INTERNATIONAL JOURNAL OF EDUCATION, LANGUAGE AND SOCIAL SCIENCE (IJELaSS)
Vol. 3, No. 2, December 2025
P-ISSN: 2988-6279, E- ISSN: 2988-5078

Microteaching Implementation and Student Readiness for Teaching Practice: A Preliminary Study

Tengku Hafinda[1,2], Sari Diana[3], Maya Agustina[4], Masni[5]
[1] Student of Doctoral Education Department, Faculty of Teacher Training and Education, Universitas Syiah Kuala, Indonesia
[2,3,4,5] Teacher Training and Education Faculty, State Islamic College Teungku Dirundeng Meulaboh, Indonesia

Article Info

Article history:

Received 2025-09-16
Revised 2025-10-20
Accepted 2025-12-21

Keywords:

Microteaching
Teaching Practice
Student Readiness
Rubric Evaluation
Preliminary Study

ABSTRACT

Microteaching plays a crucial role in preparing pre-service teachers, but its implementation is hindered by inconsistent rubrics, the absence of standardized procedures, and concerns about student readiness. This study aimed to explore the implementation of microteaching and student readiness for teaching practice through a preliminary investigation. A descriptive method was employed, combining document analysis and a survey. Document analysis was conducted on three microteaching rubrics used by lecturers and one academic guideline, while the survey involved 20 students who had completed their teaching practice, using five Likert-scale statements. The findings revealed variations in weighting across assessment aspects such as lesson planning, teaching skills, media usage, and reflection. The review also indicated the absence of a specific standardized operational procedure for microteaching. Furthermore, 65% of students reported that microteaching did not adequately prepare them, 55% perceived inconsistency among lecturers' assessments, and 70% expressed the need for standardized rubrics and a formal microteaching unit. These preliminary results emphasize urgency of conducting a more systematic evaluation of professional practice curricula in teacher education programs.

This is an open access article under the CC BY-SA license.

Corresponding Author:

Tengku Hafinda
Teacher Training and Education Faculty, State Islamic College Teungku Dirundeng Meulaboh, Jalan Lingkar Kampus, Alue Peunyareng, Meulaboh, Aceh, Indonesia, 23615
Email: tengkuhafinda@staindirundeng.ac.id

INTRODUCTION

The quality of teachers in the twenty first century is considered a decisive factor for the success of education worldwide, not only in shaping students' academic abilities but also in fostering character development. Teachers are no longer merely transmitters of knowledge; rather, they are expected to serve as facilitators of learning who can cultivate critical thinking, creativity, collaboration, and communication, commonly referred to as the 4Cs. Teacher effectiveness has been identified as one of the key variables in improving learning outcomes, particularly in developing countries such as Indonesia. National curriculum reforms such as the Merdeka Belajar policy further emphasize the demand for teachers who are adaptive, reflective, and responsive to increasingly complex classroom dynamics. Nevertheless, the reality in the field shows that graduates of Faculty of Teacher Training and Education or teacher education institutions often remain insufficiently prepared to face the real challenges of teaching, whether in terms of pedagogy, technology integration, or social skills (Anwar et al., 2025; Haryani, 2020).

In Indonesia, teacher education institutions play a strategic role in preparing professional and high-quality teachers. However, significant challenges persist, especially in bridging theoretical knowledge taught at universities with practical classroom applications. Two crucial components that should serve as this bridge, namely microteaching and teaching practice, are often treated separately and not fully integrated. Microteaching is designed as a clinical experience in which pre service teachers practice fundamental teaching skills through lesson planning, implementation, feedback, and iterative improvement before entering real classrooms. Unfortunately, the pedagogical skills gained during microteaching are not always transferred effectively to teaching practice, leaving students inadequately prepared to integrate micro level learning experiences into macro level classroom practice (Sugihartini et al., 2025).

Previous studies have emphasized the importance of microteaching as a medium for enhancing teaching competence. Microteaching experiences have been shown to significantly improve pre service teachers' self-efficacy, particularly in communication and classroom management (Deocampo, 2024; Kwangsawad, 2022; Marlina et al., 2024). Student perceptions of their teaching readiness are also strongly shaped by their experiences in both microteaching and teaching practice (Marhaban et al., 2023; Tutyandari, 2020). Furthermore, the use of standardized rubrics and structured evaluation systems is essential to ensure objective and measurable outcomes in microteaching practice, thereby providing students with a clear picture of their teaching competence development (Padmadewi et al., 2020).

