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Enhancing Teacher Education Students' Teaching Skills Through Pedagogical Communication in Teaching Simulations

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ABSTRACT

This study aims to identify and explore how pedagogical communication strategies enhance the teaching skills of teacher education students through teaching simulations. Pedagogical communication-based simulations were designed to strengthen students' self-confidence, speaking skills, classroom management, and audience engagement. This study employed a mixed-methods approach using a sequential explanatory design, beginning with quantitative data collection through questionnaires and teaching skills tests, followed by qualitative data from semi-structured interviews and classroom observations. The findings revealed that the implementation of pedagogical communication strategies had a significant positive impact on students' teaching skills, particularly self-confidence, which increased from a mean score of 3.4 to 4.3, along with improvements in speaking skills. Nevertheless, challenges related to audience engagement and time management remained. The novelty of this study lies in integrating pedagogical communication into teaching simulations, transforming conventional microteaching from a performance-oriented exercise into a communication-centered learning process that explicitly develops verbal, non-verbal, relational, and reflective teaching competencies. This integration provides a more comprehensive framework for preparing future teachers and offers practical implications for teacher education curricula by embedding effective communication as a core component of teaching competence.

INTRODUCTION

Teaching skills are a core competency that teacher education students must possess as future educators. These skills are not only limited to the ability to deliver content, but also include the ability to manage communication with students, build interpersonal relationships, and design effective learning experiences. Research on pedagogical communication shows that teaching quality is heavily influenced by the teacher's ability to communicate and interact effectively with students (Kelleci, O., Levin, K., & Hemi, 2024). In the context of teacher education, pedagogical communication not only serves as a channel for delivering information but also as a means of responding to students' emotional needs, fostering learning motivation, and promoting active engagement in the learning process (Khoiriah et al., 2023; Pakhomova et al., 2022).

However, despite the widespread recognition of the importance of pedagogical communication in learning, teacher education students still face significant challenges in developing effective teaching skills. Common challenges include the inability to speak in front of an audience, lack of involvement in interactive learning, and difficulties in applying effective communication strategies (Ferguson & Sutphin, 2021; Keese et al., 2023; Xu et al., 2023). Previous studies show that teacher education students often lack confidence when speaking in front of the class, have little experience in dynamic learning interactions, and struggle with managing communication in diverse classroom settings (Brownell, M. T., Massengale, K. M., & Brown, 2021; Masrifah, S., Suyatno, H., 2023).

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These challenges must be addressed, considering the changes in the higher education system today. Universities, especially teacher education programs, are increasingly moving toward student-centered learning. This system demands more collaborative, reflective, and adaptive teaching approaches that incorporate technological advancements (Kim & Yu, 2023; Okiri & Hercz, 2024). Teacher education students are expected to develop teaching skills that respond to individual student needs with effective communication and the ability to adapt to the growing use of educational technology.

Practice-based teaching simulations have proven effective in improving speaking skills, classroom management, and learning interactions among teacher education students. This method provides students with opportunities to practice teaching skills in a safe environment with a feedback-oriented approach, without the risk of failure in a real classroom (Ferguson & Sutphin, 2021; Landon-Hays et al., 2020; Xu et al., 2023). Teaching simulations, in the form of microteaching, role play, or Mursion, allow students to gain practical experience with direct guidance that helps them refine communication techniques and improve their confidence (Keese et al., 2023; Xu et al., 2023).

However, despite the many advantages of teaching simulations, there remains a significant gap in the integration of pedagogical communication with simulation-based learning. Previous research indicates that most studies focus primarily on developing speaking skills through simulation, yet pedagogical communication as a holistic approach—incorporating emotional and relational aspects of teacher-student interaction—has been less addressed in this context (Keese et al., 2023; Wilkinson & Potts, 2022). While simulation techniques offer students space to practice speaking and class management, the integration of pedagogical communication strategies into simulations that focus on social, emotional, and relational communication skills remains underexplored in existing literature.

