

Article

Implementing Competency-Based Education Through the Personalized Monitoring of Primary Students' Progress and Assessment

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Abstract: Competency-based education is an educational paradigm with the primary goal of combining theoretical knowledge and practical skills, giving students the opportunity to effectively apply learning outcomes in real-life situations. This approach focuses on preparing students for life's challenges by nurturing them as independent, critical, and creative thinkers who can adapt to an ever-changing environment. This article examines the process of competency-based assessment and progress monitoring in primary grades. The study conducted a qualitative content analysis of observed lessons and teacher interviews to reveal how assessment and continuous progress monitoring can contribute to comprehensive student development. Ten primary school teachers participated in the study, responding to researchers' questions about competency-based education and their practices in assessment and progress monitoring. The article presents the results of a qualitative study aimed at evaluating the process of competence-based assessment and progress monitoring in primary school classrooms. The study results revealed that, in assessing student progress, teachers find it important for students to not only demonstrate knowledge in different situations but also gain a clearer understanding of their learning goals and have opportunities for growth. Such an assessment system not only helps students develop self-reflection but also encourages them to take responsibility for their learning process, continually improve, and strive for higher competency achievement.

Keywords: competency-based education; assessment; personalized monitoring; student progress; primary school students



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1. Introduction

In a dynamic and uncertain world, the goal of education is to prepare students to become active, lifelong learners with competencies that will help them navigate and implement changes (Voinea, 2019; OECD, 2019; UNESCO, 2022). The educational policy recommended by the Council of Europe is focused on a competency-based approach to education (Council of Europe Recommendation on Key Competences for Lifelong Learning, 2018). Competency development is associated with fostering critical thinking, adaptability, and a desire for lifelong learning, with the effective and purposeful integration of technology (Lee & Tan, 2018; Levine & Patrick, 2019; Fonseca & Ng Picoto, 2020; Niu et al., 2021).

Competency-based education is a contemporary educational paradigm aimed at developing students' knowledge, skills, and attitudes through real-world situations and practical tasks grounded in science (Council of Europe Recommendation on Key Competences for

[Lifelong Learning, 2018](#)). This approach fundamentally differs from traditional educational models, which typically emphasize knowledge acquisition and the rote learning of theoretical concepts, often without understanding them or without the ability to apply them practically. Competency-based education aims to integrate theoretical knowledge and practical skills, such as creative problem-solving, communication, teamwork, and the application of technology, enabling students to not only understand theoretical concepts but also successfully apply them in everyday, real-life situations ([Holmes et al., 2021](#); [Ghezir et al., 2021](#); [Brochu & Villemure, 2022](#)). The concept of competency-based education aligns with the current ever-changing real-world context, which should address the complex needs of society, both now and in the future.

Based on the research of various scholars ([Gervais, 2016](#); [Curry & Docherty, 2017](#); [Colby, 2017](#); [Brochu & Villemure, 2022](#); [Jonnaert et al., 2020](#); [Manalo, 2020](#); [Fullan et al., 2018](#); [Cristol, 2022](#); [Marcotte & Gruppen, 2022](#); [Sturgis & Casey, 2018](#); [Niu et al., 2021](#); [Marcotte & Gruppen, 2022](#); [Ayalew et al., 2024](#)) and their insights into competency-based education, we developed a model encompassing different areas of educational content where the school's educational practice is based on competencies (see Figure 1). The created competency-based model consists of the following two parts: school policy and operational structure and assessment focused on each child. The model provides a clear foundation for personalized learning tailored to individual student needs and an integrated school community approach.

School policy and operational structure are essential to ensure that all school activities are consistently focused on competency-based education. Creating a learning environment that considers students' needs promotes their well-being and engagement. Feedback to parents fosters an active partnership, as they are kept informed about their child's progress and involvement in the learning process. The teacher community is crucial, as teachers create a supportive learning environment and maintain high-quality education. In this context, community spirit and collaboration are fundamental for ongoing professional development, with a focus on sharing best practices ([Epstein, 2018](#); [Duan et al., 2018](#); [Fullan et al., 2018](#); [Fullan & Quinn, 2020](#); [Jakavonytė-Staškuvienė & Barkauskienė, 2023](#)).

Teaching content, learning, and assessment focused on each child encompass a comprehensive approach to the learning process, taking into account each student's individual needs and interests. Model elements, such as personalized learning content and a flexible assessment system, provide teachers with the conditions needed to adapt their teaching strategies effectively. Assessment flexibility allows for not only an objective evaluation of academic progress but also the development of each child's competencies through diverse assessment methods ([Schuwirth & Van der Vleuten, 2011](#)). Learning content tailored to each child helps students engage more actively in the learning process, as they can connect educational content to their personal experiences and interests ([Curry & Docherty, 2017](#); [Colby, 2017](#)). Progress monitoring enables teachers to continuously track student development, providing ongoing feedback and the necessary support.

The model's components and the interconnections between them illustrate how both a comprehensive school policy and operational structure, along with individualized learning content and assessment, can create a coherent and inclusive competency-based educational process. This structure promotes not only academic achievements but also the long-term social, emotional, and personal growth of students, ensuring that each child is prepared for success in their future endeavors ([Voinea, 2019](#); [Cañabate et al., 2020a, 2020b](#)). Given the scope of this article, we will focus on the areas of student achievement assessment and individualized progress monitoring, which currently lack sufficient exploration, particularly in the context of competency-based education.

