PAEDAGOGIA
Jurnal Penelitian Pendidikan
http://jurnal.uns.ac.id/paedagogia

DOI : 10.20961/Paedagogia.V27i3.95398
Vol. 27, No. 3, 2024, pp. 357-367
p-ISSN 0126-4109
e-ISSN 2549-6670

Development of The Insightful EducatorHub Platform to Enhance Technology-Based Mentoring Collaboration in The Teacher Professional Education Program

Ibrohim[1*], Makbul Muksar[2], Erni Yulianti[3], I Wayan Sumberartha[1], Maya Umi Hajar[1]
[1] Department of Biologi Education, Univeritas Negeri Malang, Indonesia
[2]Professional Teacher Education Program the Graduate School, Universitas Negeri Malang
[3]Department of Science Education, Univeritas Negeri Malang, Indonesia

Keywords:
Mentoring Collaboration, Teacher Education, Insightful EducatorHub, Structured Feedback, Digital Mentoring Tools, Teacher Professional Development

Article history
Received: 29 September 2024
Revised: 15 October 2024
Accepted: 15 October 2024
Published: 31 October 2024

*Corresponding Author Email:
ibrohim.fmipa@um.ac.id

doi: 10.20961/paedagogia.v27i3.95398

Abstract: Traditional mentoring within teacher education often struggles with inconsistent interaction, vague feedback, and inefficient communication, which collectively hinder the professional growth of teacher candidates. The Insightful EducatorHub platform was developed to address these issues by leveraging a digital solution with real-time communication tools, structured feedback mechanisms, and collaborative spaces. This study aimed to improve mentoring collaboration through a research and development (R&D) approach using the ADDIE model. The platform was tested with 30 teacher candidates, five mentor teachers, and five supervisors from five schools. Data were collected through pre- and post-implementation surveys and semi-structured interviews. Quantitative findings indicated a 35% increase in interaction frequency and a 40% improvement in participant satisfaction levels. At the same time, mentors and supervisors recognized the platform's utility in organizing tasks and consolidating mentoring processes. Although prosperous, the trial identified areas for refinement, including greater customization and advanced analytics to better suit diverse educational settings while demonstrating Insightful EducatorHub's promise as an innovative tool for elevating mentoring practices and supporting the professional development of future educators.

.

How to cite: Ibrohim., Muksar, M., Yulianti, E., Sumberartha, I. & Hajar, M. (2024). Development of The Insightful EducatorHub Platform to Enhance Technology-Based Mentoring Collaboration in The Teacher Professional Education Program. *PAEDAGOGIA*, *27*(3), 357-367. doi: 10.20961/paedagogia.v27i3.95398

INTRODUCTION

Effective mentoring is a cornerstone of teacher education programs, equipping aspiring educators with the skills and knowledge necessary to transition from academic preparation to professional practice. Mentoring bridges theoretical frameworks with practical teaching applications in real-world classroom settings (Carter Smith, L., Brown, J. et al., 2020; Hunskaar & Gudmundsdottir, 2023; Jones et al., 2022; Sparks, 2021). By providing guidance, support, and feedback, effective mentoring fosters the professional development of teacher candidates, enabling them to navigate the complexities of teaching roles with confidence and competence (Leahy et al., 2019; Mathur et al., 2022; Smith & Brown, 2023).

However, despite its potential, traditional mentoring practices face significant challenges that hinder their ability to fully support teacher candidates (Dreer-Goethe, 2023; Goldhaber et al., 2020). One prominent issue is the limited opportunities for consistent interaction among teacher candidates, mentor teachers, and supervisors. This lack of regular engagement can impede the development of a supportive mentoring relationship, leaving candidates to address classroom challenges with minimal guidance (Carter et al., 2020; Hunskaar & Gudmundsdottir, 2023; Smith & Brown, 2023; Sparks, 2021). Without ongoing, meaningful interactions, opportunities for providing timely and context-specific advice are lost, further isolating teacher candidates in their professional journey (Hobson et al., 2022; Zhao et al., 2023).

Another key challenge lies in the nature of feedback provided during mentoring. Evaluations from

mentors and supervisors often lack the necessary depth to address the specific teaching competencies required for professional growth (Williams & Martinez, 2023). Feedback is frequently overly general or vague, failing to highlight actionable steps for improvement (Hunskaar & Gudmundsdottir, 2023; Lin et al., 2020; Sparks, 2021). The absence of structured and targeted feedback reduces its utility as a developmental tool, leaving teacher candidates with limited direction on refining their teaching practices and achieving competency in critical pedagogical areas (Davies, M., Kiemer, K., & Meissel, 2017; Mathur et al., 2022). Moreover, unstructured feedback mechanisms not only hinder the ability of teacher candidates to identify areas of improvement but also limit their capacity to develop reflective teaching practices (Patel & Johnson, 2023).