The novelty of this study lies in its integrative approach, combining pedagogical communication strategies with teaching simulations. This research aims to identify and explore how these two elements can transform teacher education students' teaching skills. By combining these approaches, the study offers a more holistic approach to developing teaching skills, involving not only speaking abilities but also classroom management, learning interaction, and more effective interpersonal communication management.

Furthermore, this research also highlights the importance of integrating technology into teaching simulations. ICT literacy, pedagogical documentation, and the use of technological platforms in teaching simulations will enrich teacher education students' digital competence and prepare them to face an increasingly technology-driven educational world (Keese et al., 2023; Thompson et al., 2020). While technology-based teaching simulations offer greater flexibility and practical access, the main challenges that remain are the lack of technological infrastructure, teacher training in simulation design, and limitations in simulation scenarios that are relevant to the diverse classroom contexts (Keese et al., 2023; Park et al., 2023; Toste & Lindström, 2022).

Based on a review of existing literature, the main gap in previous research is the separation between pedagogical communication strategies and teaching simulations that focus on technical aspects of speaking and classroom management. In fact, the

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combination of both could provide a greater impact in transforming teacher education students' teaching skills in a more comprehensive and adaptive way to current educational needs. The integration of these elements, particularly in the context of educational technology, opens up new opportunities for developing pedagogy that is more relevant, inclusive, and responsive to the global educational demands (Oubibi et al., 2022; Pakhomova et al., 2022).

The goal of this research is to identify and explore pedagogical communication strategies that can effectively transform teacher education students' teaching skills through the application of simulation-based teaching. With a focus on developing speaking skills, classroom management, and learning interaction, this research aims to contribute to the development of more effective pedagogy in teacher education. Through the integration of pedagogical communication and teaching simulation practices, this study aims to create a framework that optimizes the use of ICT literacy and pedagogical documentation, which are integral to the teaching process for students. This approach will help students develop teaching skills that are more adaptive and responsive to the evolving educational needs.

The significance of this research lies in its ability to improve the quality of teaching in teacher education programs by creating a more holistic and relevant approach. This approach not only involves effective communication techniques but also integrates learning technology that will prepare teacher education students to face the demands of the future education landscape, which is increasingly digital. Therefore, this research is expected to have a positive impact on the development of more innovative and adaptive teacher competencies in managing dynamic learning processes.

To bridge the gap between the literature review and the study's objectives, the following research questions are explicitly posed:

1. How can pedagogical communication strategies be integrated into teaching simulations to improve teaching skills?
2. What impact does the integration of digital learning technology have on teacher education students' readiness for future teaching environments?

RESEARCH METHOD

This study employed a mixed-methods Sequential Explanatory Design. A structured scoring rubric was used to assess the teaching skills demonstrated by teacher education students during the teaching simulation. The rubric consisted of several key components, each focusing on a distinct aspect of teaching proficiency. These components include:

1. Classroom Management: This criterion evaluates the teacher's ability to maintain an organized and focused classroom environment. The rating scale ranges from 1 (poor) to 5 (excellent), based on the teacher's effectiveness in managing classroom disruptions and student behavior.
2. Clarity of Instruction: This criterion assesses how effectively the teacher explains the lesson content. A score of 1 indicates unclear or confusing instructions, while a score of 5 reflects clear and concise explanations that students can easily comprehend.
3. Student Interaction: This component examines the extent of engagement the teacher fosters with students. A score of 1 reflects minimal student-teacher interaction, while a score of 5 represents highly interactive and participatory lessons.

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The rubric employs a 1-5 scale for each criterion, and the total score provides an overall assessment of the teacher's performance. To ensure the reliability and validity of the rubric, it has been tested in prior educational research and refined through expert review (Creswell, 2013).

