsky figures out the significant impact of cultural-linguistic backgrounds on how people engage with feedback and scaffolding from collaborative efforts and shared knowledge within an academic community (Lantolf & Thorne, 2006).

The Zone of Proximal Development (ZPD) was perceived particularly pertinent to examining university teacher educators' experiences in training pre-service teachers for competency-based primary education. By focusing on these experiences through the lens of ZPD, specific obstacles, how they adapt their professional practices, and their suggestions for improving the training process can be understood. This framework, accordingly, illuminates the support mechanisms effective in bridging the gap between current and desired competencies and subsequently aligns with the goal of refining competency-based training for pre-service teachers.

In response to the identified gap in the literature and guided by Vygotsky's socio-cultural theory, the research aims to unpack one umbrella question:

What challenges do university teacher educators face in training pre-service teachers for competency-based primary education?

RESEARCH METHODOLOGY

Research design and participant selection

This study adopted a qualitative descriptive design, an approach suitable for capturing and understanding the lived experiences of individuals in specific contexts. Qualitative descriptive research emphasizes rich, detailed accounts of participants' experiences while identifying patterns and shared themes (Sandelowski, 2000). By focusing on university teacher educators' experiences in training pre-service primary teachers, this study aims to provide both individual and cross-individual insights into how CBE is interpreted and implemented.

The research was conducted at the School of Teacher Education, Department of Primary Education, at a university in the Mekong Delta of Vietnam. This institution plays a critical role in preparing pre-service primary teachers, making it a relevant setting for examining the adoption of CBE. Purposive sampling was employed to select ten participants who met two inclusion criteria: (1) a minimum of five years of teaching experience, ensuring sufficient exposure to and familiarity with the shift to CBE outlined in Circular No. 32/2018/TT-BGDĐT by the MoET, and (2) representation from various subjects taught in primary education, including social sciences and natural sciences (see Table 1). This sampling strategy allowed for diverse perspectives on CBE implementation and insights of subject-specific challenges and opportunities.

Table 1. Participants' demographic information

| Pseudonym | Gender | Subject-focus | Years of Experience |
|-----------|--------|-----------------------------|---------------------|
| L1 | Female | Vietnamese, Civic Education | Over 10 years |
| L2 | Female | Vietnamese | Over 10 years |
| L3 | Male | Vietnamese, Civic Education | 5 - 10 years |

| | | | |
|------------|--------|------------------|---------------|
| L4 | Female | Mathematics | Over 10 years |
| L5 | Male | Mathematics | Over 10 years |
| L6 | Female | Natural Science | 5 - 10 years |
| L7 | Male | Arts, Technology | Over 10 years |
| L8 | Female | Vietnamese | 5 - 10 years |
| L9 | Female | Natural Science | Over 10 years |
| L10 | Female | Natural Science | Over 10 years |

Instruments and data collection

Semi-structured interviews were the primary data collection instrument, as they allow for in-depth exploration of participants' experiences while maintaining the flexibility to probe for clarification or elaboration (Kvale & Brinkmann, 2009). The interview protocol was developed to align with the competency-based framework outlined in the 2018 General Education Curriculum (MoET, 2018). Core areas of inquiry included:

- Definitions and conceptual understanding of CBE principles.
- Processes and strategies for designing lessons aligned with competency-based principles.
- Integration of interdisciplinary competencies into teaching practices.
- Testing and assessment methods aligned with the competency-based framework.

Before the interviews, participants received consent forms explaining the study's objectives, the voluntary nature of participation, and assurances of confidentiality. Face-to-face interviews were conducted at the participants' workplaces to create a comfortable and familiar environment. Each interview lasted approximately 45-60 minutes, and all interviews were completed within one week. All interviews were conducted in Vietnamese, transcribe verbatim, translated into English, and kept for confirmability. Initially there were a promising pool of 12 teacher educators that would be appropriate for the study. However, during the pre-data-collection process, two teacher educators who met the inclusion criteria were unable to participate due to unforeseen circumstances. Their absence resulted in a slight underrepresentation in terms of gender balance and subject diversity. Despite this limitation, the remaining ten completed interviews provided sufficient depth and breadth of data to capture the teacher educators' experiences.

Data analysis

The collected data were analyzed using thematic analysis, a method suitable for identifying and interpreting patterns within qualitative data (Braun & Clarke, 2006). As thematic analysis facilitated the organization of narratives into coherent themes, the results and discussions were guaranteed to effectively link to the research focus. A deductive approach guided the analysis, with pre-determined themes included definitions and understanding of CBE, lesson planning, interdisciplinary integration, and assessment practices. Thematic coding ensured alignment with these themes while remaining open to emerging insights provided by the participants.