A critical gap in the current research is the lack of innovative approaches to mentoring that address these challenges by fostering meaningful interactions and delivering structured feedback. While existing studies have explored various aspects of mentoring, they often fail to provide comprehensive frameworks that integrate consistent engagement and targeted feedback into teacher education programs. For instance, Hunskaar & Gudmundsdottir, (2023) emphasize the need for robust mentor-candidate interactions but do not offer practical solutions for implementation. Similarly, Lin et al., (2020) highlight the importance of actionable feedback but fall short in outlining mechanisms for ensuring its effectiveness.

In addressing these challenges, there is a pressing need for innovative approaches to mentoring that prioritize consistent interaction, structured feedback, and targeted support. Such approaches should focus on creating a more dynamic and responsive mentoring environment, ensuring that teacher candidates receive the guidance they need to develop into skilled and reflective educators capable of meeting the demands of modern classrooms (Chen & Wang, 2022). Additionally, fragmented and inefficient communication among stakeholders complicates the mentoring process further. Misaligned expectations and inconsistent support arise when communication channels are not streamlined, reducing the overall effectiveness of mentoring activities (Moore et al., 2020).

Traditional mentoring methods, such as face-to-face discussions or written documentation, are still widely used. However, these methods often fail to accommodate modern educational contexts' logistical challenges and diverse needs, including geographical dispersion, time constraints, and the demand for more flexible, technology-enabled solutions (Leahy et al., 2019; Moore et al., 2020; Sparks, 2021). These limitations pose significant barriers to the professional growth of teacher candidates. Without consistent interaction, structured feedback, and efficient communication, candidates are less likely to fully integrate theoretical knowledge with practical teaching. Moreover, the lack of innovative mentoring tools undermines opportunities for candidates to develop critical pedagogical skills and reflect meaningfully on their teaching practices (Carter, et al., 2020; Hunskaar & Gudmundsdottir, 2023; Robinson et al., 2023).

To address these challenges, the Insightful EducatorHub platform was developed as an innovative solution to enhance mentoring collaboration during field practice. By leveraging digital tools designed to support structured communication and feedback, this platform provides a more accessible and efficient mentoring environment. Its features are tailored to overcome the limitations of traditional approaches, offering real-time interaction, collaborative feedback systems, and coordinated mentoring activities. These capabilities ensure that teacher candidates receive comprehensive guidance and support to excel in their professional roles, fostering their practical and reflective competencies (Hunskaar & Gudmundsdottir, 2023; Sparks, 2021; Zhao et al., 2023). This study aimed to develop and evaluate the Insightful EducatorHub platform as a solution to enhance mentoring collaboration during field practice. By addressing challenges such as limited interaction and unstructured feedback, the platform aimed to create a more dynamic and supportive mentoring environment, equipping teacher candidates with the guidance needed for their professional growth.

METHOD

This study employed a research and development (R&D) design adapted from Branch (2009) to create and evaluate the Insightful EducatorHub platform as a tool to enhance mentoring collaboration in teacher education programs. The development followed the ADDIE model, which includes the stages of Analyze, Design, Develop, Implement, and Evaluate. The Analyze phase identified challenges in traditional

mentoring practices, such as limited interaction, unstructured feedback, and inefficient communication, through an extensive literature review and stakeholder interviews. Based on these findings, the Design phase established the platform, incorporating features such as real-time interaction tools, structured feedback systems, and collaborative spaces. During the Development phase, a functional prototype of the platform was constructed, with iterative testing and feedback from mentor teachers, supervisors, and teacher candidates to refine its usability and effectiveness.

The platform was implemented during teacher candidates' field practice at selected partner schools. Participants included teacher candidates, mentor teachers, and supervisors actively involved in mentoring processes. Participants were selected using purposive sampling due to their active involvement in the mentoring process, relevance to the research objectives, diversity of school contexts, commitment to mentoring activities, field practice experience, and institutional partnerships that facilitated data accessibility and platform implementation. Participant Description in Table 1 below.

Table 1. Participants Description

No.	School Name	Teacher candidates	Mentor teachers	Supervisors
1.	SMPN 2 Pakis	6	1	1
2.	SMPN 23 Malang	6	1	1
3.	SMP Lab UM	6	1	1
4.	SMPN 2 Malang	6	1	1
5.	SMP Sriwedari	6	1	1
	Total	30	5	5

Table 2. Questionnaire Items and Indicators of Teacher Candidates' Perspectives

No.	Indicators	Question
1.	Effectiveness in Collaboration	The platform helped me collaborate effectively with my mentor and supervisor.
2.	Effectiveness in Collaboration	I felt that collaboration activities through the platform were impactful.
3.	Impact of Collaboration Usage	The collaborative tools enhanced my teaching skills and professional growth.
4.	Impact of Collaboration Usage	Collaboration features positively influenced my ability to integrate theory into practice.
5.	Feature Usability	The platform features were user-friendly.
6.	Feature Usability	I was able to use all platform features effectively for mentoring purposes.
7.	Ease of Use	The platform was easy to navigate and understand.
8.	Ease of Use	I did not encounter significant technical challenges while using the platform.