Although research on microteaching and teaching practice is abundant, most studies tend to examine the two separately without addressing their continuity. In reality, the effectiveness of teacher education should be assessed by how well the skills acquired in microteaching are transferred into actual classroom practice. Recent studies have explored the potential of integrating technology into virtual microteaching; however, they have yet to provide a comprehensive explanation of how microteaching experiences support students' readiness for teaching practice (Lee & Wu, 2024; Ogegbo et al., 2024; Zhang et al., 2024). This disconnection indicates a research

gap that must be addressed through exploratory studies linking microteaching practices with teaching readiness during teaching practice.

Limitations of previous research are also evident in the lack of studies that employ quantitative approaches to systematically measure student perceptions as an indicator of teaching readiness. Yet, student perspectives are vital in assessing the extent to which microteaching effectively prepares them for real classroom practice. Moreover, empirical studies in Indonesia rarely examine microteaching in terms of its implementation structure, the existence of a Standard Operating Procedure, or the consistency of lecturers' assessment rubrics. As a result, microteaching continues to be managed variably across institutions, leading to inconsistent outcomes that are difficult to evaluate objectively (Azrai et al., 2020; Fitri et al., 2025).

This study is therefore expected to contribute both theoretically and practically. Its theoretical contribution lies in providing an initial picture of the integration between microteaching and teaching practice, which has rarely been examined holistically. Its practical contribution is to present empirical evidence on the effectiveness of microteaching and students' readiness for teaching practice, which can serve as a foundation for developing a Standard Operating Procedure and standardized assessment rubrics at teacher education institutions (Padmadewi et al., 2020; Sugihartini et al., 2025). The relevance of this preliminary study is further reinforced by the emergence of microteaching models based on self-directed learning, which encourage students to independently develop their teaching skills (Aruğaslan, 2025; Fitri et al., 2025).

Accordingly, this research aims to present preliminary findings on the implementation of microteaching and pre service teachers' readiness for teaching practice. The study focuses on identifying variations in assessment rubrics, the absence of a Standard Operating Procedure specifically regulating microteaching, and student perceptions of their readiness to enter real classrooms. By employing a descriptive exploratory approach, this research seeks not only to enrich the academic literature but also to provide practical insights for curriculum designers and teacher education institutions. These preliminary results are expected to serve as a foundation for more comprehensive evaluations, such as those using the Kirkpatrick Model, to achieve a systematic assessment of professional practice curricula in Indonesia.

METHOD

Participants

The participants of this study consisted of 20 pre-service teacher education students who had completed both microteaching and teaching practice at one Faculty of Teacher Training and Education in Aceh, Indonesia. The sample was selected through purposive sampling, with the criteria that students had participated in microteaching and completed their teaching practice during the previous semester. This technique was chosen to ensure that respondents were relevant and possessed direct experience with the phenomena under investigation.

Procedures

Two main instruments were employed in this study. The first was document analysis, which utilized a checklist to examine three microteaching rubrics and one academic guideline. The checklist reviewed aspects such as the clarity of assessment criteria, the weighting of different components including lesson planning, teaching skills, the use of media, and reflection, as well as the presence or absence of a Standard Operating Procedure for microteaching. Document analysis was considered essential for identifying structural variations and institutional practices. The second instrument was a survey administered to 20 students. The questionnaire consisted of five Likert-scale items, ranging from strongly disagree to strongly agree, and two open-ended questions designed to capture students' perceptions of how effectively microteaching prepared them for teaching practice and to identify challenges they encountered. The items were developed based on relevant literature concerning the effectiveness of microteaching and indicators of teaching readiness (Arslan, 2021; Kazeem et al., 2024). Content validity was established through consultations with two experts in the field of education, who reviewed the clarity, relevance, and representativeness of each item. Reliability testing was then conducted using Cronbach's Alpha with the actual research data, and the coefficient value was found to be greater than 0.7, which indicates acceptable internal consistency in accordance with recommendations for social science research (Creswell & Creswell, 2023; Tavakol & Dennick, 2011).