Braun and Clarke's (2006) six-phase process was followed, starting from familiarization with the data, generating initial codes, identifying themes, reviewing and refining themes, defining and naming themes, to producing the report. Each interview transcript was carefully reviewed and peer-briefed to ensure accurate coding and theme development. Such systematic procedures allowed for a well-rounded understanding of teacher educators' experiences in implementing CBE principles. By adhering to ethical research practices, including informed consent and participant anonymity, the study ensured the integrity of the research process. The findings provide meaningful insights into

the challenges and suggestions teacher educators employ when preparing pre-service teachers for competency-based primary education. Although situated in the context of the Mekong Delta, the study offers valuable implications for broader transferability. Other countries undergoing similar shifts toward competency-based education can reference the findings as this research contributes not only to understanding the Vietnamese context but also to the global discourse on integrating CBE into teacher education.

FINDINGS AND DISCUSSION

This section presents the findings of the study, highlighting the challenges faced by university teacher educators in preparing pre-service teachers for competency-based primary education. The results are organized into five main themes, with subthemes detailing the difficulties encountered by teacher educators in the context of Vietnam's primary education system (see Figure 1). Direct quotes from the teacher educators are included to provide clearer insight into these challenges.

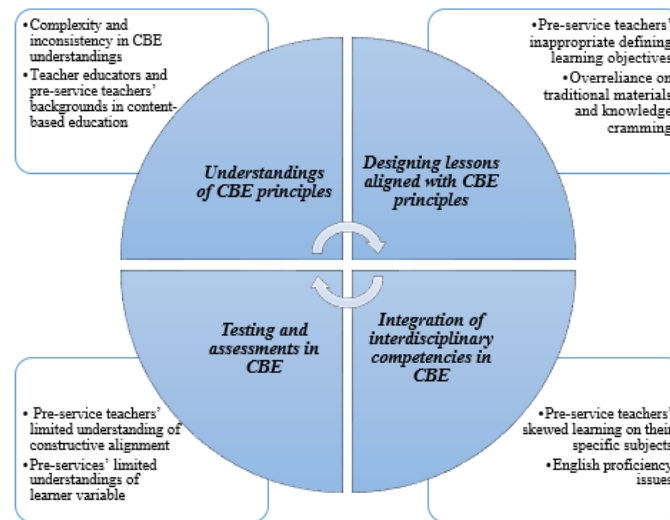


Figure 1. Challenges in preparing pre-service teachers for competency-based primary education

Definitions and conceptual understanding of CBE principles

A significant challenge reported by all 10 teacher educators was the complexity and inconsistent understandings of CBE principles within the Vietnamese context. Many teacher educators noted that CBE was often conceptualized differently across institutions, leading to challenges for both instructors and pre-service teachers. L1 explained, “The concept of CBE is still new. Each university interprets it in its own way, which complicates manifestations.” L6 shared a similar concern, saying, “It’s hard for novice teachers to follow a consistent approach to CBE because there are various ways on how to implement it in practice.”

Another significant challenge was the strong background in traditional, content-based education held by both the teacher educators and current pre-service teachers. Many teacher educators themselves had been trained in a system that emphasized memorization and rote learning, which they then passed on to pre-service teachers. Both groups found it difficult to shift towards competency-based methods. L3 shared, “It’s hard for both the teacher educators and pre-service teachers to move from memorizing facts to thinking critically. We’ve all been taught to focus on content and exams for so long.” Similarly, L8 commented, “Pre-service teachers often don’t grasp the concept of competencies. They just want to know what to memorize for exams, and we as teacher educators struggle to break that habit.”

These findings align with previous research by Phuong and Le (2024) and Nguyen et al. (2024), emphasizing the challenges of gaining understandings of CBE principles. This inconsistency

complicates the transition for both teacher educators and pre-service teachers, who are deeply rooted in traditional, content-based education. Using Vygotsky's ZPD, these challenges can be understood as a developmental gap. Both groups are accustomed to memorization and rote learning, making it difficult to embrace the competency-based focus on critical thinking and problem-solving. This shift requires targeted scaffolding from teacher educators to bridge the gap, offering guidance to help pre-service teachers move from content recall to competency development. The findings underscore the need for clearer, more consistent CBE training to ensure effective and flexible implementation, especially in primary school context.