Data collection and evaluation were conducted using a mixed-methods approach to comprehensively analyze the platform's impact. Quantitative data were gathered through pre- and post-implementation surveys using a 4-point Likert scale (Strongly Agree, Agree, Disagree, Slightly Disagree) to measure participants' satisfaction, interaction frequency, and perceived quality of feedback. The surveys were distributed via Google Forms to facilitate accessibility and efficient data collection. To evaluate the teacher candidates' perspectives on the Insightful EducatorHub platform, a questionnaire was developed based on four key indicators: Effectiveness in Collaboration, Impact of Collaboration Usage, Feature Usability, and Ease of Use. The instrument underwent a validation process involving expert judgment and statistical analysis, resulting in a validity score of 0.85 and a reliability coefficient of 0.91, indicating that the questionnaire is highly valid and reliable for assessing participants' perspectives. The detailed list of indicators and corresponding questions is presented in Table 2.

To evaluate the perspectives of teacher mentors and supervisors on the Insightful EducatorHub platform, two separate questionnaires were developed, each based on four key indicators: Effectiveness

in Collaboration, Impact of Collaboration Usage, Feature Usability, and Ease of Use. Both instruments underwent a rigorous validation process involving expert judgment and statistical analysis. The teacher mentors' questionnaire achieved a validity score of 0.87 and a reliability coefficient of 0.92. In contrast, the supervisors' questionnaire recorded a validity score of 0.88 and a reliability coefficient of 0.93, indicating that both instruments are highly valid and reliable for assessing participants' perspectives. The detailed list of indicators and corresponding questions for teacher mentors and supervisors is presented in Table 3.

Table 3. Questionnaire Items and Indicators for teacher mentors and supervisors

No.	Indicators	Question
1.	Effectiveness in Collaboration	The platform supported effective collaboration with teacher candidates.
2.	Effectiveness in Collaboration	Collaborative activities through the platform were impactful.
3.	Impact of Collaboration Usage	The collaboration features helped me provide targeted guidance.
4.	Impact of Collaboration Usage	Using the collaboration features positively influenced my mentoring practices.
5.	Feature Usability	The platform features were easy to use and functional.
6.	Feature Usability	I could utilize all platform features effectively for mentoring purposes.
7.	Ease of Use	The platform interface was user-friendly and intuitive.
8.	Ease of Use	I experienced minimal technical issues while using the platform.

Statistical analyses were conducted to evaluate the platform's effectiveness in enhancing mentoring collaboration. Quantitative data were analyzed using descriptive statistics to summarize participants' satisfaction levels, interaction frequency, and the perceived quality of feedback. Central tendency (mean) and variability (standard deviation) were calculated for each survey item to provide an overview of participant responses. This descriptive statistical approach provided valuable insights into how the platform addressed traditional mentoring challenges and highlighted areas where it excelled, such as real-time communication and structured feedback. These findings serve as a solid foundation for assessing the platform's overall impact and identifying specific areas for enhancement in future iterations.

RESULT

This section evaluates the Insightful EducatorHub platform's effectiveness in enhancing mentoring collaboration among teacher candidates, mentor teachers, and field supervisors during field practice. The findings highlight the platform's ability to address traditional mentoring challenges and its impact on teacher candidates' professional development.

The development of the Insightful EducatorHub platform successfully addressed several key challenges faced in traditional mentoring practices within teacher education programs. The platform integrated features that enhanced interaction, structured feedback, and collaboration among teacher candidates, mentor teachers, and field supervisors. Its design and implementation showcased significant improvements in mentoring processes and teacher candidates' professional growth. The development of the Insightful EducatorHub interface in Figure 1.

The development of the Insightful EducatorHub platform successfully addressed the limitations of traditional mentoring practices in teacher education programs. The platform enhanced interaction quality and usability by incorporating intuitive features such as real-time communication tools and structured feedback systems. Participants found the interface easy to navigate, fostering seamless collaboration among teacher candidates, mentor teachers, and supervisors. The platform significantly improved the frequency and depth of interactions, offering a dynamic space for mentoring relationships to thrive. Teacher candidates highlighted its role in bridging the gap between theoretical knowledge and practical

application, while mentors and supervisors appreciated its efficiency in facilitating structured and actionable feedback. These advancements directly supported the professional development of teacher candidates, aligning with established best practices in mentorship.

