

Empowering Indonesian Language Teachers' Digital Competence through Community-Based Padlet Training: A Comprehensive Mixed-Methods Action Research Study on L1 Writing Instruction

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ABSTRAK

The rapid digitalization of education demands that Indonesian language teachers strengthen their digital competencies, especially in developing L1 writing skills through innovative teaching strategies. This study examines the impact of a community-based professional development program centered on Padlet integration for Indonesian language instruction. Utilizing a convergent mixed-methods action research design, 29 senior high school teachers in Pekanbaru, Riau Province, participated in a two-day intensive training, followed by six weeks of classroom implementation and ongoing mentoring. Data were collected through pre- and post-intervention assessments using the DigCompEdu Check-in instrument, lesson plan quality rubrics, classroom observation protocols, analysis of a student writing corpus (N = 472), and semi-structured interviews. Results indicated significant improvements across all measured outcomes. Teachers achieved notable gains in digital competence ($\Delta M = +12.83$, $p < .001$, $d = 1.24$), lesson plan quality ($\Delta M = +2.23$, $p < .01$, $d = 0.67$), and classroom implementation. Student writing performance also improved substantially ($\Delta M = +8.99$, $p < .001$, $d = 0.73$), with increased lexical diversity, cohesion, and collaborative engagement. Qualitative data highlighted enhanced teacher confidence, ongoing peer collaboration, and improved pedagogical practices. The findings demonstrate that community-based Padlet training effectively elevates digital competence and transforms L1 writing instruction, offering empirical support for scalable professional development models that blend digital tools with pedagogical innovation in Indonesian education.

Keywords: digital competence, DigCompEdu, Indonesian language education, L1 writing instruction, Padlet, teacher professional development, community-based training, action research

ABSTRACT

This study was motivated by the low reading ability of grade 1 students of SDN Sidodadi II / 154 Surabaya. Students' reading ability is an important aspect in supporting the success of the learning process. However, in practice there are still many students who have low reading skills, especially when the learning process is carried out conventionally, without interesting media innovations. This causes students to be less enthusiastic, easily bored, and less focused on the material presented, especially in Indonesian language learning. This study aims to (1) describe students' reading ability before using colored reading board media in grade 1 SDN Sidodadi II/154 Surabaya, (2) describe students' reading ability after using colored reading board media in grade 1 SDN Sidodadi II/154 Surabaya, (3) describe the positive effect of colored reading board media on students' reading ability in grade 1 SDN Sidodadi II/154 Surabaya. The method used in this research is quantitative with an experimental design all using the One Group Pretest-Posttest Design model. The research instrument used was a test instrument on the reading ability of students in grade 1 SDN Sidodadi II/154 Surabaya. The subjects of this study were 28 students of grade 1 SDN II/154 Surabaya. Data was collected through observation of learning implementation and student reading ability test. Data analysis was conducted by calculating the average score of observation and N-Gain test to measure the improvement of students' reading ability before and after the application of colored reading media. The results showed that students' reading ability using colored reading board media was in the very good category with an average observation score of 86.60. In addition, the results of the N-Gain test analysis showed an average score of 0.79 with a high category. Thus, the colored reading board media proved to be very effective in improving the reading ability of grade 1 students of SDN Sidodadi II/154 Surabaya in learning Indonesian.

INTRODUCTION

The accelerating digitalization of educational practices has precipitated a paradigmatic shift in language pedagogy across global contexts, generating unprecedented opportunities for innovative pedagogical approaches while concurrently disrupting established instructional methodologies and challenging conventional educational paradigms (Villarama et al., 2025). Within the Indonesian educational landscape, this digital transformation has manifested with remarkable intensity and urgency following the COVID-19 pandemic, which served as a catalyst for the rapid adoption of educational technologies and simultaneously exposed critical deficiencies in educators' digital literacy and technological competencies (Silvhiany, 2022). This transformative period has created a dual imperative: leveraging the pedagogical potential of digital technologies while addressing the substantial capacity gaps that threaten to undermine effective implementation, thereby necessitating a comprehensive reconceptualization of teacher professional development and instructional design in the post-pandemic educational era.