The study involves 25 students enrolled in the Indonesian Language and Literature Education program at a university in West Java. These students were selected using purposive sampling, ensuring that participants had direct experience with pedagogical communication-based teaching simulations. The selected participants were those who had attended at least one teaching simulation session integrated into their curriculum. This purposive sampling technique was chosen to ensure that participants could provide relevant insights related to the application of pedagogical communication in the learning context (Patton, 2015).

The instruments used in this study include observation sheets, questionnaires, semi-structured interviews, and teaching skills tests. Each instrument was used to collect data from different perspectives, which were then analyzed integratively.

Observation sheets were used to observe the application of pedagogical communication during the teaching simulation. This observation includes aspects such as verbal and non-verbal language use, classroom management, and audience engagement. The observations were conducted by the researcher to evaluate how students applied pedagogical communication theories in their classroom practices.

Questionnaires, consisting of both closed and open-ended questions, were used to measure students' perceptions of their teaching skills and the changes they experienced after participating in the teaching simulation. This questionnaire also measured students' perceptions of the pedagogical communication implemented during the simulation.

Semi-structured interviews were conducted with 5 randomly selected students to explore their experiences more deeply regarding the challenges and practical experiences they had in using pedagogical communication. These interviews aimed to provide deeper insights into the factors that influence the successful implementation of pedagogical communication in the classroom.

Teaching skills tests were given to students before and after they participated in the teaching simulation to assess changes in their speaking skills, classroom management, and audience interaction. The scoring rubric used in this test was designed to measure various aspects of teaching skills systematically and objectively (Allen & Stecker, 2022).

Data collection was carried out in two stages according to the Sequential Explanatory Design. In the first stage, quantitative data were collected through the questionnaires and teaching skills tests. The questionnaire was used to measure students' perceptions of the changes in their teaching skills, while the teaching skills test provided an objective view of their speaking skills and classroom management.

After the quantitative data were collected, the second stage began with the collection of qualitative data through interviews and classroom observations. The semi-structured interviews with students aimed to explore their personal experiences in using pedagogical communication and the challenges they faced. Classroom observations were conducted to directly observe how pedagogical communication was applied during the teaching simulation and how students managed the class and interacted with the audience.

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The quantitative data obtained from the questionnaires and teaching skills tests will be analyzed using descriptive statistics and paired t-tests. Descriptive statistical analysis will provide an overview of the changes in students' teaching skills, while the paired t-test will be used to determine if there are significant differences in students' teaching skills before and after the simulation.

The qualitative data obtained from the interviews and observations will be analyzed using thematic analysis. This analysis will be used to identify key themes related to students' experiences in applying pedagogical communication. The interview and observation data will be transcribed, coded, and analyzed to identify patterns relevant to the research objectives (Braun & Clarke, 2006).

To ensure the validity of the instruments, a pilot test was conducted on the questionnaire and teaching skills test to ensure that the instruments measure what they are supposed to measure. Construct and contextual validity will be checked by comparing the findings of this study with previous relevant studies. The evaluation of participants' performance during observations will be grounded in pedagogical communication theories, such as the Interactional Model of Communication and Vygotsky's Sociocultural Theory, which focus on assessing both verbal and non-verbal communication, interaction styles, and classroom management. These frameworks will guide the assessment of participants' ability to engage with students effectively and manage the dynamics of the classroom environment.

The reliability of the instruments will be tested using Cronbach's alpha to measure internal consistency on the questionnaires and teaching skills tests. For qualitative data, inter-rater reliability will be tested by involving multiple raters in the analysis process of the interview and observation data to ensure consistency in the assessment.

This study adheres to ethical principles. All participants were informed of the research purpose and their right to participate voluntarily. The security and confidentiality of the data will be maintained, and the research findings will be presented without disclosing participants' personal identities. Participation is voluntary, and students have the right to withdraw from the study at any time without consequences.