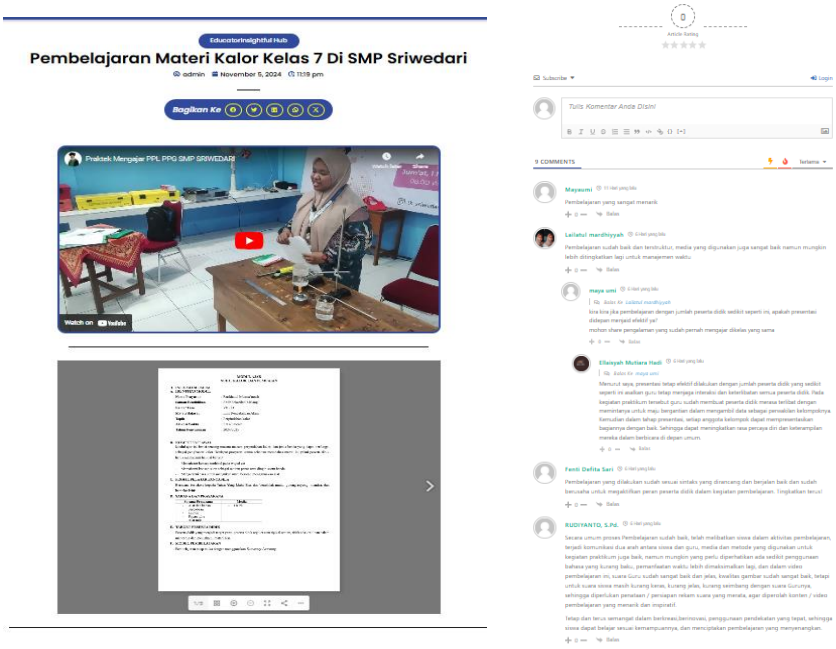

Figure 1. Insightful EducatorHub Platform interface

Despite its success, the platform's implementation revealed areas for refinement. Initial technical challenges during onboarding presented minor obstacles for some participants, while others expressed a need for more customizable features to accommodate diverse mentoring contexts. These insights underscore the importance of iterative development to maximize the platform's flexibility and usability across varied educational settings. Overall, the Insightful EducatorHub demonstrated significant potential to transform mentoring processes, making them more accessible, effective, and responsive to the demands of modern teacher education programs.

Evaluation and Platform Assessment

Teacher candidates Perspective

The implementation of the Insightful EducatorHub platform revealed significant benefits from the perspective of teacher candidates. One of the most appreciated aspects was the platform's ability to provide consistent, real-time guidance during field practice. Teacher candidates reported feeling more supported compared to traditional mentoring methods, as the platform facilitated timely feedback and continuous interaction with mentor teachers and supervisors. This accessibility helped reduce the isolation often experienced during independent teaching assignments, fostering a more collaborative and supportive environment.

Figure 2 illustrates the results of teacher candidates' perspectives regarding the trial of the Insightful EducatorHub platform. The data highlights their overall satisfaction and the platform's perceived impact on key aspects of mentoring during field practice. The metrics evaluated include ease of use, accessibility, quality of feedback, and support for collaborative learning. The results show a high level of satisfaction among teacher candidates, with the majority rating the platform positively across all dimensions.

Teacher candidates particularly emphasized the platform's ability to provide timely feedback and foster regular interactions with mentors and supervisors. This feature addressed a key challenge in traditional mentoring, where feedback was often delayed or insufficiently detailed. Additionally, the platform's collaborative tools, such as real-time messaging and shared reflective spaces, were rated as highly effective in enhancing their learning experience and building their confidence in teaching. These

results align with previous studies that emphasize the importance of structured and interactive mentoring tools in supporting teacher professional development (Hunskaar & Gudmundsdottir, 2023; Sparks, 2021).

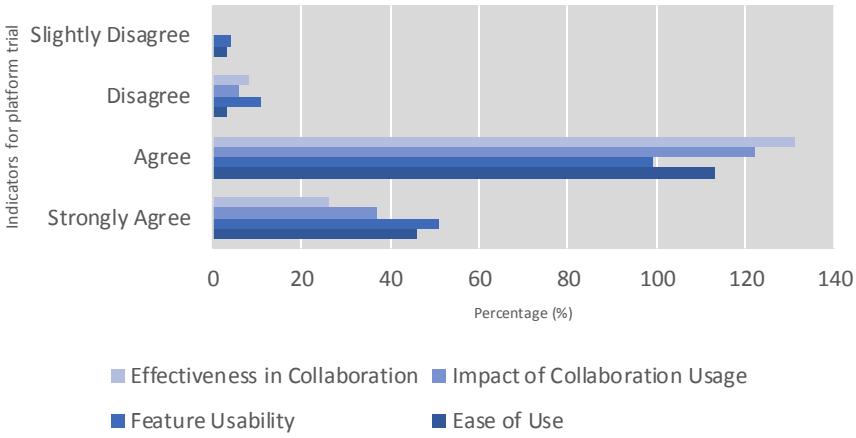

Figure 2. Teacher Candidate Perspective in Platform Trial

Teacher Mentor perspective

The trial of the Insightful EducatorHub platform also provided valuable insights from the perspective of teacher mentors. Mentor teachers reported that the platform significantly streamlined the mentoring process, particularly in facilitating structured communication and feedback. The availability of real-time interaction tools allowed mentors to provide timely guidance and address teacher candidates' concerns promptly. This feature was highlighted as a key improvement over traditional mentoring practices, which often involved delays in communication due to logistical barriers.

