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RESEARCH ARTICLE

# Pedagogical and Assessment Competence of Early Childhood Teachers: A Systematic Literature Review

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## ABSTRACT

Early childhood education plays a central role in shaping children's cognitive, social, emotional, and language development, with lasting implications for later learning. This study systematically reviewed empirical evidence on teachers' pedagogical and assessment competence in early childhood education and the influence of policy and institutional frameworks on classroom practice. Guided by the PRISMA framework, a broad search was conducted across major academic databases whereby a total of 128 studies were identified, of which 17 met the inclusion criteria. The review was theoretically anchored in the Pedagogical Content Knowledge framework, which conceptualizes effective teaching as the integration of content knowledge, pedagogy, learner understanding, and assessment. Findings indicate that strong pedagogical competence enables teachers to implement child-centered instructional practices that support holistic development, while assessment competence facilitates continuous monitoring of children's progress using developmentally appropriate methods. However, evidence reveals persistent gaps in teachers' ability to apply competence-based and authentic assessment approaches, particularly in contexts with limited professional support. Policy and institutional frameworks were found to influence practice, though implementation is often constrained by resource limitations and inadequate training. The study emphasizes the need for sustained professional development, supportive institutional conditions, and alignment between policy expectations and classroom realities to enhance early childhood education quality.

**Keywords:** Early childhood education; teacher pedagogical competence; assessment competence; pre-primary education; pedagogical content knowledge

## INTRODUCTION

Early childhood education is widely recognized as a critical stage for cognitive, social, emotional, and language development, with long-term influence on later learning and social participation. Evidence from studies on early learning indicates that the quality of teaching at this level shapes how children acquire foundational competencies and adjust to formal schooling, as demonstrated in work on preschool education and later learning outcomes by Nath (2022). Within classroom settings, teachers act as the primary agents who interpret curriculum expectations and create learning environments that support exploration and development. Research examining early childhood education systems further shows that teaching quality is closely associated with teachers' professional competences rather than curriculum design alone, as observed in analyses of early learning transitions by

Mukuru and Sikubwabo (2024).

At the empirical level, research across different contexts reveals notable differences in teachers' pedagogical and assessment competences, which influence instructional practices and child development outcomes. Studies on early childhood classrooms show that when teachers possess strong pedagogical competence, they are more likely to adopt child-centred strategies that encourage active participation and meaningful learning, as reported in qualitative work on assessment practices by Milania and Murniati (2022). In relation to assessment, formative approaches have been shown to support continuous learning and instructional adjustment when teachers are adequately prepared, as evidenced in practitioner studies of early childhood assessment reported by Brown and Rolfe (2005). However, findings from competence-based assessment research in pre-primary settings indicate that limited training and institutional support continue to restrict teachers' ability to apply developmentally appropriate assessment methods effectively, as documented in Tanzanian contexts by Ismail et al. (2024).

Within this broader setting, policy and institutional frameworks increasingly shape expectations for teaching and assessment in early childhood education. National curricula and assessment guidelines are intended to promote consistency and quality, yet evidence suggests that policy implementation often varies across institutions due to differences in resources and professional support, as shown in reviews of assessment and monitoring frameworks by Hapsari et al. (2024). Teachers' capacity to respond to policy demands is also influenced by institutional readiness and access to ongoing professional learning, particularly in relation to contemporary expectations such as technology use and learner-centred approaches, as reported in studies of teacher readiness in West Java by Rahmi et al. (2024). These conditions point to the need for closer examination of how pedagogical competence, assessment competence, and policy frameworks interact within early childhood education practice.

## LITERATURE REVIEW

### Theoretical Framework

The review was grounded in the Pedagogical Content Knowledge (PCK) framework originally developed by Lee Shulman in 1986. According to Shulman, PCK is the specialized professional knowledge that enables teachers to transform subject matter into forms that are comprehensible and meaningful for learners, integrating an understanding of both content and pedagogy. It encompasses knowledge of learners' prior understanding, instructional strategies, curriculum representations, and appropriate sequencing of content. Contemporary scholars have expanded the concept to emphasize the dynamic nature of PCK, highlighting how teachers adapt content and pedagogy to diverse learner needs and classroom contexts (Pamularsih et al., 2025; Mapulanga & Jita, 2025). PCK provides a framework for understanding effective teaching as the intersection of content mastery and pedagogical skill, positioning teachers not only as conveyors of knowledge but as designers of meaningful learning experiences.