FINDINGS AND DISCUSSION

Variations in Microteaching Assessment Rubrics

The document analysis of three assessment rubrics used by microteaching lecturers revealed significant variations in the weighting of evaluation components. Although all rubrics contained the core dimensions of lesson planning, teaching skills, media use, and reflection, the proportion allocated to each aspect differed among lecturers. For instance, Lecturer A assigned the highest proportion to teaching skills (40%), while Lecturer B emphasized the same component even more strongly (50%) but reduced the weight given to media use. Lecturer C, in contrast, gave greater importance to media use (30%) and a smaller proportion to reflection. These inconsistencies emphasize the absence of a uniform standard in microteaching assessment at the classroom level.

When compared with the 2024 Official Guideline for Microteaching Assessment, it becomes evident that the institution has already outlined a more systematic framework. The guideline specifies five key components, namely orientation (10%), lesson preparation (20%), teaching practice (40%), personal and social competence (20%), and peer assessment (10). However, despite the existence of this formal document, the findings suggest that its implementation in practice remains inconsistent. Lecturers continue to apply their own versions of assessment rubrics, which leads to variations in weighting and creates student perceptions of unfairness. This discrepancy between the official guideline and its practical application indicates that the presence of a formal document alone is insufficient to ensure standardized assessment across the program.

Table 1. Comparison of Assessment Rubrics Used by Lecturers and the Official Guideline

Assessment Aspect	Lecturer A (%)	Lecturer B (%)	Lecturer C (%)	Guideline (%)
Lesson Planning (RPP)	30	20	25	20
Teaching Skills	40	50	35	40
Media Use	10	15	30	–
Reflection / Evaluation	20	15	10	–
Orientation	–	–	–	10
Personal and Social Competence	–	–	–	20
Peer Assessment	–	–	–	10

This comparison demonstrates two important findings. First, lecturers' rubrics focus mainly on pedagogical skills but differ substantially in their weighting, which risks undermining fairness and comparability. Second, the institutional guideline incorporates broader dimensions such as orientation, personal and social competence, and peer assessment, which are absent from the lecturers' rubrics. This gap indicates that while the guideline is more comprehensive on paper, its actual use in classroom practice has not been fully adopted. Consequently, students may experience uncertainty about what criteria are being prioritized, reinforcing the need for a clear and consistently enforced Standard Operating Procedure for microteaching.

Absence of a Comprehensive Standard Operating Procedure for Microteaching

The document review indicates that already developed two formal documents related to microteaching: the Microteaching Assessment Guideline and the Standard Operating Procedure for the Use of the Microteaching Laboratory. The assessment guideline primarily addresses evaluation aspects, specifying the weightings of components such as orientation, preparation, practice, personal and social competence, and peer assessment. By contrast, the laboratory Standard Operating Procedure focuses on administrative and technical matters, including legal foundations, responsible parties, and the provision of facilities such as interactive whiteboards and CCTV.

Although these documents are in place, neither can yet be considered a comprehensive Standard Operating Procedure governing the full implementation of microteaching as a pedagogical process. The assessment guideline outlines evaluation but does not regulate teaching stages, observation procedures, or feedback mechanisms. Likewise, the laboratory Standard Operating Procedure regulates facility usage but omits pedagogical strategies and standardized lecturer evaluation practices. Consequently, microteaching implementation remains highly dependent on individual lecturer interpretation, leading to variation in practice and inconsistency in assessment.

Table 2. Comparison of Microteaching Documents

Document	Main Focus	Limitations
Microteaching Assessment Guideline	Defines assessment components and weightings (orientation, preparation, practice, personal/social competence, peer assessment).	Does not regulate detailed learning mechanisms, observation stages, or consistency across lecturers.
Standard Operating Procedure for the Use of the Microteaching Laboratory	Regulates administrative and technical aspects (legal basis, responsible parties, facilities such as interactive boards and CCTV).	Limited to laboratory use; does not cover teaching stages, evaluation procedures, or standardized implementation.

Survey data further reinforce this gap. As shown in Figure 1, 70% of respondents indicated the urgent need for a specific Standard Operating Procedure that not only regulates laboratory facilities but also includes teaching flows, the role of supervising lecturers, feedback strategies, and standardized evaluation criteria. This overwhelming majority demonstrates that students themselves recognize the insufficiency of existing documents and demand more structured guidance to ensure fairness and consistency across classes.