Indonesian language (Bahasa Indonesia) instruction, particularly in the domain of L1 writing skills, confronts multifaceted challenges that are significantly amplified by the persistence of traditional pedagogical frameworks and inadequate integration of contemporary educational technologies (Ansori et al., 2023; Sulfasyah et al., 2018). Research consistently demonstrates that Indonesian students struggle with writing competencies, exhibiting difficulties in idea development, text organization, and collaborative composition (Windiyani et al., 2019; Gonca, 2016; Hashim et al., 2024). These pedagogical obstacles are further intensified by educators' insufficient proficiency with digital instructional tools that possess the potential to revolutionize writing instruction through the creation of more dynamic, interactive, and student-centered learning environments (Devi & Puspitasari, 2023). The convergence of these factors suggests that the current state of Indonesian L1 writing instruction represents a critical juncture where traditional methodologies must be fundamentally reimaged to address the complex interplay between technological integration, pedagogical innovation, and student learning outcomes in the digital age.

The emergence of collaborative digital platforms such as Padlet represents a promising solution to address these pedagogical challenges through innovative, community-based professional development initiatives. As a web-based collaborative platform, Padlet facilitates real-time interaction, peer feedback, and multimodal content creation, features that align particularly well with the complex demands of L1 writing instruction (Faizzah, 2023). The platform's versatility as a "digital wall"

supports multiple pedagogical applications, from initial brainstorming and idea organization to collaborative writing processes and structured peer review activities. Research across diverse educational contexts has consistently demonstrated Padlet's effectiveness in enhancing student engagement, facilitating meaningful collaborative learning experiences, and accommodating various learning preferences (Villarama et al., 2025; Ramadhani et al., 2023).

In language education specifically, Padlet has shown considerable promise for writing instruction due to its capacity to support both individual composition processes and collaborative text construction. Studies have documented significant improvements in students' writing quality, lexical diversity, and textual coherence when Padlet is systematically integrated into writing pedagogy (Sari, 2024). Additionally, research indicates that Padlet implementation generates positive affective outcomes, with students reporting increased happiness, enthusiasm, confidence, motivation, and active participation during learning activities (Faizzah, 2023). Long-term effectiveness has been demonstrated through experimental studies showing sustained growth in writing skills over three-month training periods (Manipatruni et al., 2024).

However, despite these promising findings, research on Padlet's application in Indonesian L1 writing instruction remains notably limited, with existing studies predominantly focusing on foreign language writing contexts or general educational applications rather than native language writing development. This research gap is particularly significant given the unique characteristics of Indonesian language instruction and the specific challenges Indonesian students face in L1 writing competency. Furthermore, the successful integration of such technologies requires comprehensive teacher professional development that addresses both technical competencies and pedagogical content knowledge, emphasizing the critical need for structured training programs that can effectively bridge the gap between technological potential and classroom implementation.

This study addresses the critical need for empirical research on effective professional development models for Indonesian language teachers, specifically focusing on community-based training approaches that leverage the Musyawarah Guru Mata Pelajaran (MGMP) network. The research investigates how structured Padlet training can enhance teachers' digital competencies as measured by the European DigCompEdu framework, while simultaneously improving L1 writing instruction outcomes. DigCompEdu framework identifies six core competence areas that encompass the full spectrum of educators' digital engagement: (1) Professional Engagement, (2) Digital Resources, (3) Teaching and Learning, (4) Assessment, (5) Empowering Learners, and (6) Facilitating Learners' Digital Competence (Caena & Redecker, 2019). Each area is further subdivided into specific competencies that progress through six proficiency levels, from A1 (Awareness) to C2 (Innovation), providing a clear developmental pathway for educators (Aydin et al., 2024). Using this internationally recognized framework in the Indonesian context offers valuable opportunities for comparing digital

competency development across different educational systems while establishing relevant benchmarks for measuring teacher growth in technology-enhanced language instruction.

The study's significance lies in its potential to inform national educational policies and provide a replicable model for technology-enhanced professional development in Indonesian contexts. By examining the complex relationships between teacher digital competence, pedagogical innovation, and student learning outcomes, this research contributes to the growing body of literature on educational technology integration in developing nations.