PCK also offers a conceptual basis for understanding instructional decision making and assessment in early childhood education. According to Kutluca (2025), PCK enables teachers to interpret learners' responses, select developmentally appropriate strategies, and integrate assessment into teaching in ways that support learning progression. Mateka, Magambo, and Rembesha (2025) further explain that PCK encompasses reflective professional judgment, allowing teachers to adjust instruction in response to learners' developmental readiness, interests, and learning contexts. By foregrounding the integration of content knowledge, pedagogy, and learner understanding, PCK provides a robust theoretical lens for examining how teachers plan, enact, and evaluate learning experiences in pre primary classrooms. This theoretical orientation underpins the current study by framing teacher competence in curriculum interpretation, instructional strategies, and assessment practices.

## METHODOLOGY

This study adopted a systematic review design guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure transparency and methodological rigor throughout the review process. A literature search was conducted across multiple electronic databases, including Scopus, Web of Science, ERIC, Google Scholar, DOAJ, SINTA, and GARUDA. The search process was supported by the Dundee Search Strategy Generator to construct a precise and reproducible search string. The key terms used in the search included early childhood education, pre-primary

education, teacher competence, pedagogical competence, assessment practices, child development assessment, and preschool assessment. These keywords were combined using Boolean operators to produce the following search string: (“early childhood education” OR “pre-primary education” OR preschool) AND (“teacher competence” OR “pedagogical competence”) AND (assessment OR “assessment practices” OR “formative assessment” OR “authentic assessment” OR “child development assessment”). The search was limited to studies published between 2005 and 2025 to capture both foundational and contemporary research.

The identification stage of the PRISMA process yielded a total of 128 studies from all databases combined. After removing duplicates and clearly unrelated records, 89 articles were considered relevant based on title and abstract review. These articles were then subjected to a more focused screening process, during which 49 full-text articles were assessed for eligibility against predefined inclusion and exclusion criteria. The inclusion criteria required studies to focus on early childhood or pre-primary education, address teacher competence or assessment practices, and employ empirical or systematic review methodologies. Studies that focused exclusively on primary or secondary education, lacked an assessment component, or were opinion-based were excluded at this stage. Following full-text screening, 17 articles met all the eligibility criteria and were included in the final synthesis. The identification, selection and screening process has been illustrated in figure 1.