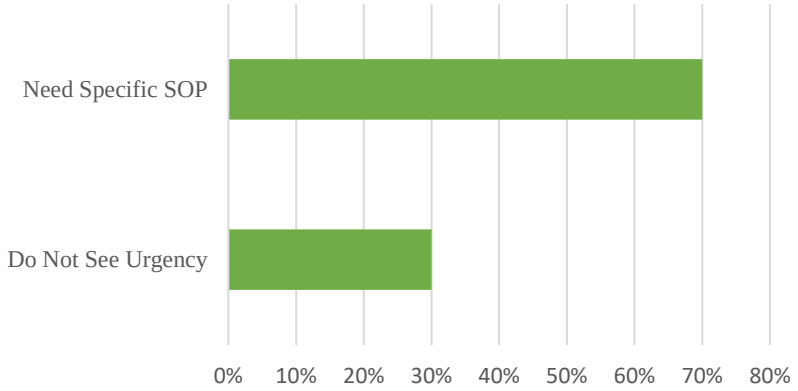

Figure 1. Student Perceptions of the Need for a Specific Standard Operating Procedure for Microteaching

In summary, while formal documents exist, their current scope remains fragmented. Students' perception emphasizes the importance of moving beyond administrative and evaluative guidelines toward a comprehensive Standard Operating Procedure that integrates pedagogical processes, standardized assessment, and structured feedback. Only through such reform can microteaching function effectively as a bridge between theoretical coursework and practical teaching readiness.

Student Perceptions of Microteaching

The survey conducted with 20 pre-service teacher education students provides important insights into their perceptions of microteaching effectiveness. As shown in Table 3, the majority of respondents indicated that microteaching had not adequately prepared them for field practice.

A total of 65% reported feeling insufficiently prepared, while only 35% believed they were adequately equipped. In addition, 55% of students observed inconsistencies among lecturers in assigning grades, which they perceived as creating confusion and a lack of fairness. Furthermore, 70% emphasized the urgent need for standardized rubrics and the establishment of a structured microteaching unit within the institution.

Table 3. Student Perceptions of Microteaching

Statement	Response Category	Percentage (%)
Microteaching prepared me adequately for teaching practice	Agree	35
	Disagree	65
Assessment across lecturers was consistent	Agree	45
	Disagree	55
Need for standardized rubrics and a structured unit	Agree	70
	Disagree	30

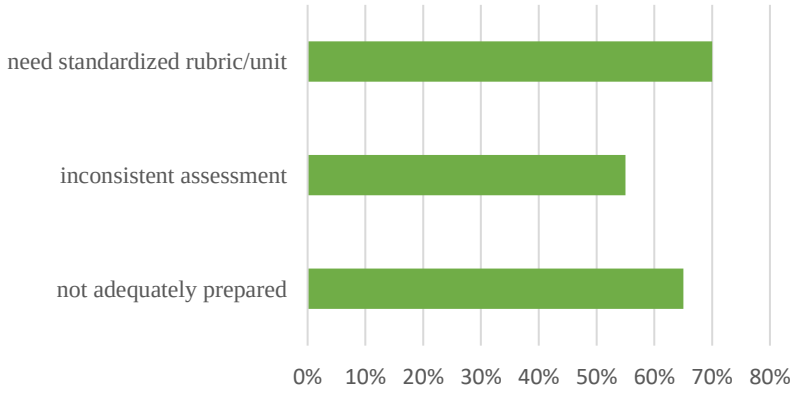

Figure 2. Student Perceptions of Microteaching

These findings demonstrate that students are not merely passive participants but active evaluators of the training process. Their perceptions emphasize that microteaching, in its current form, has not fully served its function as an effective preparatory tool for teaching practice, largely due to variations among lecturers and the absence of a truly standardized framework. The majority of respondents expressed a strong expectation for the introduction of standardized rubrics and a dedicated microteaching unit to ensure greater consistency, fairness, and alignment with professional teaching requirements.

This result is consistent with prior research emphasizing that microteaching can only achieve its intended outcomes if implemented systematically, supported by transparent evaluation systems, and accompanied by reflective feedback mechanisms. Thus, student perceptions can be

regarded as valuable empirical evidence reinforcing the urgency of developing a comprehensive Standard Operating Procedure for microteaching.