Processes and strategies for designing lessons aligned with CBE principles

A common challenge noted by teacher educators was the difficulty pre-service teachers faced in defining learning objectives that aligned with CBE, especially when using Bloom's Taxonomy. L2 observed, "Pre-service teachers often get stuck at the basic levels of Bloom's Taxonomy, focusing on remembering and understanding, but they struggle to progress to higher-order thinking like applying or analyzing." L10 added, "It's hard for them to move beyond focusing on factual recall because many pre-service teachers don't know which activities can help develop higher levels of knowledge acquisition."

Teacher educators also observed an overreliance on traditional textbooks and content-heavy teaching materials, which emphasized knowledge cramming rather than developing competencies. L3 remarked, "I still see pre-service teachers relying on textbooks that are outdated and full of content. It's hard to break free from this mindset and focus on developing competencies." L7 added, "In my lessons, I find myself resorting to old teaching materials, which aren't aligned with the competency-based curriculum."

As novices, they require opportunities for guided participation rather than being overwhelmed with immediate expectations. Aligning with Nguyen and Ta (2025), competency-based pedagogical communication training is crucial for helping pre-service teachers gradually develop the necessary skills. Similarly, the findings concurring Deng et al. (2024), discussing that shifting from content-based to competency-focused teaching is difficult due to systemic constraints. From a socio-cultural perspective, learning is a process of co-construction, where novices engage in peripheral participation before fully integrating into new practices (Lave & Wenger, 2017). Without sufficient scaffolding from experienced teacher educators in terms of conceptual and physical support, pre-service teachers struggle to move beyond rote learning, reinforcing the cycle of content-based instruction rather than adopting competency-based approaches.

Integration of interdisciplinary competencies into teaching practices

Five teacher educators noted that pre-service teachers had limited awareness of how to integrate interdisciplinary learning, often focusing narrowly on specific subjects. L5 explained, "Pre-service teachers often focus only on their major subject. They don't see the value of integrating knowledge from other subjects." L4 commented, "They're not trained to think interdisciplinarily. They teach subjects in isolation, and there's little understanding of how subjects can overlap."

Another challenge in integrating interdisciplinary competencies, especially in subjects like STEAM and STEM, was the language barrier. L9 stated, "For teaching subjects like STEM in English, pre-service teachers who lack English proficiency struggle to understand the technical vocabulary. It becomes a big barrier for them." L10 added, "The lack of strong English skills makes it difficult for pre-service teachers to teach interdisciplinary subjects effectively, especially when it comes to STEAM and STEM in teaching sciences."

The difficulty pre-service teachers face in integrating interdisciplinary competencies can be understood through the socio-cultural lens, which emphasizes learning as a socially mediated process. Since English has long been treated as an isolated subject, pre-service teachers have had limited exposure to environments where language is naturally integrated into other disciplines. Without opportunities to engage with diverse perspectives and interdisciplinary teaching models,

they struggle to break away from subject-specific instruction. Within the ZPD framework, meaningful learning requires guided participation in varied educational contexts where interdisciplinary connections are explicitly modeled. To expand their competencies, pre-service teachers need structured training programs that immerse them in interdisciplinary approaches, allowing them to experience and internalize diverse ways of integrating subjects.

Testing and assessment methods aligned with the competency-based framework

Pre-service teachers were reported to be struggled to align teaching activities, objectives, and assessments within the competency-based framework. L1 noted, "They focus on delivering content but don't always consider how to measure competencies effectively." L8 added, "They follow traditional assessments, such as Vietnamese grammar and discourse, without fully aligning them with competency-based learning outcomes." A lack of concrete models made application difficult. L2 shared, "Without clear examples, they rely on content recall rather than competency-based assessment."

Lack of understanding of learner variables was another challenge faced by pre-service teachers in implementing competency-based assessment. Many teacher educators noted that pre-service teachers struggled to differentiate assessments based on students' abilities, learning styles, and backgrounds. L2 observed, "Pre-service teachers often design assessments without considering student diversity. They tend to use one-size-fits-all methods rather than tailoring assessments to different learners." Similarly, L1 stated, "Many pre-service teachers do not understand how to adjust assessment criteria to reflect students' progress and competencies. They need more guidance on making assessments inclusive and adaptable."

These findings align with Kacaniku (2024) and Phan (2024), who stress that pre-service teachers must shift from merely delivering content to fostering learner autonomy through self-study strategies. From a socio-cultural perspective, this challenge reflects the need for guided participation and scaffolding, where pre-service teachers gradually develop the ability to assess competencies through mentorship and exposure to diverse assessment models. Without this structured support, they rely on traditional, standardized methods rather than adapting assessments to learners' diverse needs.