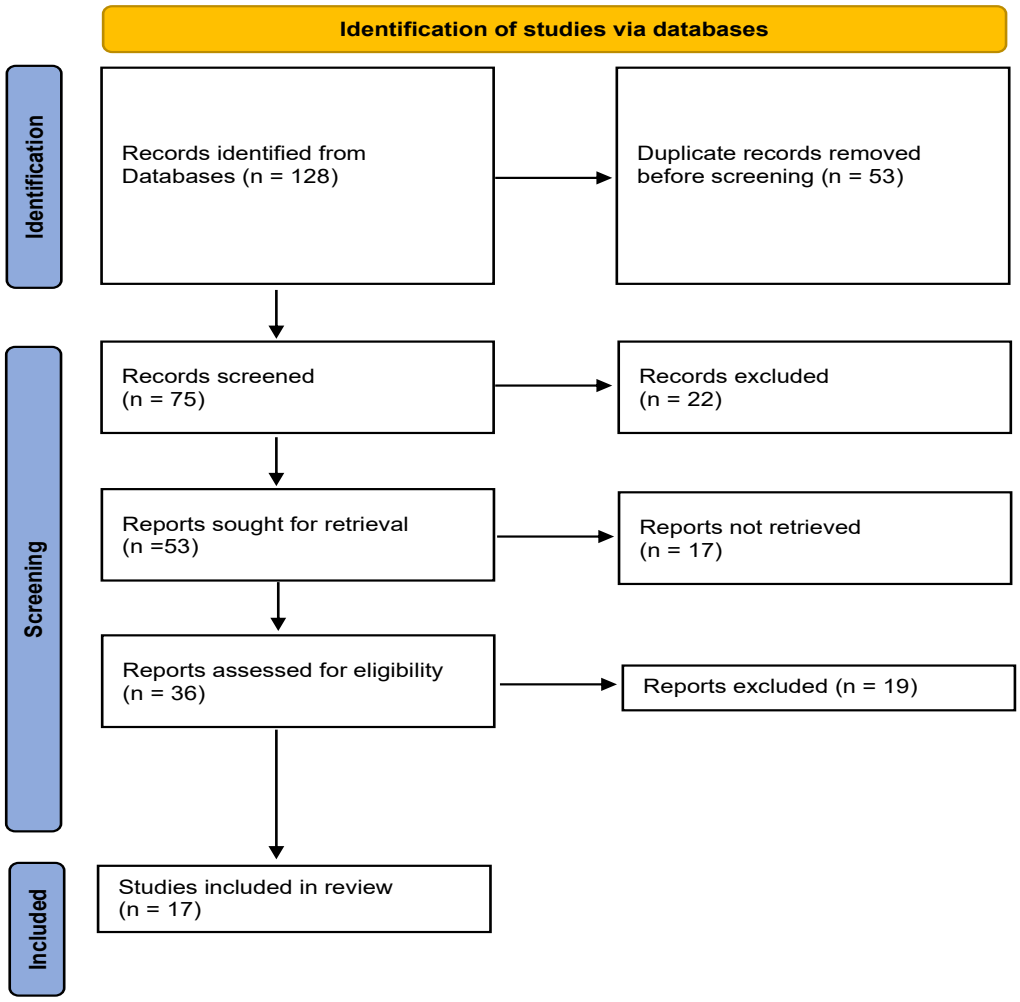



Figure 1. PRISMA chart

Quality appraisal was undertaken to address variations in methodological rigor across the included studies. The Mixed Methods Appraisal Tool was applied to evaluate quantitative, qualitative, and mixed-methods studies using criteria related to clarity of research design, appropriateness of sampling procedures, adequacy of data collection methods, and transparency of data analysis. During the synthesis process, studies were

weighted according to their methodological strength rather than being treated as equally rigorous. Only studies assessed as having moderate to high methodological quality were retained for the final synthesis.

## RESULTS AND DISCUSSION

### Pedagogical Competence of Teachers

Empirical studies indicate that pedagogical competence is fundamental to effective teaching and learning in early childhood education. Research conducted in Nigeria by Oladipo (2021) demonstrates that teachers' pedagogical competence significantly contributes to the development of numeracy and scientific thinking skills among pre-school children. Similarly, Ajat and Kurniati (2023) show that pedagogical competence positively influences early childhood discipline through constructivist and activity-based learning approaches. Supporting this evidence, Mikser et al. (2020) report that preschool principals perceive pedagogical skills as central to novice teachers' professional effectiveness, particularly in managing diverse learning needs in early childhood classrooms.

Other empirical evidence highlights gaps and variations in pedagogical competence across contexts. A qualitative study in Ethiopia by Hailu and Setlhako (2024) reveals that although teacher education programs support pedagogical skill development, limited practical exposure constrains effective classroom application. In Bangladesh, Nath (2022) finds that the quality and duration of preschool education, which largely depend on teachers' pedagogical competence, determine children's later learning competencies in primary school. Further evidence from Rwanda by Mukuru and Sikubwabo (2024) confirms that pedagogical practices acquired in early childhood education significantly enhance cognitive and social development at subsequent educational levels.

### Assessment Competence of Teachers

Empirical literature shows that assessment competence is a critical aspect of teachers' professional practice in early childhood education. Milania and Murniati (2022) demonstrate that teachers who are competent in assessment are able to design appropriate tools, apply diverse assessment techniques, and analyze results to monitor children's developmental progress. In Indonesia, Apostolache (2023) reports that teachers perceive formative assessment as essential for guiding instructional decisions and supporting continuous child development. Complementing this view, Brown and Rolfe (2005) reveal that early childhood practitioners prioritize informal assessment approaches to obtain a comprehensive picture of children's development.