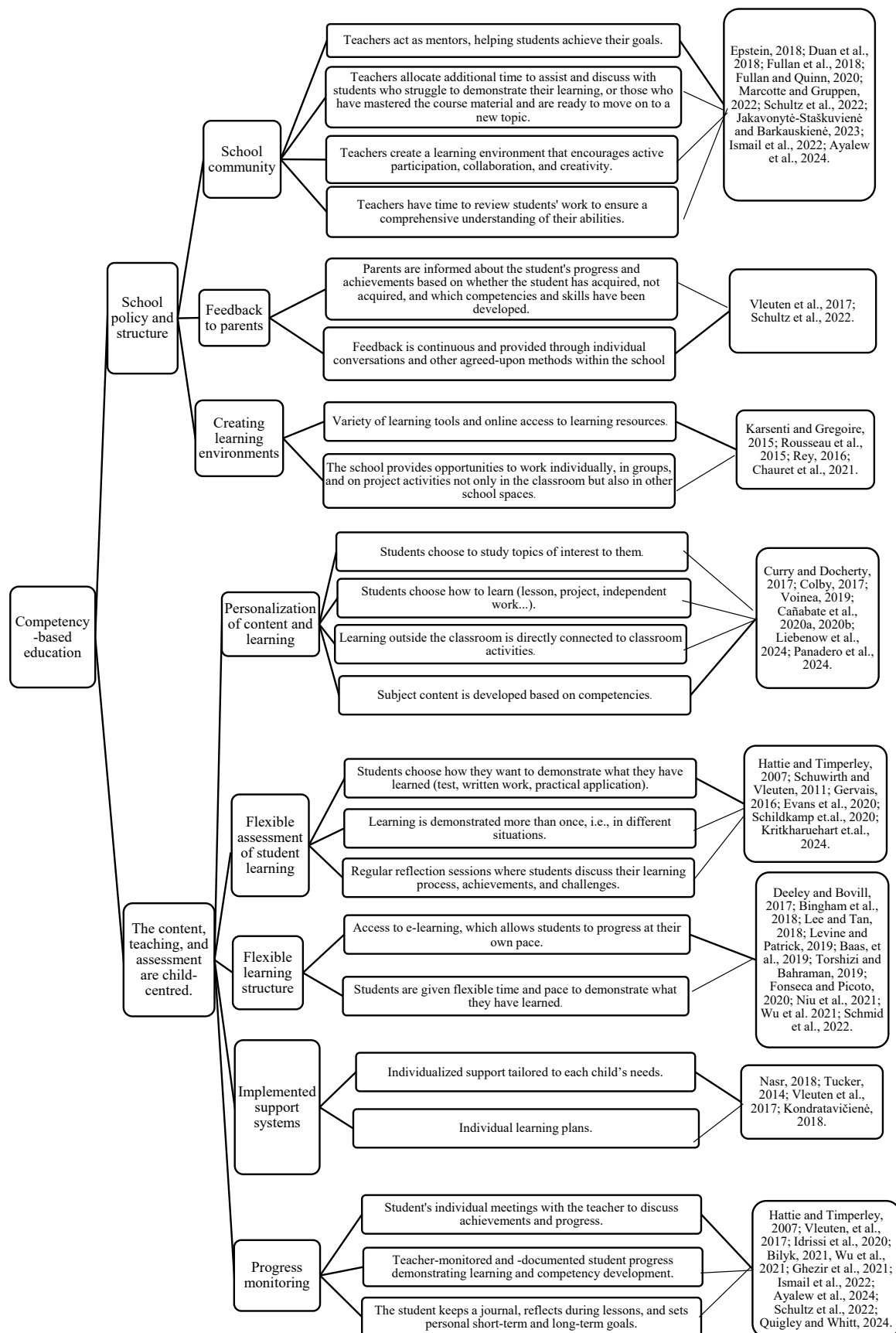


Figure 1. A competency-based education model for primary school students (developed by the authors). (Epstein, 2018; Duan et al., 2018; Fullan et al., 2018; Fullan & Quinn, 2020; Marcotte & Gruppen, 2022; Schultz et al., 2022; Jakavonytė-Staškuvienė & Barkauskienė, 2023; Ismail et al., 2022;

Ayalew et al., 2024; Van der Vleuten et al., 2017; Karsenti & Grégoire, 2015; Rousseau, 2015; Rey, 2016; Chauret et al., 2021; Liebenow et al., 2024; Panadero et al., 2024; Curry & Docherty, 2017; Colby, 2017; Voinea, 2019; Cañabate et al., 2020a, 2020b; Hattie & Timperley, 2007; Schuwirth & Van der Vleuten, 2011; Gervais, 2016; Evans et al., 2020; Schildkamp et al., 2020; Kritkharuehart et al., 2024; Deeley & Bovill, 2017; Lee & Tan, 2018; Levine & Patrick, 2019; Baas et al., 2019; Torshizi & Bahraman, 2019; Fonseca & Ng Picoto, 2020; Niu et al., 2021; Wu et al., 2021; Bingham et al., 2018; Schmid et al., 2022; Nasr et al., 2018; Tucker, 2014; Kondratavičienė, 2018; Idrissi et al., 2020; Bilyk et al., 2021; Ghezir et al., 2021; Quigley & Whitt, 2024).

The aim of the study is to analyze the experiences of competency-based assessment among fourth-grade students through an action research approach, based on the implementation of the devised competency-based education model for primary school students.

Research Objectives

To theoretically substantiate the concept of competency-based assessment and the possibilities of progress monitoring in primary grades.

To conduct a qualitative content analysis of observed lessons and teacher interview responses, discussing competency development based on the formative assessment of student achievements and progress monitoring during lessons, following a devised competency-based education model for primary school students.

2. Literature Review

2.1. Competency-Based Assessment: Flexible Evaluation of Students' Learning Process and Outcomes

Assessment is one of the core components of competency-based education and is closely tied to the mastery of competencies (Bilyk et al., 2021; Wu et al., 2021). The competency-based assessment of students' performance (both the process and outcome) focuses on specific observable results. In this process, participants—both teachers and students—agree on criteria that allow for the objective observation and evaluation of the students' achievements and progress. All elements of competencies are emphasized, including the assessment of knowledge, skills, and attitudes, defined through their expression in particular tasks or activities. Unlike traditional forms of assessment that focus only on academic results, competency-based assessment emphasizes students' practical abilities, which can only be observed during specific active tasks, often involving not only practical application but also reasoning about the actions being taken (McClarty & Gaertner, 2015; Marcotte & Gruppen, 2022).

In competency assessment, the primary focus is on real tasks, where teachers assess the learners' responses based on their ability to demonstrate various competencies and achieve the most effective results in those specific situations. Competency-based assessment is defined as the evaluation of an individual's competency against established performance standards or agreements (Evans et al., 2020). It requires evidence that the student has acquired knowledge and skills and willingly engaged in activities that demonstrate their achievements related to specific competencies (McClarty & Gaertner, 2015).