DISCUSSION

The findings of this study demonstrate three major issues in the implementation of microteaching in teacher education institutions, namely variations in assessment rubrics, the absence of comprehensive operational procedures, and students' limited perceptions of readiness for teaching practice. These issues not only reflect technical challenges but also reveal systemic weaknesses in the management of teacher education curricula. Variations in assessment rubrics emphasized the lack of consistency in evaluation standards across lecturers. The inconsistencies in weighting different components raise concerns about the validity and reliability of student evaluations, as students may be judged by unequal benchmarks. Such variation aligns with the argument that inconsistent rubrics undermine the objectivity and accountability of teacher training programs (Iliasova et al., 2025). Moreover, the differences in evaluation criteria create perceptions of unfairness that may reduce student motivation and confidence in pursuing the teaching profession, suggesting the need for a standardized rubric that integrates assessment criteria with teacher competency profiles and is empirically tested for reliability (Nguyen, 2021; Sugihartini et al., 2025).

In addition to the issue of rubrics, the document review shows that although an assessment guideline and a laboratory Standard Operating Procedure exist, neither can be regarded as a comprehensive procedure governing microteaching. The assessment guideline is mainly concerned with evaluation aspects, while the laboratory Standard Operating Procedure is confined to technical and administrative matters. Neither document regulates the full teaching process, such as the flow of activities, mechanisms of supervision, or strategies for providing feedback. This situation indicates institutional weaknesses in curriculum governance, as microteaching practices remain heavily dependent on lecturer subjectivity. Similar concerns have been noted in prior studies, which emphasize that the absence of formalized procedures results in discrepancies among students' experiences and widens the potential for unequal outcomes (Maisuria & Lally, 2024; Townend et al., 2025). Local findings also reinforce that unclear procedures can lead to student confusion about activity flow, learning objectives, and expected outcomes (Baharuddin & Burhan, 2025; Nanda & Azmy, 2020). These results suggest that developing a comprehensive operational procedure is not merely an administrative necessity but rather a strategic instrument to ensure consistency, efficiency, and fairness in the microteaching process.

The survey findings further demonstrate that the majority of students still feel inadequately prepared for teaching practice despite completing microteaching, and many express the need for a dedicated unit to manage its implementation. This indicates a substantial gap between the training provided through microteaching and the professional competencies required in real classrooms. Previous research confirms that although teacher development programs can enhance satisfaction and knowledge, their influence on actual teaching competence and readiness remains limited, especially at the behavioral and results levels (G. Padillo et al., 2021; Popova et al., 2022; Ventista & Brown, 2023). In terms of Kirkpatrick's evaluation framework, microteaching may address the

levels of reaction and learning but appears insufficient in facilitating behavioral change or translating skills into real teaching performance. This limitation emphasized the need for more comprehensive evaluation strategies using the full scope of Kirkpatrick's model in order to better assess the true effectiveness of microteaching in preparing professional teachers.

The implications of these findings are multifold. Teacher education institutions must design standardized rubrics to ensure objective and reliable evaluation across all lecturers. They should also develop comprehensive operational procedures that regulate not only administrative and technical matters but also the pedagogical aspects of teaching practice, including observation, feedback, and supervision. Furthermore, the establishment of a dedicated microteaching unit at the institutional level would be a valuable initiative to manage, monitor, and improve the program in a sustainable way. By adopting these measures, microteaching could serve more effectively as a bridge between pedagogical theory and practical teaching readiness.

Nevertheless, this study is not without limitations. The research is preliminary in scope, involving only 20 respondents, which restricts the generalizability of the findings. In addition, the analysis is limited to descriptive statistics and does not employ inferential techniques to explore relationships or test hypotheses. Future research should therefore involve larger and more diverse samples from multiple teacher education institutions, utilize inferential statistical methods such as t-tests or ANOVA, and apply Kirkpatrick's model across all four levels of evaluation. A mixed-methods approach is also recommended in order to enrich quantitative results with qualitative insights from both students and lecturers. Such efforts would allow for a more holistic understanding of the effectiveness of microteaching and its role in preparing future teachers for professional practice.

This discovery presents a contrasting viewpoint to previous research, which indicated that a significant proportion of students exhibited a strong reliance on their teacher and were not sufficiently prepared to independently acquire language skills. A plausible explanation for this inconsistency is that there was a reduced number of students involved in the present investigation. Furthermore, a significant proportion of students have not had the opportunity to familiarize themselves with educational materials in the home environment alongside their family members. This study demonstrates that the learning experience of students at home has a certain degree of influence on their ability to acquire a new language.