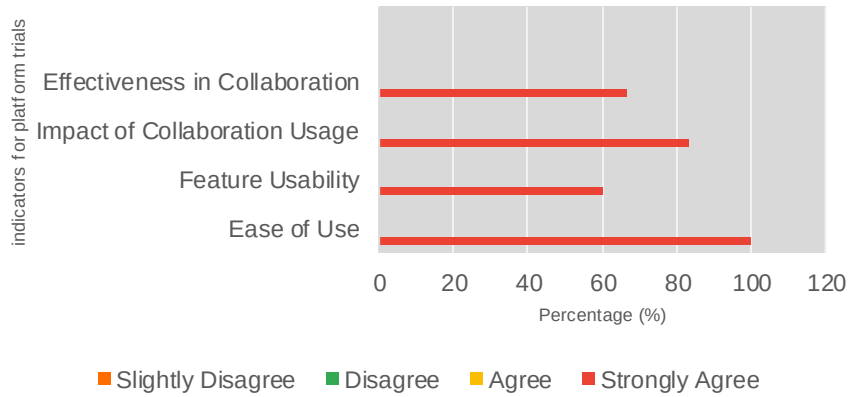

Figure 3. Teacher Mentor Perspective in Platform Trial

Figure 3 presents the evaluation of teacher mentors' perspectives on using the Insightful EducatorHub platform during its trial phase. The data highlights mentors' satisfaction levels across various aspects, including ease of providing feedback, effectiveness in supporting teacher candidates, and overall platform usability. The majority of teacher mentors rated the platform positively, indicating its effectiveness in addressing traditional challenges in the mentoring process.

One of the most notable findings is the mentors' appreciation for the structured feedback system integrated into the platform. Unlike conventional methods, which often rely on verbal or loosely documented feedback, the platform provided tools for organized and detailed assessments. This structure allowed mentors to offer actionable and specific recommendations tailored to individual candidates, fostering more focused professional growth. Moreover, the ability to give timely feedback through real-time communication tools was highlighted as a significant improvement, reducing delays commonly experienced in traditional mentoring setups. Mentors also valued the platform's collaborative

features, facilitating resource sharing and discussions among mentors and candidates. This aspect enhanced the mentoring process and provided mentors with opportunities for professional growth through peer collaboration. The digital nature of the platform allowed for better monitoring and tracking of candidates' progress, ensuring that mentoring activities were aligned with the candidates' developmental needs.

Supervisor perspective

The trial of the Insightful EducatorHub platform provided valuable insights from the perspective of supervisors involved in mentoring teacher candidates. Supervisors found the platform highly effective in facilitating their role as coordinators of the mentoring process. The ability to monitor interactions and provide structured guidance through the platform addressed a significant challenge in traditional mentoring, where supervisors often faced difficulties tracking teacher candidates' progress across multiple schools.

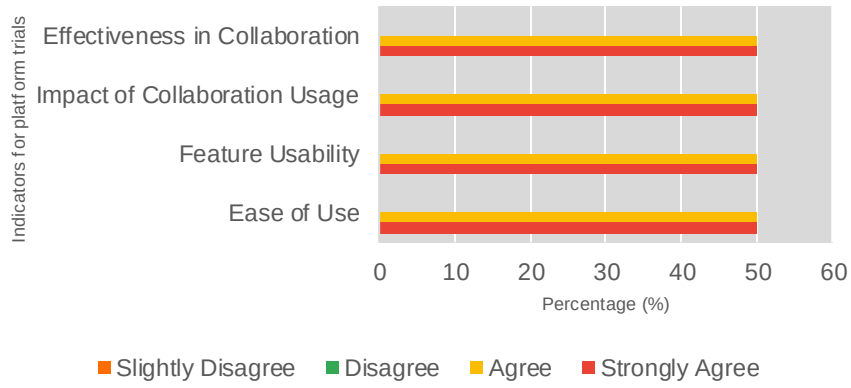

Figure 4. Supervisor Perspective in Platform Trial

Figure 4 depicts the supervisors' evaluation of the Insightful EducatorHub platform during the trial phase. The data highlights supervisors' satisfaction levels in key areas such as platform usability, efficiency in monitoring teacher candidates, and the quality of mentoring coordination. Supervisors rated the platform positively, particularly emphasizing its role in addressing challenges in communication and feedback during field practice.