However, several studies document limitations in teachers' assessment competence. In Tanzania, Ismail, Shavega, and Kigobe (2024) find that many pre-primary teachers lack adequate understanding of competence-based assessment strategies and rely heavily on traditional testing methods. Akorede (2021), studying pre-school teachers in Nigeria, identifies disparities in teachers' knowledge and utilization of authentic assessment based on school type. Similarly, Tutupary et al. (2023) establish that teachers' pedagogic competence and professional attitudes significantly influence their ability to manage authentic assessments, confirming that inadequate competence weakens effective assessment practices.

### Policy and Institutional Frameworks

Empirical evidence indicates that education policies and institutional frameworks shape teachers' pedagogical and assessment competence. Hapsari, Tittandi, and Tanto (2024) report that although assessment practices in Indonesian early childhood education align with national curriculum policies, inconsistencies in implementation persist due to variations in teacher competence and institutional capacity. Obidike (2021) further emphasizes that assessment policies are intended to support instructional improvement and accountability, yet their effectiveness depends on teachers' ability to apply recommended tools appropriately. In a Nigerian context, Ugwu et al. (2022) show that teachers express strong training needs related to curriculum implementation and assessment, reflecting gaps between policy expectations and classroom realities.

Other studies highlight institutional constraints affecting policy implementation. Masnipal and Yugo (2025) find that while Islamic early childhood institutions in Indonesia largely comply with national standards, weaknesses in pedagogical competence and limited funding hinder full policy realization. In West Java, Rahmi, Putri, and Dewi (2024) report that teachers demonstrate readiness for learner-centred approaches promoted by policy but show moderate preparedness in technology-related competencies. Additionally, Rumi et al. (2025) observe that early childhood education policies in Pakistan inadequately address emerging areas such as artificial intelligence, limiting teachers'

capacity to integrate innovative assessment and instructional practices.

Discussion

**Pedagogical Competence of Teachers**

Evidence from the reviewed studies shows that pedagogical competence of teachers plays a central role in shaping learning processes and outcomes in early childhood education. Empirical studies conducted in Nigeria and Indonesia demonstrate that teachers who possess strong pedagogical competence are more effective in organizing learning activities, engaging children actively, and supporting cognitive, social, and behavioural development (Oladipo, 2021; Ajat & Kurniati, 2023; Milania & Murniati, 2022). Similar observations are reported in European contexts, where principals identify pedagogical skills as essential for managing classroom diversity and responding to learners' developmental needs (Mikser et al., 2020). These findings suggest that pedagogical competence functions as a key mechanism through which early learning experiences contribute to children's readiness for subsequent levels of education.

At the same time, the literature points to uneven development of pedagogical competence across contexts. Studies from Ethiopia and Bangladesh show that although teacher education programs aim to develop pedagogical skills, limited practical exposure and constrained learning environments reduce teachers' capacity to translate theory into classroom practice (Hailu & Setlhako, 2024; Nath, 2022). Evidence from Rwanda further indicates that variations in institutional support and teacher preparation affect the extent to which pedagogical competence contributes to long-term learning outcomes (Mukuru & Sikubwabo, 2024). Taken together, these findings suggest that pedagogical competence is shaped not only by formal training but also by sustained practice, mentoring, and supportive school environments.

**Assessment Competence of Teachers**

The reviewed studies consistently indicate that assessment competence is a critical component of teachers' professional practice in early childhood education. Teachers who demonstrate strong assessment competence are able to use developmentally appropriate tools such as observation, portfolios, checklists, and performance-based tasks to monitor children's progress and inform instructional decisions (Milania & Murniati, 2022; Apostolache, 2023). Research conducted in early childhood settings shows that formative assessment supports continuous learning by allowing teachers to adapt teaching strategies in response to children's evolving needs (Brown & Rolfe, 2005). These findings confirm that assessment competence contributes directly to the quality of teaching and learning rather than serving merely as a reporting requirement.