Levine and Patrick (2019) note that assessment is a positive learning experience, and assessment results contribute to enhancing learners' competencies, allowing teachers to provide timely learning evidence and refine teaching practices. The learners' progress depends on the outcomes being assessed. Competencies must be clearly defined, measurable, and related to knowledge or skills, yet their implementation can be highly sensitive to the learning context, as factors such as cultural norms, available resources, learner diversity, and institutional goals may significantly influence how these competencies are understood,

prioritized, and developed (Kubova-Semaka, 2020). In competency-based education, the primary focus is on using assessment results to support learners and ensure that they achieve the outcomes specified in the learning program (Idrissi et al., 2020; Ghezir et al., 2021; Ismail et al., 2022; Ayalew et al., 2024).

2.2. The Role of Authentic Assessment: Students' Freedom to Demonstrate What They Have Learned

Effective competency-based education aims not only to impart knowledge but also cultivate skills and values that will help students navigate various life situations. This requires appropriate and authentic assessment methods that not only measure academic progress but also evaluate students' personal development. Traditional tests or exams often do not suit this purpose, as they focus on verifying factual knowledge within a narrow scope of time and content. While they can be useful in certain circumstances, their application must be carefully planned and properly implemented to meet modern academic standards. Competency assessment is much broader and often more contextual. Such an assessment is therefore personalized, based on an agreement between the student and teacher regarding the assessment criteria. These criteria can be discussed with the students to ensure they are understandable and meaningful to them.

To promote competency development, authentic assessment methods are needed that not only evaluate theoretical knowledge but also allow students to demonstrate real practical skills. Additionally, various forms of support can be applied in the learning process to support students according to their individual needs and abilities. This support can include continuous feedback, discussions, reflection, formative assessment, and other approaches that enable students to assess and enhance their competencies, not through final product evaluation, but through a continuous process of engagement. This helps maintain high academic standards while fostering the competency acquisition that is essential for students' future activities (Van der Vleuten et al., 2017; Schultz et al., 2022).

Authentic assessment can be interpreted in various ways, but its general meaning involves assessment methods that are directly related to real-world situations and the development of skills that students can apply in practice. For primary school students, it is important that they can practically perform activities, explain their actions, and understand the subject knowledge they applied in specific situations. Research shows that authentic assessment promotes higher-level knowledge synthesis, critical thinking, and the ability to apply knowledge in practice (Schultz et al., 2022; Villarroel et al., 2018). Such assessment methods may include individual or group projects, public presentations, or even creative works. These assessment approaches not only allow for the objective evaluation of acquired knowledge and skills but also give students the opportunity to choose how and in which activity they will demonstrate their achievements, often increasing engagement and motivation to learn (Deeley & Bovill, 2017; Torshizi & Bahraman, 2019; Wu et al., 2021).

It is important to note that authentic assessment also helps develop students' self-regulation, independence, and responsibility in the learning process, as they are more often confronted with open, creative tasks that do not have a single correct answer. Studies highlight that such assessments contribute to a more inclusive and meaningful learning experience, as they provide students with opportunities to showcase their strengths and enhanced abilities in various forms, expanding the limits of traditional assessment (Schultz et al., 2022; Villarroel et al., 2018).

2.3. Assessment's Role: Ensuring Ongoing Competency Development Through Comprehensive Evaluation at Every Stage of Learning

To establish an effective continuous assessment process, it is important to reinforce assessment principles based on a competency-based curriculum that serves as a tool for

ongoing competency development. This should include assessments at all stages of the educational process—before learning, during learning, and after learning (Hattie & Timperley, 2007; Gervais, 2016; Schildkamp et al., 2020; Kritikharuehart et al., 2024). Pre-assessment allows teachers to identify students' strengths and weaknesses, create individualized learning plans, and adjust workloads according to each student's needs and abilities. Assessments conducted during the learning process are essential monitoring tools that not only evaluate students' progress but also improve the educational process by allowing the student to choose or develop deeper learning strategies according to their needs. Post-learning assessments should encompass various educational activities where assessment is integrated, such as projects and practical tasks that better align with the competency expression possibilities outlined in the curriculum. Such diverse assessment tools reflect students' real abilities and their practical application more accurately (Schuwirth & Van der Vleuten, 2011; Gervais, 2016).

The assessment tools used should create a connection between teaching processes and the recognition of outcomes (in other words, they make them visible), with the primary goal of examining learning development throughout the educational process and ensuring that learners acquire the desired competencies according to the objectives of a specific subject program. The assessment of students' knowledge, skills, and attitudes empowers them to engage confidently in the assessment process, thereby enhancing learning outcomes (Andrews et al., 2018; Hannigan et al., 2022).

2.4. Progress Monitoring, Feedback, and Reflection Connections

The monitoring of students' learning progress aims to foster self-regulation, identifying challenges and opportunities to optimize learning. Monitoring includes assessment practices centered on feedback and self-regulation to maximize learning outcomes. Assessment practices that highlight the learners' strengths and weaknesses are essential in progress monitoring (Nasr et al., 2018). Active monitoring in the classroom not only establishes clear criteria but also encourages students to take responsibility for their own learning process. This practice helps create a structured, needs-oriented learning environment where expectations are clearly understood, and each step is tracked. Regular feedback not only aids students in tracking their progress but also allows them to adjust their approaches, promoting improvement and ensuring they reach their learning goals.

In the continuous assessment process, it is essential to ensure the provision of feedback that helps students understand their achievements and fosters targeted improvement. Research shows that feedback is one of the most effective tools helping students enhance their learning outcomes (Hattie & Timperley, 2007; Quigley & Whitt, 2024). Feedback enables students to understand their performance and self-assessment, guiding them in choosing ways to improve upon specific achievements or competency areas (Quigley & Whitt, 2024). This approach to assessment encourages not only academic progress but also the long-term development of students' skills, focusing on practical competency enhancement. Students can use feedback to reevaluate and adjust their assessments of tasks or activities based on the provided feedback (Liebenow et al., 2024; Panadero et al., 2024).