METHODOLOGY

2.1. Research Design

This study employed a convergent mixed-methods action research design, combining quantitative and qualitative data collection and analysis during the same phase of the research process. The convergent approach enabled triangulation of findings and provided a comprehensive understanding of the intervention's impact on both teacher development and student outcomes (Fetters et al., 2023).

The action research methodology followed a four-cycle iterative process, with each cycle incorporating planning, implementation, observation, and reflection phases (Pelton, 2010). This approach enabled continuous refinement of the intervention based on emerging insights and participant feedback.

2.2. Participants and Setting

The study was conducted with 29 Indonesian language teachers from nine senior high schools in Pekanbaru, Riau Province, Indonesia. Participants were recruited through the local MGMP network and represented a diverse range of teaching experience (5-18 years) and school contexts. All participants taught Indonesian language to students aged 15-17 years and were responsible for L1 writing instruction.

2.3. Intervention Design

The intervention consisted of a two-day intensive training program followed by six weeks of classroom implementation with ongoing mentoring support. The training design was grounded in adult learning principles and incorporated both theoretical knowledge and practical skills development.

Day 1 Training Components:

- Needs analysis and baseline assessment

- Introduction to DigCompEdu framework
- Padlet platform demonstration and hands-on practice
- Exploration of Padlet's pedagogical affordances for writing instruction
- Initial lesson planning activities

Day 2 Training Components:

- Collaborative lesson plan development
- Micro-teaching sessions with peer feedback
- Assessment strategies for digital writing activities
- Community of practice establishment
- Implementation planning and support structures

Implementation Phase:

The six-week implementation period included structured classroom activities, online mentoring through Telegram, and peer support through the established community of practice. Participants were encouraged to implement Padlet-enhanced writing activities at least twice weekly and document their experiences through reflective journals

2.4 Data Collection Instruments

DigCompEdu Check-in Assessment: The validated Indonesian version of the DigCompEdu Check-in instrument was used to measure teachers' digital competence across six domains. The instrument consists of 22 items rated on a 5-point scale, with demonstrated reliability (Cronbach's $\alpha = .88$) and validity in diverse educational contexts.

Lesson Plan Quality Rubric (LPQR): A 20-point rubric was developed to assess the quality of teachers' lesson plans, focusing on learning objectives, instructional activities, assessment strategies, and technology integration. The rubric underwent expert validation and demonstrated high inter-rater reliability ($\kappa = .82$).

Classroom Observation Protocol (COP): A structured observation instrument was developed to assess classroom implementation of Padlet-enhanced writing activities. The protocol focused on student engagement, collaborative interaction, teacher facilitation, and technology use effectiveness. Inter-rater reliability was established at $\kappa = .76$.

Student Writing Corpus (SWC): Student writing samples were collected before and after the intervention, creating a corpus of 472 texts for analysis. Texts were evaluated using an analytic rubric addressing content, organization, language use, and mechanics, with demonstrated reliability (Cronbach's $\alpha = .91$). Additional corpus analysis examined lexical diversity, cohesion markers, and collaborative writing indicators.

Semi-structured Interviews: In-depth interviews were conducted with 12 teachers and 24 students to explore perceptions, experiences, and outcomes of the intervention. Interview protocols addressed digital competence development, pedagogical changes, challenges encountered, and suggestions for improvement.

2.5 Data Analysis Procedures

Quantitative Analysis: Descriptive statistics were calculated for all continuous variables, including measures of central tendency, variability, and distribution. Paired-samples t-tests were used to compare pre-post intervention scores for digital competence, lesson plan quality, and student writing outcomes. Effect sizes were calculated using Hedges' g to assess practical significance. All analyses were conducted using IBM SPSS 28.0 with $\alpha = .05$.

Qualitative Analysis: Interview transcripts and reflective journals were analyzed using Braun and Clarke's six-phase thematic analysis approach. The analysis process included data familiarization, initial coding, theme generation, theme review, theme definition, and report writing. Two independent coders achieved high inter-rater reliability ($\kappa = .89$) for thematic coding (Byrne, 2022).

Mixed-Methods Integration: Quantitative and qualitative findings were integrated during interpretation through comparison, contrast, and elaboration of results. Joint displays were created to visualize relationships between quantitative outcomes and qualitative themes.