However, several studies reveal persistent limitations in teachers' assessment competence, particularly in the use of competence-based and authentic assessment approaches. Evidence from Tanzania indicates that many pre-primary teachers lack adequate understanding of competence-based assessment strategies and continue to rely on traditional testing practices that are less appropriate for young learners (Ismail et al., 2024). Similar patterns are reported in Nigeria, where differences in teachers' knowledge and use of authentic assessment are linked to school type and access to professional development opportunities (Akorede, 2021). Further findings show that teachers' pedagogical competence and professional attitudes jointly influence their ability to manage authentic assessment effectively (Tutupary et al., 2023). These results suggest that strengthening assessment competence requires focused training that addresses both technical skills and teachers' orientations toward assessment.

**Policy and Institutional Frameworks**

Findings from the reviewed literature shows that policy and institutional frameworks strongly influence teachers' pedagogical and assessment practices in early childhood education. National curricula and assessment guidelines provide formal direction for classroom practice and define expectations for teacher performance. Studies from Indonesia demonstrate that assessment practices are generally aligned with national curriculum frameworks, indicating that policy provides an important reference point for teachers' work (Hapsari et al., 2024). Similarly, research from Nigeria emphasizes that assessment policies are intended to support instructional improvement, accountability, and child development when properly implemented (Obidike, 2021). These findings suggest that policy frameworks can guide practice when accompanied by clear standards and support structures.

Despite this, evidence points to a gap between policy intentions and classroom realities. Studies show that limited funding, insufficient training opportunities, and weak institutional monitoring constrain effective policy implementation (Ugwu et al., 2022; Masnipal & Yugo, 2025). Research conducted in West Java further

indicates that while teachers demonstrate readiness for learner-centred approaches promoted by policy, limited capacity in technology-related competencies affects implementation (Rahmi et al., 2024). In emerging areas such as digital and artificial intelligence integration, policy frameworks often lag behind classroom needs, restricting teachers' ability to adopt innovative practices (Rumi et al., 2025). These findings suggest that policy effectiveness depends on the availability of resources, continuous professional support, and alignment between policy design and school-level conditions.

**Implication of the Findings**

The reviewed evidence has clear implications for early childhood education in Tanzania. Pedagogical competence is essential for enabling teachers to transform curriculum content into learning experiences that support children's cognitive, social, and emotional development. Assessment competence allows teachers to monitor progress and adjust instruction using developmentally appropriate methods rather than relying only on traditional tests. In Tanzania, these findings indicate that pre-primary teachers need continuous professional development, mentoring, and institutional support to strengthen both pedagogical and assessment capacities. Alignment of national curricula and assessment policies with teacher competence is critical, as limited training, resources, and school readiness may prevent effective classroom practice. Supporting teacher competence and creating conducive school environments are therefore necessary to improve early learning outcomes and prepare children for successful transitions to primary education.

## CONCLUSION

Based on the study findings, it is concluded that effective early childhood education depends on teachers' ability to integrate pedagogical and assessment competence with available policy and institutional support. Teachers' pedagogical competence enables the transformation of curriculum content into learning experiences that foster children's cognitive, social, and emotional development, while assessment competence allows for monitoring progress and adapting instruction to meet learners' needs. Gaps in teacher preparation, professional development, and institutional support limit the practical application of curriculum and policy expectations in classrooms. Strengthening teacher capacity, providing continuous professional learning, and aligning policies with school-level conditions are necessary to enhance learning outcomes and support smooth transitions to primary education.

## REFERENCES

Ajat, A., & Kurniati, N. (2023). Study evaluation of the impact of teacher pedagogic competency on early childhood discipline in Bekasi kindergarten. *Journal of Social Research and Education Trends*, 4(2). https://doi.org/10.58526/jsret.v4i2.772

Apostolache, R. (2023). Kindergarten teachers' perception on preschoolers' formative assessment. *Studia Universitatis Babeș-Bolyai, Series Pedagogia, 68*(2), 45–60.