The reflection process allows students to connect previous experiences and the knowledge acquired with new experiences and skills. It provides an opportunity to critically evaluate new learning situations, consider how they relate to their already acquired abilities, and explore how these skills can be applied in different contexts. This process helps students understand their learning progress, articulate specific learning outcomes, and set clear, immediate goals. Such reflection is essential, as it promotes self-reflection and continuous improvement by identifying actions that will support achieving similar goals in future tasks (Bassachs et al., 2020; Cañabate et al., 2020a, 2020b; Kulgemeyer et al., 2021).

Researchers (Baas et al., 2019; Fonseca & Ng Picoto, 2020; Bingham et al., 2018; Lee et al., 2018; Schmid et al., 2022) agree that technology-based learning platforms are particularly suitable for personalized learning assessment, as they allow the integration of assessment into daily classroom activities. These platforms enable the customization of learning according to individual learner needs. By using such technologies, teachers can more easily implement personalized teaching strategies, diversify assessment tools, and provide students with targeted feedback on their progress (Baas et al., 2019; Kondratavičienė, 2018; Fonseca & Ng Picoto, 2020; Bingham et al., 2018; Lee et al., 2018; Schmid et al., 2022). Regular assessments based on accumulated data help identify students’ strengths and weaknesses and allow timely adjustments to teaching strategies to best meet students’ needs. Teachers can analyze students’ progress based on diverse data and provide feedback not only on academic results but also on the demonstration of competencies in specific situations.

3. Materials and Methods

3.1. Research Aim

This research aimed to explore competency-based assessment implemented among fourth-grade students through action research. The study included the qualitative content analysis of observed lessons and teacher interview responses, focusing on competency development based on formative assessment and progress monitoring in classrooms.

The study was conducted in three Lithuanian schools (see Table 1). Schools were intentionally selected to analyze educational practices in diverse contexts and situations.

Table 1. Contexts of schools in the empirical research.

School	Location	Number of Students in the School	Number of Teachers Participating in the Study	School Context
School 1	In a big city	940	4	This school serves students in grades 1–8, with approximately 15% of students having special educational needs. Additionally, about 30% of students come from diverse ethnic, linguistic, and mixed-family backgrounds, where the native language is not the language of instruction. To address this, Lithuanian language instruction is conducted by dividing the class into two subgroups, allowing for smaller group sizes and individualized attention to support students in learning the Lithuanian language.
School 2	In a big city	472	4	This school serves students from pre-primary years through grade 10 and implements the national primary education program alongside a specialized engineering-oriented curriculum. This program integrates engineering education, STEAM, and the targeted application of information technology, with a portion of the educational process organized around integrated content that combines subjects from multiple disciplines. A strong emphasis is placed on competency-based education. About 10% of the students are from non-native language backgrounds or mixed-language families, where the native language is not the language of instruction. Some mathematics and science classes are taught in English.

Table 1. *Cont.*

School	Location	Number of Students in the School	Number of Teachers Participating in the Study	School Context
School 3	In a small town	191	2	The school serves students from pre-primary years through grade 12, with small class sizes of fewer than 15 students. Located in a small town where the majority of residents are non-native speakers, most students attend the Lithuanian-language school, though Lithuanian is not the native language for the majority of them.

3.2. Teacher and Student Context

A convenient sample was used, with 10 teachers participating (see Table 2). The study took place from May to September 2024. Third-grade teachers were selected intentionally, as competency-based education was implemented in the third grade starting in 2024.

Table 2. Information about the teachers who participated in the study.

Teachers	Qualification	Total Work Experience in Schools	Work Experience at the Researched School
T1	Qualification of the primary school teacher	21 years	3 years
T2	Qualification of the primary school teacher	2 years	2 years
T3	Qualification of the primary school teacher	8 years	1 year
T4	Qualification of the primary school teacher	12 years	3 years
T5	Qualification of the primary school teacher	27 years	17 years
T6	Qualification of the primary school teacher	36 years	21 years
T7	Qualification of the primary school teacher	32 years	26 years
T8	Qualification of the primary school teacher	22 years	17 years
T9	Qualification of the primary school teacher	28 years	20 years
T10	Qualification of the primary school teacher	35 years	31 years

The study involved students from the third grade (see Table 3), taught by teachers who also participated in the research. Students' activities during lessons were observed, and researchers took notes on key aspects related to competency-based education, student assessment, and participation in the lesson.

Table 3. Information about the students who participated in the study.

School	Number of Participating Students	Students Context
School 1	63	Seven students have special educational needs. Twenty-six students come from families whose native language is not Lithuanian.
School 2	70	Two children have special educational needs. Three children are foreigners who have moved to Lithuania from abroad. Two children are Lithuanian but have lived and studied in foreign countries and have returned to Lithuania for this academic year.
School 3	22	Four children have special educational needs.

3.3. Research Method

The chosen research method, action research, was selected because it is considered a democratic, just, and emancipatory qualitative research methodology that promotes an understanding and exploration of real-life contexts (Creswell & Creswell, 2023; Koch & Kralik, 2006). In applying action research, individual emotions, perspectives, and work models are revealed through observation and analysis rather than through control or manipulation. Participants actively engage in making informed decisions throughout the educational process. Additionally, action research enables the identification of emerging issues and their solutions (Soucy et al., 2020; Soucy, 2019).

3.4. Data Collection

The qualitative research was conducted in two stages as follows:

Stage I: In this stage, researchers participated in the lessons and observed teacher–student activities. They documented key contexts related to the study, including student discussions, activities, and teachers’ lesson organization methods. Data were collected through action research, analyzing observed lessons (see Table 4) and systematizing research data into the thematic groups that emerged from the findings.

Table 4. Context of observed lessons.