RESULTS AND DISCUSSION

Result

A. Quantitative Results: Questionnaire and Teaching Skills Test

This study reveals that the implementation of pedagogical communication strategies in teaching simulations has a significant positive impact on improving the teaching skills of teacher education students. The quantitative results obtained from the questionnaires filled out by students and the teaching skills tests conducted before and after the simulation show clear changes across various measured indicators, including self-confidence, speaking skills, classroom management, verbal and non-verbal communication, and audience engagement.

The questionnaire results show that the majority of students experienced a significant increase in self-confidence and teaching skills after participating in the pedagogical communication-based teaching simulation. The average self-confidence score increased from 3.4 (before the simulation) to 4.3 (after the simulation). This increase indicates that students felt more prepared and organized in speaking in front of the class and more capable of managing interactions with the audience. Self-

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confidence is a key element in teaching, as confident teachers are more effective in delivering material and interacting with their students. Therefore, the significant improvement in this indicator serves as important evidence that pedagogical communication in teaching simulations has a positive impact on enhancing students' readiness and self-confidence.

Additionally, the average score for teaching skills improvement was recorded at 4.28, indicating that most students felt they had improved their teaching skills after participating in the simulation. This score reflects a real improvement in their ability to deliver material and manage the class more effectively. Students who participated in the teaching simulation felt more capable of designing and delivering material in a structured manner, as well as becoming more familiar with using various communication strategies to keep the audience engaged during the learning sessions.

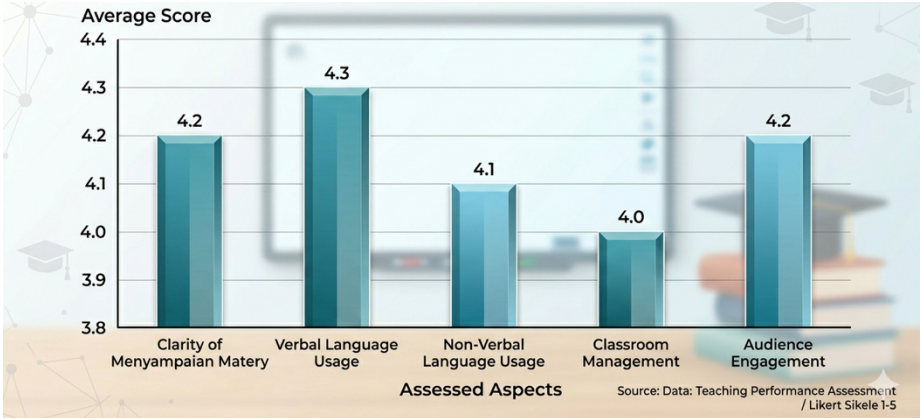

Figure 1. Change in Students' Perception of Teaching Skills Before and After Simulation

Figure 1 above shows the change in students' perceptions of their teaching skills before and after the simulation. From this diagram, it is evident that there was a significant improvement in the use of non-verbal communication and classroom management. The increase in the use of non-verbal communication indicates that students became more aware of the importance of non-verbal cues, such as eye contact, facial expressions, and body language in conveying their messages. This becomes a crucial aspect in teaching because non-verbal communication can strengthen or even replace verbal messages, depending on the context.

Students who were better at managing the class also showed improvement in audience engagement, which suggests that they were more capable of keeping the audience involved in the learning process. The ability to maintain audience attention throughout the lesson is critical, as engaged audiences tend to better understand the material and are more active in the learning process.

In addition to the questionnaire, the results from the teaching skills test further support these findings. The average score for clarity of material delivery increased from 75% before the simulation to 85% after the simulation. This indicates that students became better at delivering material more clearly and in a structured manner, as well as organizing the delivery flow to make it easier for the audience to understand. Classroom management also improved, rising from 70% to 80%, showing that students were more effective at managing class dynamics, such as time management and maintaining audience attention.

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The largest improvement was seen in audience engagement, which increased from 72% to 82%. This reflects that students became more effective at inviting audience participation and maintaining their involvement throughout the simulation. One essential element of teaching is creating a two-way interaction between the instructor and the audience, and this ability improved significantly after the simulation.