CONCLUSION

This study explored the implementation of microteaching and the readiness of pre-service teachers for teaching practice through document analysis and a student survey. Three key findings emerged: there were significant variations in assessment rubrics across lecturers, no comprehensive institutional procedure regulating the implementation of microteaching, and a majority of students reported that microteaching had not fully prepared them for classroom practice. These findings emphasized that while microteaching has the potential to serve as an essential component of professional teacher training, its current implementation faces structural and technical challenges that undermine its effectiveness. Inconsistent assessment weakens the validity of evaluation, the absence of standardized procedures compromises quality assurance, and

students' limited readiness indicates that the transfer of skills from simulation to real practice remains suboptimal. The practical implication of this study is the urgent need for teacher education institutions to develop standardized assessment rubrics and institutional operational procedures, as well as to establish dedicated microteaching units to ensure consistent, fair, and effective implementation. Future research should apply Kirkpatrick's four-level evaluation model comprehensively and involve larger, more diverse samples using mixed-methods approaches to enrich the findings and strengthen their generalizability.

The authors declare that there is no conflict of interest in this work.

The authors declare that there is no conflict of interest in this work. The author declares that there is no conflict of interest in the writing and preparation of this scientific work. The entire research process, data analysis, and article writing were carried out objectively and independently, without any influence from any party that could affect the results and conclusions of the research.

REFERENCES

Anwar, K., Musa, J., & Salleh, S. M. (2025). From learning to practice: The role of preparation, acceptance, skills, and innovativeness in affecting preservice teacher technology integration. *Education and Information Technologies*, *30*(7), 9041–9067. https://doi.org/10.1007/s10639-024-13181-1

Arslan, A. (2021). Pre-service Teachers' Journey of "Teaching" through Micro-Teaching: A Mixed Design Research. *Education and Science*, *46*(207), 259–283. https://doi.org/10.15390/EB.2021.9406

Aruğaslan, E. (2025). Self-, Peer, and Tutor Assessment in Online Microteaching Practice and Doctoral Students' Opinions. *The International Review of Research in Open and Distributed Learning*, *26*(1), 99–117. https://doi.org/10.19173/irrodl.v26i1.7970

Azrai, E., Setyo Rini, D., & Suryanda, A. (2020). Micro-teaching in the Digital Industrial Era 4.0: Necessary or Not? *Universal Journal of Educational Research*, *8*. https://doi.org/10.13189/ujer.2020.081804

Baharuddin & Burhan. (2025). Urban and rural teacher perspectives on Indonesian educational reform: Challenges and policy implications. *Cogent Education*, *12*(1), 2497142. https://doi.org/10.1080/2331186X.2025.2497142

Creswell, J. W., & Creswell, J. D. (2023). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (Sixth). SAGE Publications.

Deocampo, M. F. (2024). Microteaching Reflective Practices to Enhance the Teaching Efficacy of English Language Pre-Service Teachers. *NIDA Journal of Language and Communication*, *29*(46), 1–22. https://so04.tci-thaijo.org/index.php/NJLC/article/view/280612

Fitri, R., Asril, Z., Sabri, A., Remiswal, R., Firdaus, F., & Zalnur, M. (2025). Implementation of Microteaching Based on Self-Directed Learning. *International Journal of Islamic Studies Higher Education*, *4*(1), 68–78. https://doi.org/10.24036/insight.v4i1.226

G. Padillo, G., P. Manguilimotan, R., G. Capuno, R., & C. Espina, R. (2021). Professional Development Activities and Teacher Performance. *International Journal of Education and Practice*, *9*(3), 497–506. https://doi.org/10.18488/journal.61.2021.93.497.506

Haryani, E. (2020). *Are They Ready? Implementing 21st-Century Learning Skills Integration into Indonesia Science Instruction*. https://scholarworks.wmich.edu/dissertations/3680

Iliasova, L., Nekrasova, I., Mena, J., & Estrada-Molina, O. (2025). Microteaching on pre-service teachers' education: Literature review. *Frontiers in Education*, *10*. https://doi.org/10.3389/feduc.2025.1562975

Kazeem, S., Alhassan, N., & Falalu, M. K. (2024). Cultivating the Pedagogical Competence of Pre-Service Science Teachers through Microteaching. *Indonesian Journal of Teaching in Science*, *5*(1). http://dx.doi.org/10. 17509/xxxx.xxxx