School	Lesson Code	Teacher Code	Lessons—the Subject	Lesson Content	Developed Competencies	Number of Participating Students
School 1	P1	T7	Integrated Lithuanian language and natural sciences lesson	Exploring schoolyard plants, writing a letter or a plant description.	Communication, digital, creativity, cognition	12
School 1	P2	T6	Lithuanian language lesson	Telling a Lithuanian fairy tale using a Bee-Bot robot.	Communication, digital, cognition	14
School 1	P3	T5	Integrated social education and information technology lesson	Exploring the concepts of income, supply, market, and budget using the Minecraft Education environment.	Digital, communication, creativity, social-emotional, cognition	24
School 1	P4	T8	Lithuanian language lesson	Discussion of an excerpt from the book <i>Pingvinas Lituanicus, or the Story of a Lithuanian Penguin</i> by P. Kulikov and V. Ežiukas, with reading comprehension tasks.	Digital, communication, social-emotional, cognition	13
School 2	P5	T1	Mathematics lesson	Students learn to transfer collected statistical data into a chart.	Digital, communication, social-emotional, cognition	18

Table 4. *Cont.*

School	Lesson Code	Teacher Code	Lessons—the Subject	Lesson Content	Developed Competencies	Number of Participating Students
School 2	P6	T2	Integrated natural sciences and English lesson	Students learn about the circulatory system, study related English vocabulary, and conduct an experiment.	Digital, communication, social-emotional, cognition	18
School 2	P7	T3	Integrated Lithuanian language and natural sciences lesson.	Students explore how different animals adapt to their environment and write a description of an animal.	Digital, communication, social-emotional, cognition	15
School 2	P8	T4	Mathematics lesson	Solving various word problems using IT technologies.	Digital, communication, social-emotional, cognition	19
School 3	P9	T9	Mathematics lesson	Making diagrams	Communication, cognition	10
School 3	P10	T10	Lithuanian language lesson	Establishing spelling rules.	Communication, cognition, digital	12

The research context involved teachers who taught third-grade students in May 2024 and who were to teach fourth-grade students from September 2024. Observations of their lessons were made from May to June 2024. Information about the lessons is given in Table 4.

In Table 4, the researchers identify the column “Developed Competencies.” It was created based on the principles of competency-based education and the observation criteria. This included students’ ability to apply the acquired knowledge in practice, participate in collaborative activities, solve problems, and create new solutions. The competency assessment was conducted through both lesson observations and the analysis of the data and feedback provided by the teachers. Thus, the developed competencies reflected the areas of progress identified during the observations and data analysis.

Stage II: To further enhance the findings, semi-structured interviews (Yin, 2018; Baškarada, 2014) were conducted with teachers from September to October 2024. The interviews involved 10 primary class teachers teaching in the fourth grade across three Lithuanian schools. These are the same teachers whose activities were observed in spring 2024, when they taught third grade classes. To gain insights into the teachers’ understanding of competency-based education; the ways they monitor student progress, assess students, and use various tools and strategies for assessing developed and improved competencies; and the support systems implemented in schools for competency development, teachers were asked to respond to seven questions (see Table 5). Researchers conducted individual interviews with each teacher, recording the interviews, which were later transcribed and systematically analyzed.

Table 5. Interview questions.

No.	Question	Rationale (Which Scientific Sources Were Referenced, What Is Intended to Be Discovered with This Question)
1.	How do you understand competency-based education?	The aim is to understand teachers' perceptions and attitudes toward competency-based education. This helps assess how teachers comprehend the essence of competency development and the methods they use in practice (Champy-Remoussenard & Starck, 2018 ; Jonnaert et al., 2020 ; Cristol, 2022 ; Kompetenciju raidos aprašas, 2021).
2.	How flexible is your/the school's educational structure?	The aim is to understand how much the school allows teachers to adapt the curriculum and teaching methods to meet students' needs and to what extent teachers can employ innovative, personalized teaching approaches (Karsenti & Grégoire, 2015 ; Rousseau, 2015 ; Rey, 2016 ; Chauret et al., 2021 ; Liebenow et al., 2024 ; Panadero et al., 2024).
3.	What student support systems are implemented in the school to promote competency development?	The aim is to assess which measures are implemented in the school to develop competencies, how effective they are, and whether they ensure comprehensive student progress and meet individual needs. (Tucker, 2014 ; Van der Vleuten et al., 2017 ; Kondratavičienė, 2018)
4.	How is student progress monitored?	The aim is to understand which assessment methods and tools teachers use, how they evaluate individual progress, and whether observational techniques effectively support the development of students' competencies (Carrette & Rey, 2010 ; Depover & Jonnaert, 2014 ; Lasnier, 2014 ; Ryan & Cox, 2017 ; Jonnaert et al., 2020 ; Manalo, 2020 ; Brochu & Villemure, 2022 ; Liebenow et al., 2024 ; Panadero et al., 2024).
5.	How often are students assessed when they propose it themselves, feeling ready to demonstrate their knowledge?	The aim is to determine how much the school supports students' autonomy and responsibility in their own learning process. This helps understand whether students are given the opportunity to choose when they feel ready to demonstrate their knowledge and skills, fostering their motivation and self-confidence (Marcotte & Gruppen, 2022 ; Schultz et al., 2022 ; Ismail et al., 2022 ; Ayalew et al., 2024).
5.	When assessing a student, is it sufficient for you to see them demonstrate learning just once, or do they need to show their abilities in a particular area multiple times, i.e., in different situations? Why? Please provide examples.	The aim is to determine whether teachers rely on a single demonstration of a student's abilities to be assessed or whether they evaluate skills across various situations. This helps understand whether teachers value deep and long-term learning, where skills are sustainable and adaptable in diverse contexts, rather than just momentary learning (Andrews et al., 2018 ; Hannigan et al., 2022 ; Quigley & Whitt, 2024).
6.	What tools, methods, and strategies do you use to assess the competencies that students demonstrate, develop, or improve?	The aim is to identify the tools, methods, and strategies teachers use to assess students' competency development and progress. This helps understand whether diverse assessment methods are used and whether they effectively reflect students' competency growth (Nückles et al., 2004, 2020 ; Bubnys, 2019 ; Brochu & Villemure, 2022 ; Baßeng & Budke, 2024).

This integrative approach—observing lessons and conducting teacher interviews—contributed to a more accurate and comprehensive interpretation and understanding of the research results.