The results of the paired t-test showed a significant difference between before and after the teaching simulation ($p < 0.05$), confirming that the implementation of pedagogical communication in the teaching simulation had a significant impact on improving students' teaching skills. Specifically, the simulation had the most considerable effect on increasing public speaking skills, classroom management, and audience engagement. These findings support the hypothesis that pedagogical communication is a key factor in enhancing teaching skills, particularly in the context of higher education.

B. Qualitative Results: Interviews and Classroom Observations

The qualitative results from the semi-structured interviews conducted with 5 randomly selected students revealed several key themes related to their experiences in using pedagogical communication during the teaching simulation. Overall, students responded positively to the implementation of pedagogical communication. They felt more organized in delivering material, more confident in speaking in front of the class, and more engaged with the audience.

One key theme that emerged was the increased awareness among students about the importance of managing time and the material to be presented. Many students felt that they were more able to organize the delivery of material after receiving feedback on time management and the structure of the material. One student stated, "*Simulasi ini membantu saya memahami cara mengajar dengan lebih jelas dan dengan cara yang lebih terstruktur di depan kelas, serta bagaimana mengelola perhatian audiens.*" This shows that students began to realize the importance of not only mastering the material but also presenting it in a way that is more effective and engaging for the audience. Another student added, "*Saya merasa lebih percaya diri setelah menerima umpan balik yang konstruktif tentang penggunaan bahasa tubuh dan ekspresi wajah saya*." Ini feedback helped them understand that non-verbal communication, such as facial expressions and body movements, can strengthen the message being conveyed, making interactions more dynamic and engaging.

However, some students also mentioned the challenges they faced, particularly in managing audiences that were less focused and managing time in each simulation session. For example, Students 2 and 4 highlighted that time management was their main challenge, given the dense material and the limited time to explain. One student said, "*Saya merasa lebih mampu mengatur waktu sambil mengajar setelah menerima saran tentang cara menyederhanakan materi tanpa kehilangan esensinya.*" This reflects that students began to understand the importance of selecting relevant material and presenting it efficiently. Students 7 and 9 also noted that managing unresponsive audiences was their biggest challenge, especially in larger classes. As one student expressed, "*Umpan balik yang saya terima tentang keterlibatan audiens membuat saya menyadari pentingnya mendorong partisipasi aktif di kelas.*" This shows that while students have become more confident in speaking, they still need to address the challenge of keeping the audience's attention, which tends to be less responsive.

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The classroom observations conducted during the teaching simulations provided a more detailed view of the application of pedagogical communication. In general, students who applied pedagogical communication strategies more effectively were able to manage the class more effectively and maintain audience engagement through interactive techniques such as open-ended questions and small group discussions. One student explained, "*Melalui simulasi ini, saya belajar bagaimana menggunakan ekspresi wajah dan gerakan tangan untuk memperkuat pesan yang saya sampaikan,*" showing an improvement in skills in using body language to clarify and reinforce the verbal message. However, some students still struggled to manage time and unresponsive audiences. Some students found it difficult to maintain the audience's attention during longer simulation sessions, and often, the material felt too dense to be delivered within the limited time frame.

C. Results from Teaching Skills Test and Lecturer Evaluation

The results from the teaching skills test, administered before and after the teaching simulation, show that most students achieved good scores, with an average total score of 21.24 out of 25. Students who scored high (above 22/25) demonstrated excellent teaching skills, with strong abilities in verbal and non-verbal communication, classroom management, and audience engagement. Students who scored low (below 17/25) identified challenges in audience management, interactive engagement, and ineffective use of non-verbal communication.