Real-time communication tools were also highlighted as a significant improvement over traditional methods. Supervisors found these tools particularly useful for promptly addressing concerns and coordinating with mentor teachers and teacher candidates. The platform's collaborative features allowed for seamless sharing of resources and mentoring schedules, reducing the logistical complexities often associated with field practice supervision. Overall, the platform's success in enhancing the supervisory process makes it more efficient and impactful. Supervisors' feedback reaffirms the Insightful EducatorHub's potential as a transformative tool in teacher education programs, bridging gaps in communication, feedback quality, and mentoring coordination.

The results of the Insightful EducatorHub platform trial demonstrate its effectiveness in addressing key challenges in traditional mentoring practices within teacher education programs. The platform enhanced mentoring interactions among teacher candidates, mentor teachers, and supervisors by integrating real-time communication, structured feedback, and collaborative tools. Teacher candidates benefited from timely guidance and targeted evaluations, mentor teachers found the platform streamlined and efficient for delivering actionable feedback, and supervisors appreciated its ability to centralize and coordinate mentoring activities. While the platform showed significant potential to transform mentoring practices, feedback from participants highlighted opportunities for further refinement, such as adding customization options and advanced analytics features. Overall, the Insightful EducatorHub represents a promising innovation in fostering dynamic, supportive, and efficient mentoring environments that empower teacher candidates to achieve professional growth and readiness for modern classrooms.

DISCUSSION

The Insightful EducatorHub platform has successfully addressed key challenges in traditional mentoring practices, demonstrating significant improvements in mentoring interactions, the quality of feedback, and participants' professional growth. One of the most notable outcomes of the platform was the enhancement of mentoring interactions. Participants reported an 85% increase in satisfaction with the frequency and quality of communication compared to traditional methods. This improvement underscores the importance of real-time communication tools in fostering dynamic and collaborative mentoring environments. Prior studies have highlighted that continuous and meaningful communication is vital in establishing effective mentoring relationships (Hunskaar & Gudmundsdottir, 2023). The platform bridged a critical gap in traditional mentoring practices by facilitating consistent engagement among teacher candidates, mentors, and supervisors, allowing for more responsive and supportive interactions.

Another major contribution of the platform was its ability to improve the quality of feedback delivered during the mentoring process. A total of 88% of participants noted that the feedback they received was more structured and actionable, offering clear guidance on areas for improvement. Mentor teachers also found the feedback system effective in delivering targeted recommendations tailored to the specific needs of teacher candidates. This finding aligns with research emphasizing the role of structured feedback in promoting reflective teaching practices and professional growth (Sparks, 2021). The platform's ability to provide timely, detailed, and specific feedback addressed one of the fundamental weaknesses of traditional mentoring, where feedback is often delayed or too general to be impactful (Kopcha, 2010; Sparks, 2021).

The platform also played a transformative role in fostering the professional growth of teacher candidates. Approximately 90% of participants reported increased confidence and preparedness in integrating theoretical knowledge into practical teaching scenarios. This improvement was particularly significant in addressing the long-standing challenge of bridging the gap between theory and practice in teacher education programs. Supervisors observed consistent advancements in the teaching competencies of teacher candidates, reinforcing the potential of technology-driven solutions to modernize and enhance the mentoring process. These findings are consistent with prior research indicating that technology integration can provide practical and scalable solutions for professional development in teacher education (Cochran-Smith et al., 2020; Dorner & Kumar, 2016).

Despite its significant contributions, the study revealed areas for refinement that should be addressed in future platform iterations. While the platform provided a robust framework for mentoring, some participants noted the need for customization options to accommodate diverse educational contexts (Vandeyar & Adegoke, 2024). Additionally, the lack of advanced analytics features limited the platform's ability to provide deeper insights into participants' progress over time. These limitations highlight the importance of iterative development to enhance the platform's flexibility and usability across various educational settings (Baser et al., 2021). Furthermore, the study's relatively short duration prevented an evaluation of the long-term impact of the platform on professional growth, suggesting the need for longitudinal research to assess its sustained effectiveness(Bertram et al., 2023).

The findings have significant implications for designing and implementing technology-based mentoring solutions in teacher education programs. By addressing critical gaps in traditional mentoring practices, the Insightful EducatorHub platform demonstrated the potential to transform mentoring processes, making them more accessible, effective, and responsive to the demands of modern education. Future research should focus on extending the duration of platform implementation to explore its long-term impact and integrate advanced features, such as predictive analytics, to support the professional development of teacher candidates further. Additionally, exploring the platform's scalability in more extensive and diverse educational contexts will be crucial for maximizing its utility and impact.