The interview results were analyzed and organized through qualitative thematic content analysis to identify key themes reflected in the teachers' responses. During the analysis, recurring motives, perspectives, and experiences related to the competency development, assessment, and flexibility of the educational structure were highlighted. This analysis serves as a resource for other researchers and educators by illustrating the real-world applications, challenges, and successes of competency-based assessment. It offers a nuanced

perspective on how theoretical models translate into practical teaching and assessment strategies, providing a foundation for adapting these practices to diverse educational contexts (King & Horrocks, 2010; Patton, 2014; Creswell & Poth, 2018; Creswell & Creswell, 2023). Furthermore, it identifies key factors that support or hinder the successful implementation of competency-based assessment, which can guide future research and inform professional development initiatives for educators.

Additionally, the analysis sheds light on the contextual and cultural factors unique to the schools involved in the study, demonstrating how these influence the adaptation and application of competency-based approaches. By exploring variations in teachers' practices and perceptions, it uncovers valuable lessons about the flexibility and scalability of such models. This ensures that the findings not only contribute to the academic discourse but also offer actionable insights for policymakers and school administrators seeking to improve or implement competency-based education systems in their institutions.

3.5. Research Ethics

The study was conducted following the ethical principles of research outlined by Vytautas Magnus University, as approved by the Ethics Committee of the Institute of Educational Research (Resolution No. 2024-17, dated 17 September 2024). Confidentiality requirements were adhered to throughout the study. Students and teachers were informed about the study's purpose and procedures and their right to withdraw from participation without any consequences. The data are presented with participant responses translated into English.

4. Results

In the empirical data analysis section, due to the limited scope of the article, we will only present the analysis of teacher interviews relating to the teachers' understanding of competency-based education, progress monitoring, and assessment strategies. This analysis will help reveal how teachers interpret the principles of competency-based education and the methods they use to implement them, the tools and methodologies they apply to monitor student progress, and the assessment strategies they choose to promote competency development. Following this, we seek to understand how these educational elements are implemented in school practice and their impact on students' learning processes and achievements.

Teachers' understanding of competency-based education varies (Table 6). Some teachers ($N = 4$) emphasize the importance of providing not only theoretical knowledge but also encouraging students to think about how to apply this knowledge in life. The learning process should include real-world contexts where students can practically apply what they have learned. Therefore, experiential learning is considered one of the core principles of competency-based education (McClarty & Gaertner, 2015; Marcotte & Gruppen, 2022). Teacher T7 notes the greater freedom in lessons, which allows students to demonstrate their abilities and apply their existing knowledge.

It is important to note that one teacher ($N = 1$) highlights the connection between subject knowledge and general competencies, enabling students to not only acquire knowledge but also learn to apply it in a broader context. Additionally, three teachers ($N = 3$) underline that learning activities should be purposeful and aimed at developing specific competencies to help students better understand their practical significance.

Table 6. Teachers' understanding of competency-based education.

The Concept of Competency-Based Education	Examples of Teacher Comments (Unedited Language)
Practical application of knowledge (N = 4)	"Not only providing theoretical knowledge, but also encouraging students to think about how to apply that knowledge in life; whenever possible, applying knowledge practically with the students." (T2) "Learning through experience." (T9) "More freedom in lessons, and children must demonstrate their abilities, perform tasks, and apply knowledge." (T7) "It is not enough for students to simply complete assigned tasks; they must apply the acquired knowledge in practice." (T8)
Development of future skills (N = 2)	"Learning that develops students' abilities which will be needed in the future." (T5) "Education through which students acquire qualities needed for modern life." (T4)
The basis of subject integration (N = 1)	"Competency-based education is the foundation for integrating different subjects." (T3)
Competency assessment in lessons based on activities (N = 3)	"We currently have to assess competencies. You used to focus on knowledge, and now you focus on competencies." (T6) "Linking subject knowledge with general competencies." (T10) "It's when a child develops certain competencies through specific activities. Every activity should have a benefit." (T1)

Two teachers indicated that learning should focus on developing skills that will be essential for students in the future. The educational process must anticipate and address future needs, helping students acquire skills that will be crucial for their professional or personal success (Bakker et al., 2022; Diesel & Scheepers, 2019; Fullan et al., 2018; Tepper et al., 2018).

Competency-based education also envisions integrated learning, grounded in defined competencies that students develop through their active participation in the learning process (Cristol, 2022; Marcotte & Gruppen, 2022). One teacher (N = 1) in the study recognized the importance of combining various subjects, as this approach fosters interdisciplinary learning, allowing students to see connections between different subjects and apply knowledge across contexts (S. M. Drake & Savage, 2016; S. Drake & Reid, 2018; S. M. Drake & Reid, 2020; Bassachs et al., 2020; Tandezogolskiené-Bielaglové et al., 2023). Notably, Teacher T6 addressed the assessment aspects, emphasizing that the current evaluation should not only focus on knowledge but also competencies; assessment should cover students' abilities to apply knowledge practically, their critical thinking and problem-solving skills, and other competencies (Ismail et al., 2022; Ayalew et al., 2024).

From the data in Table 7, it is evident that many teachers flexibly organize meetings with students without setting a specific interval (N = 6), allowing students to receive feedback when they need it. Other teachers follow a regular schedule (N = 4), meeting with students once a month or once a semester. Regular meetings can ensure consistent progress monitoring and provide an opportunity to identify and address learning difficulties promptly. Meetings between longer intervals can be beneficial for long-term progress analysis and strategy planning. Summarizing these results, it can be deduced that teachers adapt to students' needs and provide the necessary support, but structure and stability in tracking student progress are also essential.

Table 7. Teacher monitoring of the student progress.