CONCLUSION AND SUGGESTION

The findings of this study generally satisfy the research questions and offer several fresh insights into the implementation of CBE in primary schools, enriching existing research. Notably, teachers from social sciences and natural sciences tend to have divergent concerns regarding CBE training. Natural science teachers focus more on how to enhance pre-service teachers' awareness of integrating competencies, particularly in balancing subject knowledge with skills like communication and problem-solving. They face challenges in embedding general competencies into specialized subjects such as mathematics and science, where content mastery has traditionally been prioritized. In contrast, social science teachers are more concerned with how to train pre-service teachers in designing and implementing competency-based assessments. They emphasize the need for clear guidelines on evaluating students' competencies in a feasible way. These differences brought up the importance of subject-specific training within teacher education programs to ensure CBE is effectively applied across disciplines.

An implication of the study is the need to establish clearer, more context-specific definitions of CBE to ensure it aligns with the realities of primary education. While CBE frameworks often outline broad competencies, they must be adapted to the specific learning needs and developmental stages of young learners. In the primary school context, competencies should not be framed in overly abstract or general terms, as this can make their practical application difficult for both pre-service teachers and students. Teacher education programs must provide explicit models and concrete examples to help pre-service teachers understand how competencies function within classroom instruction. Additionally, standardizing competency-based expectations across institutions would reduce

inconsistencies in interpretation, ensuring that all pre-service teachers receive a coherent and applicable understanding of CBE principles tailored to Vietnam's primary education system.

The study also highlights the necessity of integrating more structured, hands-on training sessions to strengthen pre-service teachers' ability to implement competency-based teaching practices effectively. Many participants emphasized that pre-service teachers struggle to align teaching activities, learning objectives, and assessments in a competency-based framework. To address this, teacher education programs should adopt Biggs' constructive alignment model, ensuring that teaching methodologies, assessments, and intended learning outcomes are coherently linked (Biggs & Tang, 2020). This would help pre-service teachers internalize the process of competency-based lesson planning rather than relying on content-focused instruction. Furthermore, structured mentorship programs, peer coaching, and guided reflections should be embedded within training curricula to bridge the gap between theoretical knowledge and practical application. By providing systematic exposure to competency-based teaching strategies, pre-service teachers will be better equipped to implement them effectively in their future classrooms.

Another consideration is the need for stronger interdisciplinary training to balance subject-specific expertise with general competencies. The findings show that many pre-service teachers tend to compartmentalize knowledge, focusing narrowly on their subject areas rather than seeing connections between disciplines. To address this, teacher training programs should incorporate cross-subject collaborations, allowing pre-service teachers to experience how different subjects can be integrated in practice. For example, pre-service teachers specializing in mathematics should receive training on how to embed communication and problem-solving skills into math lessons, rather than treating these competencies as separate from subject knowledge. Similarly, those specializing in language instruction should explore ways to incorporate critical thinking and analytical skills into their teaching. By promoting interdisciplinary teaching approaches, pre-service teachers can develop a broader instructional perspective and gain the flexibility to adapt competency-based methods across different subjects.

Finally, the study suggests pre-service teachers to be trained with learner psychology, particularly regarding primary school students' cognitive development. Many pre-service teachers struggle to design competency-based assessments that take into account individual differences in students' learning abilities, backgrounds, and cognitive capacities. To address this, teacher education programs must include dedicated training on child psychology and primary school pedagogy. Pre-service teachers should learn how to assess students in ways that reflect both their progress and their competency development, rather than relying on one-size-fits-all assessment methods. Additionally, training programs should introduce scaffolding techniques to help pre-service teachers gradually build students' autonomy and higher-order thinking skills in an age-appropriate manner. Since primary school students are still developing foundational cognitive skills, it is crucial that competency-based teaching methods do not overwhelm them but instead provide gradual, structured support that fosters independent learning at a suitable pace.

This study has certain limitations that should be acknowledged. First, the findings are based on self-reported data from teacher educators, which may carry inherent biases such as selective memory, exaggeration, or social desirability. Second, the study involved a relatively small pool of participants, which, while providing rich and detailed insights, may not fully capture the diversity of experiences and challenges faced by teacher educators and pre-service teachers across different institutions or regions. Future studies could address these limitations by employing a mixed-methods approach that combines self-reported data with classroom observations or performance assessments. Observational data could provide a more comprehensive understanding of how CBE is implemented in practice, offering a richer, triangulated perspective. Additionally, expanding the participant pool to include a wider range of institutions and geographical areas could provide more representative insights into the challenges and opportunities of CBE implementation. Future research could explore longitudinal studies to examine how pre-service teachers' understanding and application of CBE principles evolve over time, particularly as they transition from training to professional practice. As

future educators and change agents, their ability to implement CBE effectively will directly shape classroom practices and educational outcomes.

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