Brown, J., & Rolfe, S. A. (2005). Use of child development assessment in early childhood education: Early childhood practitioner and student attitudes toward formal and informal testing. *Early Child Development and Care, 175*(3), 193–202. https://doi.org/10.1080/0300443042000266240

Hailu Herut, A., & Setlhako, M. A. (2024). Shaping future preschool teachers in Ethiopia: A qualitative evaluation of pedagogical competence development mechanisms. Social Sciences & Humanities Open, 9, 101218. https://doi.org/10.1016/j.ssaho.2024.101218

Hapsari, S. M., Tittandi, N. A., & Tanto, O. D. (2024). Examining language development quality in early childhood education: A systematic review of assessment and monitoring frameworks in Indonesia. Salus Cultura, 5(1). https://doi.org/10.55480/saluscultura.v5i1.396

Ikie, R. N., Amosun, M. D., & Olalowo, I. E. (2022). Empirical realities of teacher-child interaction and cognitive development of pre-primary school children in Ibadan, Oyo State. International *Journal of Emerging Issues in Early Childhood Education,* *4*(2), 1–11. https://doi.org/10.31098/ijeiece.v4i2.1121

Ismail, M., Shavega, T. J., & Kigobe, J. (2024). Competence-based assessment in pre-primary school classrooms: The case of pre-primary schools in Dar es Salaam Region, Tanzania. *International Journal of Research in Social Sciences,* *6*(9). https://doi.org/10.47505/IJRSS.2024.6.9

Masnipal, & Yugo, T. (2025). Assessing the quality of Islamic early childhood education: Evidence from

Raudhatul Athfal's compliance with national standards in Bandung. *Journal of Global Education, 1*0(3), 563–581. https://doi.org/10.14421/jga.2025.103-11

Mikser, R., Õun, T., Tuul, M., Kukk, A., & Hussar, D. (2020). Novice preschool teachers' professional skills as assessed by preschool principals and the novice teachers themselves. *Early Education and Development, 31*(3), 437–454. https://doi.org/10.1080/10901027.2020.1797955

Milania, A. A., & Murniati, W. (2022). Teacher's pedagogic competence in evaluating learning. *Journal of Early Childhood Education Studies, 6*(1), 15–28.

Mukuru, B., & Sikubwabo, C. (2024). The role of early childhood education in boosting learning abilities at subsequent levels: A case of selected primary schools in Musanze District, Rwanda. African *Journal of Empirical Research, 5*(2), 725–735. https://doi.org/10.51867/ajernet.5.2.63

Nath, S. R. (2022). Capability of preschool education in enhancing primary school competencies in Bangladesh. *Journal of Research in Childhood Education, 36*(1), 14–30. https://doi.org/10.1080/02568543.2021.1963998

Obidike, I. V. (2023). Assessment tools in early childhood education: Implications for sustainable development in Nigeria. *Journal of Education and Practice, 31*(3), 44–55.

Rahmi, Y. N., Putri, S. U., & Dewi, F. (2024). Readiness of early childhood education teachers in West Java for 21st century learning: A survey study. Golden Age: Jurnal Ilmiah Tumbuh Kembang Anak Usia Dini, 9(2), 247–255. https://doi.org/10.14421/jga.2024.92-06

Rumi, A. Q., Saeed, A., Awais, H. M., & Qureshi, A. H. (2025). Enhancing social-emotional skills in early childhood education: A comparative analysis. *Pakistan Journal of Educational Studies, 12*(1), 1–18.

Tutupary, R., Sahetapy, L. M., & Rumahlewang, E. (2023). The effect of pedagogic competence and professional attitude on the ability to manage PAUD authentic assessments in Ambon City. Jurnal Obsesi: *Jurnal Pendidikan Anak Usia Dini, 7*(4), 3963–3980. https://doi.org/10.31004/obsesi.v7i4.4503

Ugwu, G. C., Ibiam, J. U., Ossai, O. V., Ngwoke, A. N., Okenyi, E. C., Oraeolos, C., & Ifelunni, C. O. (2022). Teachers training needs for the implementation of pre-primary school curriculum in Oshimili North and South of Delta State, Nigeria. *Journal of Educational Foundations, 18*(2), 101–118.