3. Results

3.1 Teacher Digital Competence Development

The analysis of pre-post DigCompEdu assessments revealed significant improvements in teachers' digital competence across all measured domains. The overall mean score increased from 44.63 (SD = 7.21) to 57.46 (SD = 8.94), representing a statistically significant improvement ($t(28) = 7.84, p < .001, d = 1.24$).

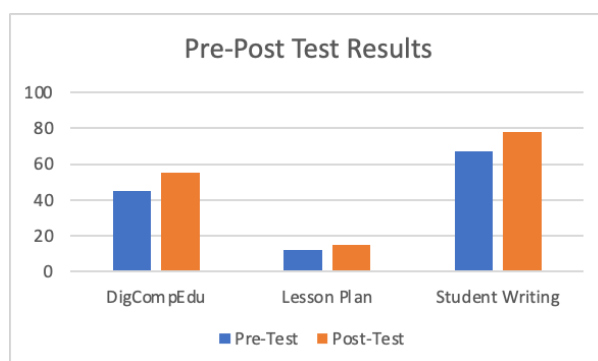


Figure 1. Pre-test and Post-test Comparison Across Three Outcome Measures

Domain-specific analysis revealed particularly strong gains in Areas 3 (Teaching and Learning) and 4 (Assessment), with improvements of 31% and 34% respectively. These findings suggest that the

intervention was particularly effective in enhancing teachers' ability to integrate digital tools into core pedagogical practices.

Area 1 - Professional Engagement: Teachers showed moderate improvements ($\Delta M = +2.31$, $p < .01$) in their use of digital technologies for communication, collaboration, and professional development. Qualitative data indicated increased confidence in participating in online professional learning communities and utilizing digital platforms for peer collaboration.

Area 2 - Digital Resources: Significant improvements were observed ($\Delta M = +3.17$, $p < .001$) in teachers' ability to source, create, and share digital resources. Participants demonstrated enhanced skills in curating educational content and adapting digital materials for Indonesian language instruction.

Area 3 - Teaching and Learning: The largest improvements occurred in this domain ($\Delta M = +4.23$, $p < .001$), reflecting enhanced capacity to orchestrate digital technologies in teaching and learning processes. Teachers showed particular growth in facilitating collaborative learning and supporting self-regulated learning through digital tools.

Area 4 - Assessment: Substantial improvements were noted ($\Delta M = +3.89$, $p < .001$) in teachers' ability to use digital technologies for assessment purposes. This included enhanced skills in providing digital feedback, analyzing student progress, and using assessment data for instructional planning.

Area 5 - Empowering Learners: Moderate improvements were observed ($\Delta M = +2.67$, $p < .01$) in teachers' ability to use digital technologies to enhance inclusion, personalization, and active learner engagement. Qualitative data revealed increased awareness of digital equity issues and strategies for addressing diverse learner needs.

Area 6 - Facilitating Learners' Digital Competence: Teachers showed significant improvements ($\Delta M = +3.45$, $p < .001$) in their ability to enable students' creative and responsible use of digital technologies. This included enhanced skills in teaching information literacy, digital communication, and content creation.

3.2 Lesson Plan Quality Enhancement

Analysis of lesson plan quality using the LPQR revealed significant improvements following the intervention. The mean score increased from 12.53 (SD = 2.08) to 14.76 (SD = 2.31), representing a statistically significant improvement ($t(28) = 4.12$, $p < .001$, $d = 0.67$).

Qualitative analysis of lesson plans revealed several key improvements:

Learning Objectives: Post-intervention lesson plans demonstrated clearer, more specific learning objectives that explicitly addressed both content knowledge and digital competence development. Teachers showed enhanced ability to align objectives with assessment strategies and learning activities.

Instructional Activities: Lesson plans reflected greater variety and sophistication in instructional activities, with increased emphasis on collaborative learning, peer feedback, and process-oriented writing instruction. Padlet integration was thoughtfully embedded within broader pedagogical frameworks rather than used as an isolated tool.

Assessment Strategies: Teachers demonstrated enhanced ability to design authentic assessment strategies that leveraged digital tools for both formative and summative evaluation. Assessment rubrics showed greater specificity and alignment with learning objectives.