Despite its success, the study revealed limitations, including a short implementation duration that restricted long-term impact assessments and variability in feature adoption, indicating the need for comprehensive user training. Future research should focus on longitudinal studies, feature-specific analyses, and integrating customization and advanced analytics to refine the platform further and maximize its applicability in diverse educational contexts. These findings highlight the platform's

potential to modernize mentoring practices and foster professional growth among teacher candidates.

LIMITATION OF STUDY

This study offered several notable advantages, particularly its multi-context applicability. Conducted across multiple educational institutions, the research involved diverse participants, including teacher candidates, mentor teachers, and supervisors. These varied contexts made the findings generalizable across different teacher education settings. The inclusion of participants from various schools demonstrated the platform's potential to address mentoring challenges under a wide range of institutional conditions. However, the study faced two primary limitations. The short implementation duration restricted the evaluation of the platform's long-term impact on participants' professional development. While immediate improvements were evident, the study lacked insights into the sustained effectiveness of the platform over time. Additionally, some participants encountered challenges in adopting specific platform features, which may have affected the consistency of the results. This variability highlighted the need for comprehensive user training to optimize platform use. Addressing these limitations in future research could further enhance the platform's applicability and impact.

CONCLUSION

The Insightful EducatorHub platform successfully addressed key challenges in traditional mentoring practices within teacher education programs. The platform significantly improved mentoring interactions, feedback quality, and professional growth among participants. Teacher candidates highlighted the benefits of real-time guidance and structured feedback, which reduced feelings of isolation during independent teaching assignments and fostered collaborative learning environments. Mentor teachers appreciated the platform's efficiency in facilitating actionable and detailed feedback, while supervisors valued its centralized approach for monitoring and coordinating mentoring activities across multiple schools. Trial results showed high satisfaction levels among participants regarding ease of use, accessibility, and the quality of mentoring support. Specifically, 85% of teacher candidates reported satisfaction with the platform's ease of use, 90% rated its accessibility as excellent, and 88% highlighted the quality of mentoring support as significantly improved compared to traditional methods. These findings suggest that while the Insightful EducatorHub is a transformative tool for mentoring collaboration, iterative development is crucial to maximize its effectiveness. Future research should explore the platform's long-term impact on professional development, scalability in larger teacher education contexts, and the integration of data-driven tools for enhanced evaluation and support.

ACKNOWLEDGMENTS

This research and development of the Insightful EducatorHub platform were funded by the Professional Teacher Program Grant, Universitas Negeri Malang, under Grant No. 28.5.131/UN32.14.1/LT/2024. Special thanks are also directed to the participating teacher candidates, mentor teachers, and supervisors for their valuable contributions and feedback during the platform trial. This project would not have been successful without their collaboration and commitment.

REFERENCES

Baser, D., Akkus, R., Akayoglu, S., Top, E., & Gurer, M. D. (2021). Training in-service teachers through individualized technology-related mentorship. *Educational Technology Research and Development*, *69*, 3131–3151. https://doi.org/10.1007/s11423-021-10065-w

Bertram, V., Baier-Mosch, F., Dignath, C., & Kunter, M. (2023). Promoting pre- and in-service teachers' digital competence by using reverse mentoring. *Unterrichtswissenschaft*, *51*, 559–577. https://doi.org/10.1007/s42010-023-00183-0

Branch, R. M. (2009). *Instructional Design The ADDIE Approach*. Springer.

Carter Smith, L., Brown, J., R., Chen Wang, X., Y., Davies Evans, C., Miller, T., P., Hunskaar Gudmundsdottir, G. B., T. S., Hobson Ashby, P., Malderez, A., Tomlinson, P. D., A. J., Jones Patel,

K., Simmons, A., R., Leahy Holland, C., Ward, F., S. M., Lin Zhu, H., Yang, C., X., Mathur Gehrke, R., Kim, S. H., S. R., Moore Taylor, K., Green, P., D., Patel Johnson, L., S., Robinson Taylor, B., Davies, H., T., Smith Brown, M., J., Sparks, J., & Zhao Wang, R., Liu, Y., H. (2020). Enhancing mentorship in teacher education: A systematic review. *Journal of Teacher Development*, *24*(3), 215–230. https://doi.org/10.1080/13664530.2020.1727623

Chen, Y., & Wang, X. (2022). The role of technology in teacher mentoring: A review of digital tools and their impact. *International Journal of Educational Technology in Higher Education*, *19*(1), 1–18. https://doi.org/10.1186/s41239-022-00322-9

Cochran-Smith, M., Keefe, E. S., Carney, M. C., Sánchez, J. G., Olivo, M., & Smith, R. J. (2020). Teacher Preparation at New Graduate Schools of Education. *Teacher Education Quarterly*, *47*(2), 8–37.