Progress Monitoring	Subcategory	Examples of Teachers' Comments (Unedited Language)
Individual meetings: student–teacher	There is no set frequency for meetings (N = 6)	“With some students, monitoring is more frequent, with others, less so. Usually, we discuss progress after assignments that are evaluated. There isn’t a set interval.” (T4) “There are no scheduled meetings. Students know that if they want to know how they’re doing, they can ask anytime. When I feel the need to discuss results with a student, I invite them to stay after class or meet during a break.” (T8)
	Once a month (N = 2)	“With each child, at least once a month, though sometimes more often. Once a month, we also do self-assessment during class meetings.” (T6)
	Once per semester (N = 2)	“Feedback is given to the student immediately during the lesson, but discussions on long-term progress happen once every semester.” (T10)
Documentation of student progress	Gradebook (N = 10)	“I try to update the gradebook after each task (whether oral or written), noting what went well and what still needs attention.” (T2)
	Student portfolio (N = 10)	“Each student has their own folder where we file their summary work and additional tasks we complete. We also include creative projects.” (T5) “Students place their tests and self-assessment tasks in their folders. At the end of the semester, they select their best, most successful work and mark those that need to be redone.” (T9)
	Teacher-created tool for recording important information (N = 6)	“I make notes throughout the month in my notebook about each student’s activities: how much they read, how much extra work they complete, and then I inform the parents.” (T6) “I keep a work notebook by hand. During the lesson, I observe and make notes on how the student is doing.” (T8) “I have my own notebook where I record how many mistakes a student made in dictation, what types of mistakes. I write down test errors, levels, and this helps me track the student’s progress.” (T5) “I have an Excel sheet where I note what the student has done, what they haven’t, where they struggle, and areas where they need more work.” (T1)
		“Students record their achievements in a journal. They note how they did, the percentage of tasks completed correctly, and self-assess.” (T4)
		“The school has created a personal progress monitoring chart for students. However, it mainly focuses on assessing emotions, moods at school, and how they felt.” (T5)
	Student personal progress tracking sheet (N = 4)	

Monitoring Student Progress

Various tools are used for monitoring student progress as follows: the grade book (N = 10); the student portfolio (N = 10); the student journal (N = 4); the student personal progress tracking sheet (N = 4); and the teacher’s own notebook/table (N = 6), in which they record student progress in a format that suits them. This helps the teacher structure information and track the long-term student progress, allowing teachers to better understand students’ strengths and weaknesses and plan individualized support (Cañabate et al., 2020a, 2020b; Kulgemeyer et al., 2021). It is important to note that students are involved in monitoring their personal progress. In their individual progress monitoring portfolio, students

collect various assignments and analyze them, assess their emotional state at school and their attitude towards the personal progress tracking sheet. Moreover, in their journal, they record their goals, tasks, and progress, promoting independence and responsibility for their learning.

In the observed lessons, the use of progress monitoring tools was not evident. This may indicate challenges related to the integration of competency-based education practices, which rely on continuous student progress monitoring. A more in-depth analysis is needed in the future to understand the underlying causes and improve these practices to ensure effective student progress and competency development.

From Table 8, it is evident that teachers provide feedback and assess students verbally through comments and praise during lessons. This was also observed in all the lessons monitored. Teachers praised students in lessons with phrases like the following: “*great job, you answered correctly*” (P1), “*you did very well with this task*” (P3), “*I’m glad you solved it without mistakes*” (P5), “*you quickly and correctly came up with a solution*” (P8), and similar expressions. In P2’s lesson, each student was individually praised for retelling a story. Such praise helps students feel valued and supported.

Table 8. Student assessment strategies used by students in educational practice.

Assessment Methods and Strategies	Examples of Teachers’ Comments (Unedited Language).
Direct, timely feedback provision in the lesson ($N = 8$)	“They demonstrate their knowledge during lessons when they engage in discussions with each other about the learning material. I then assess them verbally—through comments and praise.” (T2) “In lessons, assessment is done verbally, as well as through tests and project work.” (T4)
Assessment based on students’ initiative ($N = 5$)	“Sometimes students prepare presentations and want to be assessed.” (T4) “It doesn’t happen as often as I would like, that students volunteer themselves. [...] In the class, there are those who inspire others. I immediately assess such work with praise and encouragement. If they weren’t acknowledged, others wouldn’t be motivated to complete tasks as well.” (T9) “If a child shows initiative, I always assess it just because they showed initiative; we celebrate together, which really motivates the students.” (T3) “They volunteer themselves, mostly in the fourth grade when they do projects.” (T1) “When I see a student struggling with a particular topic, I assign additional tasks and wait for the student to be ready and volunteer to demonstrate their knowledge.” (T6)
In the assessment, the student must demonstrate skills and competencies in different situations (i.e., more than once) ($N = 8$)	“Assessment occurs more than once, for example: a project is evaluated in stages—the student is assessed for a certain stage and for additional activities, creating something.” (T8) “I assess overall knowledge comprehension, not just a one-time demonstration.” (T1) “It is important that the child is able to apply knowledge in various tasks. It’s essential to take a holistic approach to evaluating the child.” (T3) “Usually, this happens during a project—children prepare and then present.” (T7) “Sometimes multiple methods are needed to assess the knowledge and skills. A simple example: a student may not be able to perform a mathematical operation verbally, but can calculate perfectly well when writing it down. Sometimes students don’t answer questions in written work, but demonstrate their acquired knowledge perfectly well during lessons.” (T9)

Cont.

Table 8. Student assessment strategies used by students in educational practice.

Assessment Methods and Strategies	Examples of Teachers’ Comments (Unedited Language).
Competency assessment methods/strategies (N = 5)	“I don’t necessarily need to assess competencies right away. I organize and assess them later.” (T5)
	“For assessing competencies, I had to come up with something new. In my notebook, I wrote down how students did in being leaders or other competencies, and after a few group activities, I can see their improvement.” (T7)
	“If I want to assess communication and creativity competencies, it requires long-term observation.” (T8)
	“Independent work and their presentations really help me see improved competencies. I can see the child’s motivation and progress in cognition and communication.” (T2)
	“Projects integrate many competencies, and it’s very clear who still lacks certain competencies.” (T6)

It is noteworthy that, even in early grades, students’ self-initiative in assessment (N = 5) is observed and is highly valued by teachers. Teachers’ encouragement and praise for initiative play an important role in motivating other students (T3).