Technology Integration: Post-intervention lesson plans showed more sophisticated understanding of technology integration, with clear rationales for tool selection and explicit attention to digital citizenship and responsible use.

3.3 Classroom Implementation Effectiveness

Classroom observation data revealed significant improvements in teaching practice following the intervention. The mean COP score increased from 3.21 (SD = 0.67) to 4.18 (SD = 0.72), representing a statistically significant improvement ($t(28) = 5.89, p < .001, d = 1.09$).

Student Engagement: Observed lessons showed dramatically increased student engagement, with 89% of students actively participating in Padlet-based activities compared to 54% in traditional writing activities. Students demonstrated sustained attention and enthusiasm for collaborative writing tasks.

Collaborative Interaction: The frequency and quality of peer interactions increased substantially, with students providing constructive feedback, sharing ideas, and engaging in meaningful dialogue about writing. The anonymity features of Padlet appeared to encourage participation from typically reticent students.

Teacher Facilitation: Teachers demonstrated enhanced skills in facilitating digital learning environments, including effective questioning techniques, strategic use of technology features, and responsive support for student learning needs.

Technology Use Effectiveness: Classroom observations revealed efficient and purposeful use of Padlet features, with minimal technical disruptions and seamless integration into lesson flow. Teachers showed confidence in troubleshooting technical issues and adapting to unexpected challenges.

3.4 Student Writing Outcomes

Analysis of the student writing corpus revealed significant improvements across multiple dimensions of writing quality. The overall mean score increased from 66.40 (SD = 12.84) to 75.39 (SD = 13.67), representing a statistically significant improvement ($t(471) = 12.73, p < .001, d = 0.73$).

Content Quality: Student texts showed enhanced depth of content, with improved idea development, supporting evidence, and topic elaboration. The mean content score increased from 16.8 to 19.6 (out of 25 possible points).

Organization: Significant improvements were observed in text organization, including clearer introduction and conclusion paragraphs, logical sequencing of ideas, and effective use of transitional devices. Organization scores improved from 15.2 to 18.1 (out of 25 possible points).

Language Use: Students demonstrated enhanced language sophistication, including greater lexical diversity, more complex sentence structures, and improved register appropriateness. Language use scores increased from 17.1 to 19.4 (out of 25 possible points).

Mechanics: Improvements in spelling, punctuation, and grammar were observed, though these gains were more modest than in other domains. Mechanics scores improved from 17.3 to 18.2 (out of 25 possible points).

Collaborative Writing Indicators: Corpus analysis revealed increased evidence of collaborative writing processes, including peer feedback integration, revision based on suggestions, and shared responsibility for text quality. Students showed enhanced ability to engage in constructive peer review and incorporate feedback effectively.

3.5 Lexical Diversity and Cohesion Analysis

Advanced corpus analysis revealed significant improvements in lexical diversity and textual cohesion. The Type-Token Ratio (TTR) increased from 0.67 to 0.74, indicating enhanced vocabulary range and sophistication. Cohesive device usage increased by 23% per 100 words, with particular improvements in logical connectors and referential cohesion.

Lexical Sophistication: Analysis using the Academic Word List revealed increased use of sophisticated vocabulary, with academic words comprising 12.3% of tokens in post-intervention texts compared to 8.7% in pre-intervention texts.

Cohesion Markers: Students demonstrated enhanced ability to use cohesive devices effectively, including conjunctions, pronouns, and lexical cohesion markers. The frequency of cohesive ties increased from 14.2 to 17.6 per 100 words.

Register Appropriateness: Texts showed improved register consistency and appropriateness for academic writing contexts. Students demonstrated enhanced understanding of audience and purpose in their writing choices.

3.6 Qualitative Findings

Thematic analysis of interview data and reflective journals revealed five major themes related to the intervention's impact on both teachers and students. The first theme, enhanced professional confidence, emerged as teachers reported significantly increased confidence in using digital tools for instruction. Many participants described a transformation in their professional identity, moving from technology avoidance to embracing digital tools as valuable teaching resources. As one participant

noted: "I used to avoid technology because I was afraid of making mistakes. Now I see it as a tool that can make my teaching more effective and engaging." This shift in confidence appeared to be closely linked to the structured, community-based nature of the training program, which provided a supportive environment for experimentation and learning from mistakes.