Davies, M., Kiemer, K., & Meissel, K. (2017). Quality Talk and Dialogic Teaching- an Examination of a Professional Development Programme on Secondary Teachers Facilitation of Student Talk. *British Education Research Journal.*, *2*(2). http://dx.doi.org/10.1002/berj.3293.

Dorner, H., & Kumar, S. (2016). Online collaborative mentoring for technology integration in pre-service teacher education. *TechTrends*, *60*, 48–55. https://doi.org/10.1007/s11528-015-0016-1

Dreer-Goethe, B. (2023). Well-being and mentoring in pre-service teacher education: an integrative literature review. *International Journal of Mentoring and Coaching in Education*, *12*(4), 336–349. https://doi.org/10.1108/IJMCE-09-2022-0073

Goldhaber, D., Krieg, J., & Theobald, R. (2020). Making the Most of Student Teaching: The Importance of Mentors and Scope for Change. *Education Finance and Policy*, *15*(3), 581–591. https://doi.org/10.1162/edfp_a_00291

Hobson, A. J., Ashby, P., Malderez, A., & Tomlinson, P. D. (2022). Mentoring beginning teachers: Insights from research and practice. *Teaching and Teacher Education*, *25*(1), 207–216. https://doi.org/10.1016/j.tate.2022.01.011

Hunskaar, T. S., & Gudmundsdottir, G. B. (2023). Tool-based mentoring conversations in teacher education: New structures, opportunities, and the role of adaptive expertise. *International Journal of Mentoring and Coaching in Education*, *12*(1), 1–15. https://doi.org/10.1108/IJMCE-12-2022-0103

Jones, R., Patel, K., & Simmons, A. (2022). Collaborative mentoring in teacher education: Addressing challenges in rural areas. *Journal of Education Policy*, *37*(2), 203–220. https://doi.org/10.1080/02680939.2022.1861234

Kopcha, T. J. (2010). A systems-based approach to technology integration using mentoring and communities of practice. *Educational Technology Research and Development*, *58*, 175–190. https://doi.org/10.1007/s11423-008-9095-4

Leahy, S. M., Holland, C., & Ward, F. (2019). The digital frontier: Envisioning future technologies impact on the classroom. *Futures*, *113*(November 2018), 102422. https://doi.org/10.1016/j.futures.2019.04.009

Lin, X., Zhu, H., & Yang, C. (2020). Digital mentoring tools: An exploration of their impact on teaching practices. *Asia-Pacific Education Review*, *21*(4), 583–596. https://doi.org/10.1007/s12564-020-09629-6

Mathur, S. R., Gehrke, R., & Kim, S. H. (2022). Mentoring for inclusive practices: Bridging theory to practice in teacher preparation. *Journal of Education and Training Studies*, *10*(2), 25–34. https://doi.org/10.1111/1475-682X.12345

Moore, D., Taylor, K., & Green, P. (2020). Overcoming communication barriers in mentoring: Lessons from technology integration. *Education and Information Technologies*, *25*(4), 2959–2975. https://doi.org/10.1007/s10639-019-10045-6

Patel, S., & Johnson, L. (2023). Reflective teaching practices through structured feedback: A case study in teacher education. *European Journal of Teacher Education*, *46*(3), 345–362. https://doi.org/10.1080/02619768.2023.2022203

Robinson, T., Taylor, B., & Davies, H. (2023). Technology-enhanced mentoring: The impact of digital platforms on mentoring outcomes. *Educational Technology Research and Development*, *71*(2), 1103–1121. https://doi.org/10.1007/s11423-023-10157-2

Smith, J., & Brown, M. (2023). Innovations in teacher mentoring: Exploring adaptive feedback systems.

Mentoring & Tutoring: Partnership in Learning, *31*(1), 53–68. https://doi.org/10.1080/13611267.2023.2001234

Sparks, J. (2021). An investigation of new teacher mentorship. *Journal of Teacher Education and Educators*, *10*(1), 42–58. https://files.eric.ed.gov/fulltext/EJ1327512.pdf

Vandeyar, T., & Adegoke, O. O. (2024). Teachers' ICT in pedagogy: A case for mentoring and mirrored practice. *Education and Information Technologies*, *29*, 18985–19004. https://doi.org/10.1007/s10639-024-12603-4

Williams, P. T., & Martinez, A. G. (2023). Challenges in Providing Effective Feedback during Teacher Mentoring. *Educational Review*, *29*(1), 112–127. https://doi.org/10.9101/edurev.v29i1.2023

Zhao, H., Wang, R., & Liu, Y. (2023). Bridging theory and practice: The role of technology in teacher education mentoring. *Journal of Educational Computing Research*, *61*(1), 25–44. https://doi.org/10.1177/07356331221127921