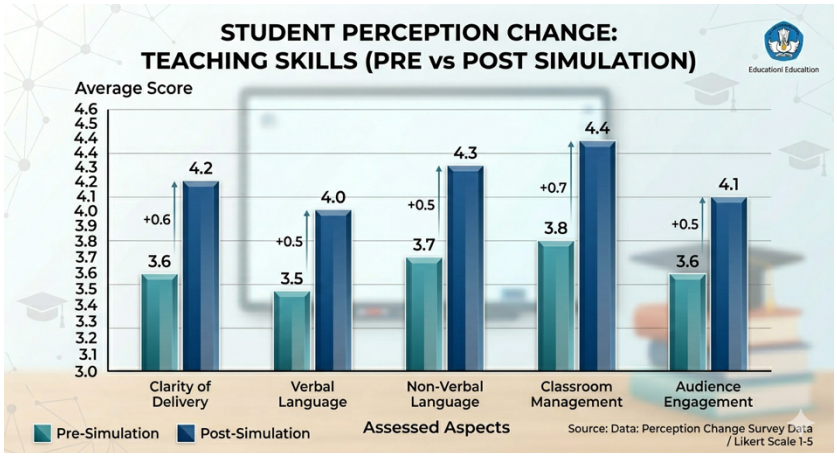

Figure 2. Qualitative Results: Interviews and Classroom Observations

Figure 3. Network Diagram of Interdependence in Pedagogical Communication in Teaching Simulations

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By visualizing the relationships among these components, Figure 3 provides a more holistic view of how the implementation of pedagogical communication in teaching simulations not only affects one aspect of teaching skills but also the entire process of interaction between students and the audience. Each component, including clarity of material, verbal and non-verbal communication, classroom management, and audience engagement, interacts and influences each other, creating a more cohesive system that enhances the quality of teaching. Time management, which is often a major challenge, can be overcome through the use of effective communication techniques, allowing limited time to be used more efficiently. The effective use of non-verbal communication, such as eye contact and facial expressions, reinforces the verbal message and encourages the audience to become more engaged. More active audience engagement will improve classroom management, keeping interactions focused and leading to more optimal teaching outcomes. All these components work synergistically, resulting in a more dynamic and effective learning experience.

Discussion

The results of this study indicate that integrating pedagogical communication strategies into teaching simulations has a significant positive impact on teacher education students' teaching skills. The data suggest improvements in several key areas, including self-confidence, classroom management, speaking skills, and audience engagement, both quantitatively and qualitatively. These findings align with existing literature, which emphasizes the importance of effective teacher-student communication for fostering better learning environments and enhancing teaching quality (Allen & Stecker, 2022; Houser & Hosek, 2018).

One of the most significant findings in this study is the increase in students' self-confidence and teaching skills after participating in pedagogical communication-based teaching simulations. This finding supports previous research indicating that effective pedagogical communication is a critical component of teaching practice, as it strengthens classroom interaction, student engagement, and instructional effectiveness (Brownell et al., 2019; Masrifah et al., 2022). Increased self-confidence allows future educators to deliver material more effectively, engage students more actively, and manage classroom dynamics with greater ease. Pedagogical communication, especially in teaching simulations, provides students with a safe environment to practice, receive constructive feedback, and reflect on their instructional approaches, thereby fostering greater teaching confidence(Keese et al., 2023).

Additionally, improvements in classroom management and the use of non-verbal communication (e.g., body language, facial expressions, and eye contact) were evident in the study's results. These findings are consistent with previous research, such as studies by (Munir, Khan & Munawar, 2024), which also emphasize the importance of non-verbal cues in teacher-student interactions. However, unlike (Nurhayati & Dollah, 2024), this study highlights the specific contribution of non-verbal communication in classroom management during teaching simulations, providing a more nuanced understanding of its role in managing student engagement and maintaining focus. Non-verbal communication is a key component of pedagogical communication, as it helps reinforce verbal messages and engage students on a deeper emotional level. These findings are consistent with previous research, which highlights the importance of non-

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verbal cues in facilitating better teacher-student interactions and fostering an engaging learning environment (Pakhomova et al., 2022; Xu et al., 2023).