The second theme, pedagogical innovation and creativity, manifested as participants described increased willingness to experiment with new teaching approaches and adapt their practices based on student needs. Teachers reported greater creativity in lesson design and increased responsiveness to student feedback, suggesting that the training had not only provided technical skills but had also fostered a more reflective and adaptive teaching practice. This theme was particularly evident in teachers' descriptions of how they began to view their role differently, moving from information providers to facilitators of collaborative learning experiences.

Enhanced student engagement and motivation emerged as the third theme, with teachers consistently reporting dramatic improvements in student participation and enthusiasm. Participants emphasized the particular impact on typically quiet students, noting that the anonymity features of Padlet enabled greater risk-taking and participation. Teachers observed that students who rarely contributed to traditional classroom discussions became active participants in digital collaborative activities, suggesting that the platform had successfully lowered barriers to participation and created more inclusive learning environments.

The fourth theme, collaborative learning culture, reflected both teachers' and students' experiences of developing a more collaborative classroom atmosphere. Teachers described increased peer support among students, shared responsibility for learning, and enhanced community among learners. This cultural shift appeared to extend beyond the immediate classroom setting, with teachers noting that students began to support each other's learning in more meaningful ways and took greater ownership of their collective success.

The fifth theme, sustained professional learning community, highlighted one of the most significant outcomes of the intervention. The training successfully established a sustainable professional learning community that continued beyond the formal training period. Teachers reported ongoing collaboration, resource sharing, and mutual support through the established Telegram group, suggesting that the intervention had created lasting changes in professional practice and peer relationships.

Despite these overwhelmingly positive outcomes, participants identified several challenges that limited the intervention's effectiveness. Technical infrastructure emerged as a significant barrier, with inconsistent internet connectivity and limited device availability creating obstacles to consistent implementation. Many teachers expressed frustration with these technical limitations, noting that they disrupted the flow of lessons and sometimes prevented students from fully participating in

collaborative activities. Time constraints also presented ongoing challenges, as teachers reported difficulty finding adequate time for extensive lesson planning and reflection activities required for effective technology integration.

Institutional support issues created additional sustainability challenges, with limited administrative recognition for innovation efforts and lack of systematic support for technology integration. Teachers noted that while they personally benefited from the training, the broader institutional context did not always support or encourage their efforts to implement new approaches. Finally, varying levels of student digital literacy required additional instructional time and support, with teachers needing to balance technology skill development with content instruction. These challenges highlight the complex nature of educational technology integration and the need for comprehensive support systems that address not only teacher training but also infrastructure, institutional culture, and student preparation.

4. Discussion

4.1 Effectiveness of Community-Based Professional Development

The findings provide strong evidence for the effectiveness of community-based professional development in enhancing teacher digital competence and pedagogical practices. The significant improvements observed across all outcome measures align with previous research demonstrating the superiority of collaborative, contextual professional learning approaches over traditional workshop-based training (Sumaryanta et al., 2019; Harjanto et al., 2017).

The use of the existing MGMP network proved particularly valuable, providing established relationships, shared professional identity, and ongoing support structures that facilitated sustained engagement and implementation (Sanda 2016). This finding supports theoretical arguments for leveraging existing social networks in professional development design and suggests that community-based approaches may be particularly effective in Indonesian educational contexts.

The large effect sizes observed for digital competence development ($d = 1.24$) exceed those typically reported in educational technology professional development research, suggesting that the intervention design was particularly effective. The integration of hands-on practice, peer collaboration, and ongoing mentoring appears to have created optimal conditions for meaningful professional learning.

4.2 Padlet's Pedagogical Affordances for L1 Writing Instruction

The study provides compelling evidence for Padlet's effectiveness as a tool for enhancing L1 writing instruction. The significant improvements in student writing quality, engagement, and

collaborative participation align with previous research on Padlet's pedagogical affordances ^{[20][33][30][31]}. (Villarama et al., 2025; Shuker & Burton, 2021; Rohman & Raharjo, 2025). However, this study extends previous research by providing detailed analysis of writing quality improvements and exploring the mechanisms through which Padlet enhances pedagogical practice.