When assessing students, it is essential for teachers that students demonstrate knowledge in various situations (N = 8). The table shows an example provided by teacher T2, reflecting how students’ knowledge and skills can be assessed in different contexts. It is worth mentioning that teachers understand that they are evaluating “*overall knowledge comprehension rather than a one-time demonstration*” (T1).

Competency assessment presents more challenges. Teachers recognize that assessing competencies requires extended observation and systematization, so they observe students and take notes about them in their notebooks, making conclusions and summaries. Project work and group work support competency assessment, as they allow the observation of students’ communication, social, and creativity competencies. We can assume that competency assessment takes place over a longer period, primarily based on the assessment tools chosen or created by the teachers themselves. For a deeper and more objective evaluation of students’ competencies, it would be beneficial to develop and test tools suitable for assessing competencies in educational practice, although this is challenging due to authentic learning environments and the diverse abilities and needs of students.

5. Discussion

It is expected that students acquire skills that are important not only for their current needs but also for their future career and personal life. This approach aligns with the principles of competency-based education, promoting the development of practical skills and critical thinking to prepare students for life’s challenges (Holmes et al., 2021; Ghezir et al., 2021; Brochu & Villemure, 2022). One way to achieve this is by giving students more autonomy in their learning process, allowing them to choose topics of interest. The teacher interview responses indicate a desire to give students greater freedom in lessons, enabling them to demonstrate their abilities and apply their existing knowledge. This strengthens their engagement and motivation, as students feel responsible for their own learning (Deeley & Bovill, 2017; Torshizi & Bahraman, 2019; Wu et al., 2021). Additionally, students have opportunities to initiate the evaluation of both the process and the outcome of educational activities.

Competency development helps students apply theoretical knowledge in real-life situations, though teachers’ understanding of competency-based education is not yet

uniform. The evaluation of the learning process should be seen as “assessment for learning,” emphasizing the importance of assessment for learning outcomes (Ismail et al., 2022; Hannigan et al., 2022; Kritkharuehart et al., 2024). Such assessment fosters students’ learning-to-learn skills by providing teachers with the information necessary to plan learning opportunities that meet diverse student needs and improve their achievements (OECD, 2019; Bakker et al., 2022). The observed lessons and teacher interview responses show that, when assessing students, it is important for teachers that children demonstrate knowledge and skills in various situations and multiple times to ensure that the student has improved their competence.

In a competency-based education system, assessment focuses not only on consolidating academic knowledge but also on students’ holistic growth, helping them develop skills that contribute to lifelong learning (Idrissi et al., 2020; Ayalew et al., 2024). The goal of assessment is for students to clearly understand their learning objectives, know what it means to achieve mastery, and be prepared to demonstrate their acquired knowledge and skills (Van der Vleuten et al., 2017; Schultz et al., 2022). This practice, which reveals each student’s strengths and weaknesses, is a key part of continuous personal progress monitoring. It enables the ongoing assessment of student progress, ensuring that they meet the set goals and helping them close knowledge gaps between their current understanding and the desired outcome (Baas et al., 2019; Cañabate et al., 2020a, 2020b; Kulgemeyer et al., 2021). This approach encourages students’ self-reflection and supports their continuous improvement, allowing them to perform tasks according to agreements and show progressively stronger competency.

While the research findings support the effectiveness of competency-based assessment, it is important to acknowledge that its successful implementation requires the continuous professional development of teachers, as well as institutional support in refining assessment practices. Further research exploring the long-term impact on student outcomes would provide deeper insights into the adaptability and sustainability of this approach in diverse educational settings.

6. Conclusions

The literature emphasizes that educational processes and assessment should be directed toward real-life situations rather than merely evaluating theoretical knowledge (Villarroel et al., 2018; Schultz et al., 2022). Competency-based education (CBE) requires a shift in assessment practices from result-based evaluation to an approach that shapes students’ skills and readiness for independent learning. Research findings highlight that incorporating practical, real-world dimensions into learning assessment not only improves student outcomes but also develops their personal and professional competencies (Ghezir et al., 2021; Ismail et al., 2022; Ayalew et al., 2024).

Furthermore, emerging perspectives in educational research suggest a paradigm shift in assessment—not just analyzing results, but fostering comprehensive student engagement in the learning process (Hattie & Timperley, 2007; Gervais, 2016; Schildkamp et al., 2020; Kritkharuehart et al., 2024). The increased focus on students’ self-reflection indicates that learning is evolving into an interactive and personalized process, where students actively participate in shaping their education. This shift reorients education toward long-term goals, such as problem solving, independent learning, and adaptability to the changing demands of society.

Additionally, recent studies highlight the growing importance of personalized teaching and assessment processes that not only measure knowledge but also enhance students’ motivation and accountability for their learning. Effective competency-based education relies on strong student engagement and the teachers’ ability to recognize individual

learning needs, ensuring high-quality education that aligns with 21st-century challenges (OECD, 2019; Bakker et al., 2022).

Findings indicate that teachers emphasize not only theoretical knowledge but also its practical application, experiential learning, student autonomy, and subject integration. However, varying teacher perceptions highlight the need for further professional development to ensure a more unified approach.

Student progress is mainly monitored through informal teacher–student meetings, with some structured assessments. Tools such as gradebooks, portfolios, and progress tracking sheets aid documentation, though their consistent use remains a challenge. Observations suggest a need for better integration of progress monitoring into classroom activities.

Competency-based education assessment prioritizes skill demonstration across contexts rather than mere knowledge retention. Teachers provide timely feedback and value student-initiated self-assessment. However, competency assessment requires extended observation, and the absence of standardized tools poses challenges in ensuring consistency and objectivity.

7. Limitations and Directions for Future Research

This study has the following limitations:

- (a) The identified and analyzed aspects of competency-based education assessment and progress monitoring in this study provide valuable insights for other researchers and educators seeking to organize and implement competency-based education assessment. However, there are limitations to consider.
- (b) While the qualitative nature of this research study limits the generalization of the findings to a broader population, conducting a separate quantitative study is necessary to enhance these insights. Such a study could provide statistically significant data, increasing the reliability of the findings and offering a foundation for more generalized conclusions about effective competency-based education assessments and monitoring practices.

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