Despite the improvements, several challenges remain, particularly related to time management and audience engagement in larger classes. These challenges reflect the complex nature of teaching and the dynamic interaction between the teacher, students, and the classroom environment. Many students struggled with managing the limited time during simulations, which often affected the depth and breadth of material they could cover. Time management is a common issue in teaching practice, and it is crucial for teacher education students to learn how to efficiently prioritize content and engage students in a limited timeframe (Kim & Yu, 2023; Okiri & Hercz, 2024).

Furthermore, engaging unresponsive audiences remains a key challenge, especially in larger classes or when students are less participatory. This highlights the need for teacher education programs to incorporate strategies that help students manage class dynamics effectively and encourage active participation. Techniques such as using open-ended questions, small group discussions, and fostering a collaborative learning environment can significantly improve audience engagement and ensure that all students are actively involved in the learning process (Allen & Stecker, 2022; Toste & Lindström, 2022).

This study also underscores the importance of integrating technology into teaching simulations. The use of ICT tools and platforms in teaching simulations can enhance students' digital competence and prepare them for the increasingly technology-driven educational environment (Thompson et al., 2020; Xu et al., 2023). However, the study also revealed challenges related to technological infrastructure and the training of teachers in simulation design. The integration of technology in teaching simulations requires robust support systems, including proper training for both instructors and students, to ensure that simulations are both effective and accessible to all learners (Ford et al., 2023; Keese et al., 2023).

The integration of pedagogical communication strategies into teaching simulations offers a more holistic approach to teacher development. By focusing not only on speaking skills and classroom management but also on emotional, relational, and interactive communication, teacher education programs can better prepare students to meet the diverse needs of their future students. This study contributes to the growing body of research on simulation-based learning and pedagogical communication, providing evidence that the combination of these two approaches enhances teaching effectiveness in a comprehensive manner.

Teacher education programs should consider embedding pedagogical communication strategies into their curriculum, using teaching simulations as a central tool for skill development. The results of this study suggest that simulations can be an effective way to bridge the gap between theoretical knowledge and practical teaching experience, while also addressing the emotional and relational aspects of teaching that are often overlooked in traditional pedagogical models.

CONCLUSION

This study demonstrates that integrating pedagogical communication into teaching simulations significantly enhances the teaching competencies of teacher education students, particularly in terms of self-confidence, speaking skills, classroom management, and audience engagement. More importantly, the findings indicate that

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pedagogical communication extends beyond improving communication skills alone; it transforms teaching simulations from performance-oriented activities into communication-centered learning experiences that strengthen instructional competence, foster meaningful teacher–student interaction, and support reflective teaching practice through the integration of verbal and non-verbal communication strategies. These findings underscore the importance of embedding pedagogical communication systematically within teacher education curricula rather than treating it as an isolated or supplementary competency. Teacher education programs should therefore provide structured opportunities for teaching simulations, guided feedback, and reflective practice to enable pre-service teachers to develop adaptive communication skills, manage classroom dynamics effectively, and create more engaging and student-centered learning environments. Nevertheless, several limitations should be acknowledged. This study was conducted with participants from a single teacher education program at one university, which may limit the transferability of the findings to other institutional and disciplinary contexts. Furthermore, the intervention was implemented within simulated teaching settings, making it difficult to determine whether the communication competencies developed during the intervention are sustained and transferred to authentic classroom practice over time. Future research should therefore move beyond simply involving larger sample sizes by investigating the long-term sustainability of pedagogical communication competencies through longitudinal studies that follow pre-service teachers into real classroom environments. Comparative research across different teacher education programs, subject disciplines, educational levels, and technology-enhanced learning environments is also recommended to examine how contextual factors influence the effectiveness of pedagogical communication strategies. In addition, future studies should investigate the interrelationships among pedagogical communication, self-confidence, classroom management, audience engagement, reflective teaching practice, and instructional effectiveness to develop a more comprehensive understanding of the mechanisms through which pedagogical communication contributes to teacher professional development and ultimately improves the quality of teaching and learning.

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