Kwangsawad, T. (2022). Developing EFL Pre-service Teachers' Self-efficacy through Microteaching. *Studies in English Language Teaching*, *10*(2), p83. https://doi.org/10.22158/selt.v10n2p83

Lee, S.-M., & Wu, J. G. (2024). Preparing teachers for the future: Microteaching in the immersive VR environment. *ReCALL*, *36*(3), 251–269. https://doi.org/10.1017/S0958344024000089

Maisuria, A., & Lally, C. (2024). Education: Inequalities and attainment gaps. *UK Parliament*, *1*(1). https://doi.org/10.58248/HS85

Marhaban, S., Kasim, U., Syamaun, A., & Sulistyo, T. (2023). Student-teacher conferences and video-recorded microteaching sessions in developing pre-service teachers' teaching competences. *Studies in English Language and Education*, *10*, 337–349. https://doi.org/10.24815/siele.v10i1.26026

Marlina, R., Suwono, H., Yuenyong, C., Ibrohim, I., Pamungkas, R., & Hamdani, H. (2024). Micro Teaching as Efficient Technique to Increase Self-Efficacy of Prospective Biology Teacher: Evidence from First Year Teacher. *Jurnal Pendidikan Sains Indonesia*, *12*, 769–785. https://doi.org/10.24815/jpsi.v12i4.38720

Nanda, D., & Azmy, K. (2020). Poor Reading Comprehension Issue In EFL Classroom Among Indonesian Secondary School Students: Scrutinizing the causes, impacts and possible solutions. *Englisia: Journal of Language, Education, and Humanities*, *8*, 12. https://doi.org/10.22373/ej.v8i1.6771

Nguyen, T. L. (2021). *Investigating students' perceptions of Vietnamese tertiary English education* [The University of Newcastle Australia]. https://orcid.org/0000-0002-2247-3226

Ogegbo, A. A., Penn, M., Ramnarain, U., Pila, O., Van Der Westhuizen, C., Mdlalose, N., Moser, I., Hlosta, M., & Bergamin, P. (2024). Exploring pre-service teachers' intentions of adopting and using virtual reality classrooms in science education. *Education and Information Technologies*, *29*(15), 20299–20316. https://doi.org/10.1007/s10639-024-12664-5

Padmadewi, N., Ganesha, U., Bali, I., & Artini, L. (2020). Assessment Instruments for Improving English Teaching Skills through Microteaching in Indonesia. *Asian EFL Journal*, *21*. https://www.researchgate.net/publication/332173981

Popova, A., Evans, D. K., Breeding, M. E., & Arancibia, V. (2022). Teacher Professional Development around the World: The Gap between Evidence and Practice. *The World Bank Research Observer*, *37*(1), 107–136. https://doi.org/10.1093/wbro/lkab006

Sugihartini, N., Elmunsyah, H., Nurhadi, D., & Rahmawati, Y. (2025). Innovative web-based microteaching model: To improve the teaching skills of prospective informatics teachers in vocational high schools. *Social Sciences & Humanities Open*, *11*, 101344. https://doi.org/10.1016/j.ssaho.2025.101344

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Education*, *2*, 53–55. https://doi.org/10.5116/ijme.4dfb.8dfd

Townend, G., Alonzo, D., Knipe, S., & Baker, S. (2025). What does the international literature say about assessment practice for equitable learning outcomes for educationally disadvantaged high school students? *Frontiers in Education*, *10*. https://doi.org/10.3389/feduc.2025.1536485

Tutyandari, C. (2020). *Exploring Pre-Service Teachers' Perceptions of Preparedness for Teaching in Indonesia* [University of Melbourne]. https://hdl.handle.net/11343/241812

Ventista, O. M., & Brown, C. (2023). Teachers' professional learning and its impact on students' learning outcomes: Findings from a systematic review. *Social Sciences & Humanities Open*, *8*(1), 100565. https://doi.org/10.1016/j.ssaho.2023.100565

Zhang, J., Pan, Q., Zhang, D., Meng, B., & Hwang, G.-J. (2024). Effects of Virtual Reality Based Microteaching Training on Pre-Service Teachers' Teaching Skills from a Multi-Dimensional Perspective. *Journal of Educational Computing Research*, *62*(3), 655–683. https://doi.org/10.1177/07356331231226179