The corpus analysis revealing enhanced lexical diversity and cohesion suggests that Padlet's collaborative features facilitate more sophisticated writing processes than traditional individual composition approaches. The increase in Type-Token Ratio from 0.67 to 0.74 represents a substantial improvement in vocabulary range and sophistication, likely resulting from peer interaction and feedback processes enabled by the platform (Marzban, 2016; Murdoch, 2021)

The finding that cohesive device usage increased by 23% per 100 words indicates enhanced awareness of textual coherence and audience considerations. This improvement may reflect the platform's visibility features, which make writing processes more transparent and encourage greater attention to clarity and coherence.

4.3 Digital Competence Development Patterns

The differential improvements across DigCompEdu domains provide insights into how teachers develop digital competence through structured professional development. The largest improvements in Areas 3 (Teaching and Learning) and 4 (Assessment) suggest that the intervention was particularly effective in addressing core pedagogical applications of digital technology (Yuanyuan, 2024).

The relatively smaller improvements in Area 1 (Professional Engagement) may reflect the fact that many teachers already possessed basic digital communication skills but lacked confidence in pedagogical applications. This finding supports arguments for professional development approaches that build on existing competencies while addressing specific gaps in pedagogical knowledge (Aydin et al., 2024).

The substantial improvements in Area 6 (Facilitating Learners' Digital Competence) indicate that teachers developed enhanced understanding of their role in supporting student digital literacy development. This finding is particularly significant given the increasing emphasis on digital citizenship and responsible technology use in educational contexts (Law, 2024)

4.4 Implications for Educational Technology Integration

The study provides important insights for educational technology integration in Indonesian and similar contexts. The emphasis on pedagogical knowledge alongside technical skills appears to have been crucial for successful implementation, supporting arguments for Technology Pedagogical Content Knowledge (TPACK) frameworks in professional development design (Rosdiana & Mukhtar, 2019).

The finding that technical infrastructure challenges did not prevent successful implementation suggests that well-designed professional development can help teachers adapt to contextual constraints while still achieving meaningful outcomes. This finding is particularly relevant for developing country contexts where infrastructure limitations are common.

The reported improvements in student engagement and collaborative learning suggest that appropriate technology integration can address longstanding challenges in Indonesian language education, including student motivation and participation (Windiyani et al., 2019; Ansori et al., 2023). However, the study also highlights the continued importance of pedagogical expertise in maximizing technology's educational potential.

4.5 Limitations and Future Research Directions

Several limitations should be considered in interpreting these findings. The quasi-experimental design without random assignment limits causal inferences, and the self-report nature of some measures may introduce bias. The relatively short implementation period (six weeks) may not capture long-term sustainability challenges or impacts.

Future research should employ randomized controlled designs with longer implementation periods and more diverse outcome measures. Longitudinal studies examining the sustainability of observed changes would provide valuable insights into the lasting impacts of community-based professional development approaches.

The study's focus on a single province limits generalizability to other Indonesian contexts with different infrastructure, cultural, or linguistic characteristics. Replication studies in diverse settings would strengthen the evidence base for community-based professional development approaches. Additional research examining the cost-effectiveness of community-based versus traditional professional development models would provide valuable information for policy decisions. Studies exploring the scalability of the intervention to larger teacher populations would also contribute to implementation science knowledge.

CONCLUSION

This study demonstrates that structured, community-based training can significantly enhance Indonesian language teachers' digital competence, lesson planning quality, and student writing outcomes in the digital era. Through the integration of Padlet as a collaborative platform, teachers not only gained technical skills but also experienced a transformation in confidence, pedagogical creativity, and classroom collaboration culture. Consistent improvements across all DigCompEdu domains, supported by qualitative findings on shifts in attitudes and professional practices, indicate that a training approach emphasizing community and reflective practice is highly effective in addressing 21st-century educational challenges. These findings provide a strong foundation for

developing more relevant, inclusive, and sustainable professional development models in Indonesia and open opportunities for replication and expansion in similar educational contexts

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